## AQ-01/SLC

Subtidal Line Contact - Survey Algal and Substrate Abundance (\% Cover for 7 m squared) - Fields Cove FC $1-3 \mathrm{~m}$

| Sampling code: 6 = Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) | Species | Survey: Survey Date: Sampling Code | $\begin{array}{r} 67 \\ \text { 22-Jul-88 } \end{array}$ | $\begin{array}{r} 68 \\ \text { 27-Sep-88 } \end{array}$ | $\begin{array}{r} 69 \\ \text { 1-Mar-89 } \end{array}$ | $\begin{array}{r} 70 \\ \text { 23-May-89 } \end{array}$ | $\begin{array}{r} 71 \\ \text { 24-Aug-89 } \end{array}$ | $\begin{array}{r} 72 \\ \text { 30-Oct-89 } \end{array}$ | [ $\begin{array}{r}73 \\ \text { 22-Mar-90 }\end{array}$ | [ $\begin{array}{r}74 \\ \text { 15-Jun-90 }\end{array}$ | $\begin{array}{r} 75 \\ \text { 27-Jul-90 } \end{array}$ | 7618-Oct-90 | 7913-Aug-91 | $\begin{array}{r} 80 \\ \text { 23-Oct-91 } \end{array}$ | 818-Apr-92 | [ $\begin{array}{r}82 \\ \text { 25-Jun-92 }\end{array}$ | 8326-Aug-92 | $\begin{array}{r} 84 \\ \text { 4-Jan-93 } \end{array}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | $0 \cdot$ | - | $\bigcirc$ | $0 \cdot$ |  | - | - |  | $0 \cdot$ |  |  | 0.03 |  | - |  |
| 0981 | Ahnfeliopsis linearis | 6 | - | 0.03 | - | 0.03 | 0.03 | - | - | - | - | 0.03 | - | 0.50 | 0.03 | 0.05 | - |  |
| 0047 | Amplisiphonia paciica | 6 | - |  | - |  | - |  | - |  |  |  |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex | 6 | - |  | - |  | - |  | - | - |  |  |  |  |  |  |  |  |
| 0245 | Bryopsis spp. | 6 | - | - | - |  | - |  | - |  |  |  |  |  |  | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex | 6 | 45.00 | 39.50 | 43.00 | 49.00 | 50.50 | 44.50 | 43.00 | 48.50 | 57.00 | 46.50 | 65.50 | 41.00 | 53.00 | 59.50 | 54.50 | 47.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. | 6 | - |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabelluata | 6 | - | 0.05 | 0.08 | 0.10 | 0.03 | 0.05 | 0.05 | 0.05 |  |  | 0.08 |  | 0.08 | 0.03 |  | 0.58 |
| 0112 | Callophyllis spp. | 6 | 2.00 | 1.55 | 5.50 | 4.00 | 3.50 | 0.08 | 2.03 | 6.00 | 9.00 | 1.08 | 5.50 | 0.58 | 3.03 | 7.00 | 4.00 | 3.50 |
| 0239 | Chlorophyta (filamentous) | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0125 | Chondracanthus corymbiferus | 6 | 28.00 | 23.00 | 17.00 | 25.50 | 23.50 | 20.00 | 21.00 | 26.50 | 30.00 | 23.50 | 25.00 | 23.00 | 22.00 | 25.50 | 29.00 | 19.50 |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | - | - | - | - | - |  |  | - |  | - |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis | 6 | - | 0.50 | 0.55 | 0.08 | - | - | - | - | 0.03 | - | - | 0.03 | 0.03 | - | - | 0.05 |
| 0052 | Cryptopleura ruprechtiana | 6 | 55.50 | 55.50 | 30.50 | 48.00 | 55.00 | 35.00 | 27.00 | 34.50 | 42.50 | 44.50 | 53.00 | 47.00 | 34.00 | 51.50 | 57.50 | 27.50 |
| 0115 | Cryptopleura violacea | 6 | 0.50 | 0.05 | 0.50 | - | - | - | - | 0.50 | - | 1.00 | 0.03 | - | 1.00 | 0.08 | 1.03 | 0.50 |
| 0036 | Cystoseira osmundacea | 6 | - | - | 0.03 | 0.05 | 0.03 | 0.03 | - | - | - | - |  | 0.03 | 0.03 | 0.03 | - |  |
| 1189 | Delesseria decipiens | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata | 6 | - | - | 0.03 | 0.03 | - | - | - | - | 0.53 | - | - | - | - | - | - |  |
| 0198 | Desmarestia tabacoides | 6 | - | - |  |  | - | - | - | - | - | - | - | - | - |  | - |  |
| 0030 | Dictyoneurum californicum | 6 | - | 0.03 | 0.05 | 0.05 | 0.03 | 0.05 | 0.03 | 0.05 | 0.53 | 0.05 | 0.05 | 0.05 | 0.05 |  | 0.05 | 0.03 |
| 0190 | Dictyota binghamiae | 6 | - |  |  |  | - | - |  |  | - |  |  |  |  |  |  |  |
| 0238 | Ectocarpales | 6 | - | - | - | - | - | - | - |  | - | - | - |  | - | - | - |  |
| 0031 | Egregia menziesii | 6 | ${ }^{-}$ | $\bigcirc$ | $\stackrel{-}{-}$ |  | - |  |  |  |  |  |  |  |  |  | - |  |
| 0071 | Erythrophyllum delesserioides | 6 | 3.50 | 0.58 | 1.05 | 5.50 | 1.50 | 0.53 | 0.03 | 3.05 | 3.00 | 2.50 | 2.50 | 1.53 | 0.08 | 2.53 | 0.53 |  |
| 1304 | Farlowia/Pikea spp.complex | 6 | 1.05 | 0.10 | 1.58 | 1.55 | 0.10 | 0.10 | 1.58 | 0.10 | 0.10 | 0.10 | 0.58 | 1.05 | 0.58 | 1.08 | 2.08 | 1.53 |
| 0193 | Fauchea laciniata | 6 | - | - | - |  | - |  | - |  | - |  |  |  |  | - | - |  |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri | 6 | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 6 | 0.03 | - | 0.03 | 0.03 | - | - | - | 0.05 | 0.03 | - | 0.08 | 0.03 | - | 0.03 | 0.03 | 0.55 |
| 0206 | Gelidium spp. | 6 | - | - | - |  | - | - | - |  | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | $\stackrel{-}{-}$ | ${ }_{0}{ }^{-}$ | $5 \cdot$ | 5 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | 0.55 | 0.53 | 0.50 | 0.50 | - | 0.05 | 2.03 | 0.53 | 0.08 | - | 0.03 | - | 2.03 | 1.55 | 0.03 | 0.03 |
| 0212 | Hymenena spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii | 6 | 1.08 | 0.08 | 3.55 | 2.53 | 0.10 | 3.05 | 0.10 | 2.08 | 1.05 | 2.55 | 0.08 | 1.58 | 0.05 | 0.10 | 0.08 | 1.08 |
| 0233 | Laminariales | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 1640 | Macrocystis pyrifera | 6 | ${ }^{-}$ | $\stackrel{-}{-}$ | - | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | - | $\stackrel{-}{-}$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | 0.08 | 0.10 | 0.08 | 0.08 | 0.05 | 0.03 | 0.10 | 0.10 | 0.05 | 0.05 | 0.08 | 0.05 | 0.08 | 0.03 | 0.03 | 0.03 |
| 3383 | Mazzaella splendens | 6 | 28.00 | 24.50 | 9.50 | 18.50 | 18.00 | 21.00 | 9.00 | 23.00 | 17.00 | 14.50 | 13.50 | 13.50 | 2.50 | 14.50 | 16.00 | 2.50 |
| 0095 | Microcladia coulteri | 6 | 1.08 | 0.58 | 3.00 | 2.53 | 0.10 | 1.05 | 0.58 | 2.53 | 7.00 | 3.53 | 0.58 | 1.05 | 0.10 | 0.10 | 0.10 | 0.05 |
| 0153 | Neoptilota spp. | 6 | - | - | 0.03 | 0.05 | - | - | 0.05 | 0.05 | 0.03 | - | - | 0.03 | 0.03 | 0.05 | - |  |
| 0041 | Nereocystis luetkeana | 6 | - | - | - | - | - | - | 0.03 | 0.50 | - | 0.03 | - | - | - | - | - | - |
| 0096 | Opuntiella californica | 6 | - ${ }^{-}$ | - | $5 \cdot$ | - | - | $5 \cdot$ |  |  | 5 |  | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | 0.53 | 0.05 | 0.05 | 0.55 | 1.55 | 0.50 | 1.03 | 0.55 | 0.50 | 0.05 | 0.05 | 0.10 | 1.00 | 1.03 | 1.05 | 1.00 |
| 0203 | Pikea robusta | 6 | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | Survey Date: Sampling Code | 22-Jul-88 | 27-Sep-88 | 1-Mar-89 | 23-May-89 | 24-Aug-89 | 30-0ct-89 | 22-Mar-90 | 15-Jun-90 | 27-Jul-90 | 18-Oct-90 | 13-Aug-91 | 23-Oct-91 | 8-Apr-92 | 25-Jun-92 | 26-Aug-92 | 4-Jan-93 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium pacificum | 6 | - | - |  | - |  | 0.03 | - |  | - |  | - | - | - | - |  | - |
| 0118 | Polyneura latissima | 6 | - | - | 0.05 | 0.05 | - | - | 0.03 | 0.03 | - | - | - | - | - | 0.03 | - | 0.03 |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - | - |  | - | . | - | - | - | - | - |  |
| 0220 | Prionitis australis | 6 | - | 0.03 | - | - | 0.53 | - | 0.03 |  | - |  | 0.03 | - | 0.05 | 0.10 | 0.05 | 2.50 |
| 0106 | Prionitis spp. | 6 | 8.00 | 9.50 | 12.00 | 9.00 | 8.00 | 11.00 | 13.50 | 13.50 | 17.50 | 13.50 | 12.50 | 12.00 | 11.50 | 12.50 | 9.50 | 14.00 |
| 0221 | Ptercladiella caloglossoides | 6 | 0.05 | 0.03 | - | 0.03 | 0.05 | 0.05 | 0.03 | 0.03 | - | 0.05 | 0.05 | 0.05 | - | - | - |  |
| 0192 | Pterosiphonia dendroidea | 6 | - | 0.03 | - | - | - | - - | - | - | - | - | . | - | - | - |  |  |
| 0042 | Pterygophora californica | 6 | - | 0.08 | - | 0.05 | - | 0.03 | - | - | 0.53 | - | - | - | - | - | - |  |
| 0187 | Pugetia firma | 6 | 0.03 | 0.03 | 0.05 | 0.03 | 0.08 | - | - | - | - | 0.05 | 0.03 | - | 0.03 | 0.03 | - |  |
| 0219 | Rhodophyta (iuv. blades) | 6 | - | - | - | - | - | - |  | - | - | - | - | - | - | - | $\stackrel{-}{-}$ |  |
| 0159 | Rhodymenia spp. | 6 | 1.05 | 6.00 | 5.50 | 2.50 | 1.05 | 1.03 | 4.03 | 5.50 | 1.55 | 4.53 | 7.50 | 5.00 | 5.03 | 6.50 | 5.00 | 7.00 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | 0.03 | - | 0.08 | 0.03 | 0.03 | 0.50 | - | 0.08 | - | 0.03 | - | - | 0.55 | 0.03 | 0.03 | 0.55 |
| 0155 | Scinaia confusa | 6 | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0110 | Smithora naiadum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. | 6 | - | - | 0.03 | 0.05 | - | 0.05 | 0.03 | - | - | 0.05 | - | 0.03 | 0.05 | - | 0.03 |  |
| 0988 | Weeksia spp. | 6 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0057 | coralline crust | 6 | 44.00 | 48.00 | 44.50 | 54.00 | 33.00 | 53.00 | 32.50 | 48.00 | 49.50 | 50.00 | 51.00 | 54.00 | 58.00 | 28.50 | 38.00 | 49.00 |
| 1300 | filamentous red algae complex | 6 |  |  |  | 5 | 5 | 0 |  | - | - | - | - | - |  | - |  |  |
| 0059 | non-coralline crust | 6 | 0.53 | 2.05 | 7.00 | 4.50 | 1.53 | 6.00 | 0.53 | 4.03 | 3.05 | 4.50 | 2.03 | 8.00 | 6.50 | 1.03 | 0.55 | 4.50 |

## Subtidal Line Contact - Survey Algal and Substrate Abundaı

## Sampling code: 6 = Coverage Based on \# of Contact Points

|  |  | 86 | 87 | 89 | 91 | 92 | 93 | 94 | 95 | 96 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species | ؛ | 7-Jul-93 | 24-Sep-93 | 21-Jan-94 | 18-Jul-94 | 21-0ct-94 | 27-Apr-95 | 18-Jul-95 | 29-Nov-95 | 9-Apr-96 | 14-Oct-97 | 15-Apr-98 | 27-May-98 | 1-Sep-98 | 8-Oct-98 | 8-Mar-99 | 26-May-99 | Code


| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | 0.05 | - | 0.03 | 0.05 | - ${ }^{-}$ | 0.50 | 0.03 | - | 0.05 | 0.05 | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 0.03 | - | - | - | 0.05 | - | 0.03 | 0.05 | 2.00 | 0.50 | 0.03 | 0.50 | 0.05 | 0.05 | 1.53 | - | 0.03 |
| 0047 | Amplisiphonia pacifica | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. | - |  |  | - | - | - |  | - | - | - | - | - |  | - |  | - |  |
| 0049 | Calliarthron/Bossieill spp.complex | 66.00 | 61.00 | 49.50 | 61.00 | 52.00 | 41.50 | 55.50 | 49.50 | 46.50 | 56.50 | 35.00 | 58.50 | 54.50 | 50.00 | 40.00 | 44.00 | 43.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0064 | Callophyllis flabellulata | - | 0.03 | - | 0.03 | 0.03 | 0.05 | - | 0.03 | - | - | - | - |  | 0.03 | 0.03 | - |  |
| 0112 | Callophyllis spp. | 3.03 | 1.03 | 1.05 | 1.55 | 0.05 | 1.50 | 2.50 | 0.05 | 0.55 | 0.03 | 0.05 | 1.00 | 0.53 | 0.05 | 0.53 | 0.03 | 0.58 |
| 0239 | Chlorophyta (filamentous) | - | - | - |  | - | - |  |  | - | - | - |  |  |  |  | - |  |
| 0125 | Chondracanthus corymbiferus | 32.00 | 34.00 | 18.50 | 34.00 | 27.00 | 14.00 | 26.00 | 20.00 | 23.50 | 18.50 | 9.50 | 16.50 | 22.00 | 19.50 | 18.50 | 22.00 | 15.00 |
| 1302 | Chrysophyta | - | - | - | - | - | 8.00 |  |  | 2.03 | - | 12.50 | - |  | 0.03 | - | - |  |
| 0025 | Coilodesme californica | - | - | - |  | - |  |  |  |  | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis | - | 0.08 | 0.03 | 0.05 | 0.03 | 0.05 |  | 0.03 | 0.03 | 0.05 | - | - | 0.10 | 0.08 | 1.03 | - | - |
| 0052 | Cryptopleura ruprechtiana | 51.00 | 42.50 | 22.50 | 41.50 | 36.50 | 12.50 | 31.00 | 27.50 | 17.00 | 20.50 | 1.03 | 15.50 | 18.50 | 14.50 | 13.00 | 23.00 | 18.50 |
| 0115 | Cryptopleura violacea | 0.53 | 2.00 | - |  | - | 0.03 | 0.53 | 0.03 | - | - | - | - | 1.50 | 1.53 | 0.05 | - |  |
| 0036 | Cystoseira osmundacea |  | - | - | - | - | - | . | - | - | 0.50 | - | - | - | - | 0.03 | - |  |
| 1189 | Delesseria decipiens | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0235 | Delesseriaceae (juv.) | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1830 | Desmarestia ligulata | 0.05 | 0.03 | - | 21.50 | 0.53 | - | 45.50 | 3.50 | 0.50 | - | - | 13.50 | 24.50 | 10.50 | 0.03 | 6.50 | 3.50 |
| 0198 | Desmarestia tabacoides |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0030 | Dictyoneurum californicum | 0.05 | 0.03 | 0.03 | - | - | 0.03 | - | - | 0.05 | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0238 | Ectocarpales | - | - | - |  | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0031 | Egregia menziesii | - | - | - | 0.05 | 0.03 | - | 0.03 | - | - | - | - | - | - | 0.05 | 0.03 | - | - |
| 0071 | Erythrophylum delesserioides | 1.05 | 0.08 | - | 1.03 | 0.53 | 0.03 | 0.08 | 0.03 | 0.05 | 0.03 | 0.53 | - | 0.50 | 0.03 | - | - | - |
| 1304 | Farlowia/Pikea spp.-complex | 4.53 | 1.05 | 0.58 | 0.55 | 1.03 | 0.55 | 3.00 | 1.03 | 6.03 | 0.08 | 0.08 | 1.03 | 0.58 | 1.05 | 0.08 | 0.53 | 0.53 |
| 0193 | Fauchea laciniata | - | - | - |  | - | - | - | - | - |  | - |  |  | - | - | - | - |
| 0072 | Gastroclonium subarticulatum | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0073 | Gelidium coulteri | - | - | - |  | - | - | - | - | - |  | - | - | - | - | - | - | - |
| 0075 | Gelidium robustum | 0.03 | - | 0.08 | 0.08 | 0.03 | 0.55 | 0.05 | 0.03 . | 0.08 | 0.50 | 0.10 | - | - | 0.03 | 0.08 | 0.50 | 0.53 |
| 0206 | Gelidium spp. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0149 | Halicystis ovalis (=Derbesia marina) | - | - | - | - | - | 0.03 | 0.03 | - | 0.08 | - | 0.05 | 0.03 | - | - | - | - | - |
| 0152 | Halymenia/Schizymenia spp.complex | 0.05 | 0.05 | 0.03 | 1.03 | 0.53 | 1.53 | 1.53 | 0.08 | 4.50 | - | 2.53 | 5.50 | - | - | 0.03 | 0.03 | - |
| 0212 | Hymenena spp. | - | - | 0.03 |  | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0035 | Laminaria setchellii | 0.10 | 0.05 | 0.05 | 1.55 | 0.08 | 1.03 | 0.58 | 0.10 | 0.08 | 4.55 | 1.05 | 0.10 | 3.05 | 3.00 | 4.00 | 0.08 | 1.08 |
| 0233 | Laminariales | - | - | - | - | - |  | 0.03 | - | 0.05 | - | - | 0.10 | 0.03 | - | - | 0.10 | 0.05 |
| 1640 | Macrocystis pyrifera | $\bigcirc$ | - | - | $\bigcirc$ | - |  |  | - | - | - | - | - | - | 0.03 | 1.00 | 0.03 | 0.03 |
| 0230 | Mazzaella rosea | 0.03 | 0.08 | - | 0.03 | 0.08 | 0.03 | 0.03 | 0.08 | 0.10 | - | - | 1.03 | - | 0.50 | 0.03 | - | - |
| 3383 | Mazzaella splendens | 6.00 | 4.00 | 0.55 | 9.00 | 4.50 | 0.03 | 2.05 | 3.00 | 3.50 | 1.00 | 0.50 | 1.00 | 3.03 | 1.53 | 1.00 | 0.53 | 1.03 |
| 0095 | Microcladia coulteri | 0.08 | 6.50 | 0.10 | 2.55 | 0.58 | 0.08 . | 1.05 | 0.05 | 1.05 | 0.03 | 0.03 | 0.58 | 0.10 | 0.05 | 2.00 | 6.50 | 0.08 |
| 0153 | Neoptilota spp. | - | 0.08 | 0.03 | 0.05 | 1.00 | 0.53 | 0.03 | 0.05 | 0.53 | 0.08 | 0.05 | 0.58 | 0.05 | 0.05 | 0.03 | 1.50 | 0.58 |
| 0041 | Nereocystis luetkeana | - | - | - | 0.03 | - |  | 0.08 | 0.50 | 0.55 | 0.58 | - | 0.58 | 3.50 | 0.58 | - | 0.10 | 2.03 |
| 0096 | Opuntiella califorrica |  |  | - |  |  |  |  |  | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. | 0.58 | 1.50 | 0.05 | - | 0.03 | 0.03 | 0.50 | 0.50 | 0.50 | 0.03 | - | - | - | 0.05 | 0.03 | 1.03 | 0.05 |
| 0203 | Pikea robusta | - | - | - | - | - | - | - | 0.55 | - | - | - | - | - | - | - | - |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | § | 7-Jul-93 | 24-Sep-93 | 21-Jan-94 | 18-Jul-94 | 21-0ct-94 | 27-Apr-95 | 18-Jul-95 | 29-Nov-95 | 9-Apr-96 | 14-Oct-97 | 15-Apr-98 | 27-May-98 | 1-Sep-98 | 8-Oct-98 | 8-Mar-99 | 26-May-99 | 19-Aug-99 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium paciificum |  | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | 0.50 | - | - | - | - | 0.08 | - | 0.03 | - | 0.03 | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | 0.53 | 0.05 | - | - | 1.50 | 0.03 | 0.03 | 0.50 | - | 0.03 | - | - | - | 0.03 | 0.03 | 1.00 |
| 0106 | Prionitis spp. |  | 12.00 | 10.00 | 12.50 | 12.50 | 8.50 | 6.50 | 5.50 | 8.00 | 6.50 | 6.00 | 6.50 | 8.00 | 8.00 | 11.00 | 6.50 | 5.50 | 5.50 |
| 0221 | Ptercladiella caloglossoides |  | - | 0.05 | - | 0.03 | - | - | - | - | - | - | - |  |  |  |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  | 0.50 |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | 0.03 | - | - | - | - | 2.05 | 4.03 | 3.50 | 3.03 | 0.10 | 1.50 |
| 0187 | Pugetia firma |  | - | 0.03 | - | - | - | 0.03 | 0.03 | $\checkmark$ | 0.03 | - | - |  | - | - |  | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | $\cdots$ | - | $\cdots$ | $\cdots$ | 7. | ${ }^{-}$ |  |
| 0159 | Rhodymenia spp. |  | 1.53 | 5.50 | 2.50 | 3.03 | 2.50 | 3.00 | 2.03 | 4.50 | 11.50 | 1.50 | 8.00 | 3.50 | 6.00 | 4.00 | 7.00 | 5.00 | 0.10 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 | - | 0.03 | 0.08 | - | 0.03 | 0.08 | 0.03 | 0.53 | 0.03 | 0.03 |  | 0.03 | - | 0.03 | . |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | 0.55 | 0.05 | 0.03 |  | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | $\cdots$ | - | - | - | - | - | $\bigcirc$ | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.05 | - | 0.08 | 0.08 | 0.08 | 0.08 | 0.03 | - |  |
| 0988 | Weeksia spp. |  |  |  |  |  | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ |  |
| 0057 | coralline crust |  | 27.50 | 55.50 | 36.00 | 40.00 | 28.00 | 44.00 | 25.00 | 27.00 | 45.50 | 29.00 | 43.50 | 26.00 | 33.50 | 45.00 | 50.00 | 26.50 | 31.50 |
| 1300 | filamentous red algae complex |  |  |  |  |  |  | 03 |  |  |  | 153 | 150 |  | 108 | 153 | 600 | 105 |  |
| 0059 | non-coralline crust |  | 2.55 | 1.03 | 1.00 | 4.00 | 2.03 | 2.03 | 2.03 | 4.50 | 1.03 | 1.53 | 1.50 | 0.58 | 1.08 | 1.53 | 6.00 | 1.05 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abundal

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | $\begin{array}{r} 107 \\ \text { 18-Oct-99 } \end{array}$ | $\begin{array}{r} 108 \\ \text { 22-Mav-00 } \end{array}$ |  | $\begin{array}{r} 110 \\ \text { 13-Sep-00 } \end{array}$ | $\begin{array}{r} 111 \\ \text { 6-Dec-00 } \end{array}$ | $\begin{array}{r} 112 \\ \text { 12-Arr-01 } \end{array}$ | $\begin{array}{r} 113 \\ \text { 27-Jun-01 } \end{array}$ | $\begin{array}{r} 114 \\ \text { 4-Sep-01 } \end{array}$ | $\begin{array}{r} 115 \\ \text { 25-Jan-02 } \end{array}$ | $\begin{array}{r} 116 \\ \text { 20-Mar-02 } \end{array}$ | $\begin{array}{r} 117 \\ \text { 14-Jun-02 } \end{array}$ |  | $\begin{array}{r} 119 \\ \text { 19-Nov-02 } \end{array}$ | $\begin{array}{r} 120 \\ \text { 1-Apr-03 } \end{array}$ | $\begin{array}{r} 121 \\ \text { 27-Jun-03 } \end{array}$ | $\begin{array}{r} 122 \\ \text { 22-Aug-03 } \end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) | Species | ¢ | 18-Oct-99 | 22-May-00 | 7-Jul-00 | 13-Sep-00 | 6-Dec-00 | 12-Apr-01 | 27-Jun-01 | 4-Sep-01 | 25-Jan-02 | 20-Mar-02 | 14-Jun-02 | 15-Aug-02 | 19-Nov-02 | 1-Apr-03 | 27-Jun-03 | 22-Aug-03 | 6-Jan-04 |
| 0126 | Ahnfeltiopsis leptophylla |  | - | = | - | - |  | - | - |  | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | 1.00 | 0.50 | 0.53 | 0.03 | 0.50 | 0.08 | 0.05 | 1.00 | 0.50 | 0.03 | - | 0.50 | - |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - |  |  |  |  |  | - | - | - | - | - | 21.50 | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | 0.50 | - | - | - |  |  | - |  |  |  | - | - |  | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 45.00 | 41.50 | 48.50 | 46.50 | 45.00 | 28.50 | 51.00 | 26.00 | 45.50 | 31.00 | 43.00 | 45.00 | 45.50 | 44.50 | 5.00 | 31.00 | 49.00 |
| 0185 | Callithamnion spp.PPeonosporium spp. |  | - |  | - | - |  |  |  |  |  |  | - | - |  |  | - |  |  |
| 0064 | Callophyllis flabelluata |  |  | 1.00 |  |  | - | 0.03 | 0.03 |  | 0.05 | 0.05 | - | 0.05 | 0.03 | - | - | - |  |
| 0112 | Callophyllis spp. |  | 0.08 | 0.05 | 0.50 | 0.05 | - | - | - | - | - | 0.10 | - | 0.05 | - | 0.08 | 0.53 | 0.58 | 0.03 |
| 0239 | Chlorophyta (filamentous) |  | - | - |  | - | - | - | - | - | - | - | - | - | - |  |  | 0.03 |  |
| 0125 | Chondracanthus corymbiferus |  | 14.00 | 10.00 | 9.00 | 7.00 | 5.00 | 7.50 | 10.00 | 8.00 | 6.00 | 7.50 | 16.00 | 9.00 | 7.50 | 8.50 | 9.00 | 8.50 | 8.00 |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |  |  |  |  |
| 0025 | Coilodesme californica |  | - | - |  | - | - | - | - | - | - | - |  | 0.03 | - | - | - | - | 0.0 |
| 0055 | Corallina chilensis |  | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.03 | 0.03 | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | 17.50 | 11.50 | 14.00 | 9.50 | 5.53 | 5.03 | 8.50 | 7.50 | 8.00 | 7.50 | 13.00 | 14.00 | 6.00 | 7.00 | 9.00 | 6.00 | 3.50 |
| 0115 | Cryptopleura violacea |  | - |  |  |  |  | - |  | 1.00 | - | - | - | 0.50 | - | 0.03 | - | - |  |
| 0036 | Cystoseira osmundacea |  | 0.08 | 0.55 | 0.50 | 0.03 | 0.08 | 0.55 | 0.53 | 2.50 | 0.58 | 0.05 | 1.03 | 2.00 | 0.05 | 1.53 | 1.05 | 2.03 |  |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | 1.00 | . | - | - | . | - | - | - | - | , |  |  |  |
| 1830 | Desmarestia ligulata |  | - | 3.50 | 6.50 | 2.03 | - | - | 1.03 | 1.03 | - | - | 0.05 | - | . | 0.50 | - | 0.50 |  |
| 0198 | Desmarestia tabacoides |  | - | - | . | - | - | - |  |  | . | - | , | . | . | , | 0.50 | , |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | , | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | . | - | . | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophylum delesserioides |  | - | - | - | - | - | - | - | - | - | 0.05 | ${ }^{-}$ | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.05 | 1:08 | 0.05 | 0.55 | 0.05 | 2.53 | 0.10 | 5.00 | 2.05 | 2.00 | 3.05 | 3.53 | 0.53 | 0.10 | 1.53 | 1.50 | 0.03 |
| 0193 | Fauchea laciniata |  |  |  |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - |  | - | - | - | - | - | - | - | - | . | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | $\cdots$ |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 0.10 | 0.08 | 1.50 | 0.58 | 0.55 | 1.55 | 0.53 | 2.03 | 1.03 | 1.53 | 0.10 | 1.05 | - | 0.05 | 2.53 | 3.53 | 3.00 |
| 0206 | Gelidium spp. |  | - |  | - |  | - | 0.50 | - | - | - | - | - | - | - | - | - |  |  |
| 1224 | Gloiosiphonia californica |  | - | - | . | - | - | - | - | - | - | - | - | - | - | . | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | 2.53 | - | 0.03 | - | - | - | - | - | 0.50 | 0.53 | - | 0.03 | 1.53 | - | - |  |
| 0212 | Hymenena spp. |  | - | - | $\bigcirc$ | - | $5{ }^{-}$ | - | 5. | ${ }_{7}{ }^{-}$ | ${ }_{7}{ }^{\circ}$ |  |  | $\cdots$ | - | - | 0.03 | - |  |
| 0035 | Laminaria setchellii |  | 4.00 | 3.50 | 3.00 | 11.00 | 5.53 | 8.50 | 5.50 | 7.50 | 7.50 | 4.50 | 7.00 | 9.00 | 4.00 | 5.50 | 4.50 | 3.50 | 5.00 |
| 0233 | Laminariales |  |  | 4.53 | 0.05 | - | - | - | - | 0.10 | - | - | 0.03 | 0.05 | 0.03 | 0.05 | - | - |  |
| 1640 | Macrocystis pyrifera |  | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - |  |
| 3383 | Mazzaella splendens |  | 1.50 | $\stackrel{-}{-}$ | - | $\bigcirc$ | $\bigcirc$ | - | 0.53 | $\stackrel{-}{-}$ | - | - | 0.03 | - | $\bigcirc$ | 0.03 | - | - |  |
| 0095 | Microcladia coulteri |  | 1.03 | 1.05 | 0.10 | 0.10 | 0.05 | 0.08 | 0.05 | 0.08 | 0.10 | 2.53 | 2.53 | 0.55 | 0.03 | 0.10 | 2.00 | 0.08 | 0.03 |
| 0153 | Neoptilota spp. |  | 1.05 | 1.55 | 3.00 | 1.03 | - | 2.53 | 2.03 | 0.10 | 1.05 | 2.55 | 0.55 | 1.05 | 2.03 | 0.53 | 0.05 | 0.10 | 0.05 |
| 0041 | Nereocystis luetkeana |  | 3.53 | 1.05 | 2.50 | 1.55 | 1.05 | - | 0.08 | 0.08 | 0.03 | - | 1.05 | 0.10 | 0.05 | 0.03 | 0.03 | 1.03 | 0.05 |
| 0096 | Opuntiella californica |  |  |  |  | - | - | - | - | - | - | 0.03 | - | - |  |  | - | - |  |
| 0184 | Osmundea spp. |  | 0.05 | 1.03 | 0.50 | 0.55 | 0.50 | - | 0.03 | 0.55 | - | - | 0.05 | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 |  |
| 0203 | Pikea robusta |  |  |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |


| Species Code (spcode) | Species | : | 18-Oct-99 | 22-May-00 | 7-Jul-00 | 13-Sep-00 | 6-Dec-00 | 12-Apr-01 | 27-Jun-01 | 4-Sep-01 | 25-Jan-02 | 20-Mar-02 | 14-Jun-02 | 15-Aug-02 | 19-Nov-02 | 1-Apr-03 | 27-Jun-03 | 22-Aug-03 | 6-Jan-04 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium pacificum |  |  | - |  |  |  |  |  |  | - |  |  | - | - | - |  | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | 5.00 | 0.50 | 0.05 | 3.50 | - | 5.00 | - | 4.00 | - | 6.00 | 0.05 | 1.03 | 0.05 | 3.03 | 0.53 | 2.05 |  |
| 0106 | Prionitis spp. |  | 5.53 | 6.00 | 8.03 | 4.00 | 9.00 | - | 4.00 | 2.03 | 10.50 | 4.50 | 8.50 | 8.00 | 5.03 | 8.50 | 6.00 | 4.00 | 4.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | 0.03 | 0.03 | - |  |  | - | - | 0.05 | - |  |
| 0042 | Pterygophora californica |  | 0.05 | 2.05 | 0.08 | 0.08 | 0.10 | 0.10 | 0.10 | 2.03 | 0.08 | 0.03 | 0.05 | 0.05 | - | - | 1.50 | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - |  |  | 0.03 | 0.03 | - | 0.03 | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - |  |  | - |  | - | - |  |
| 0159 | Rhodymenia spp. |  | 4.53 | 8.50 | 4.03 | 2.53 | 2.50 | 4.50 | 4.00 | 6.00 | 4.50 | 6.50 | 7.50 | 5.50 | 2.53 | 8.00 | 4.00 | 5.00 | 5.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | . | - | - | - |  |  | 0.03 |  | 0.03 |  | - |  |
| 0155 | Scinaia confusa |  | - | 0.05 | - | - | - | - | 0.03 | 0.03 | - | 0.03 | 0.05 | 0.03 | - | - |  | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | 0.05 | - |  |
| 0014 | Ulva spp. |  | 0.05 | - | - | 0.08 | - | 0.03 | 0.03 | 0.10 | - | 0.03 | 0.08 | 0.10 | 0.03 | 0.08 | - | - |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | ${ }^{-}$ |  |
| 0057 | coralline crust |  | 32.50 | 52.50 | 26.50 | 43.00 | 31.00 | 67.50 | 21.00 | 72.00 | 58.50 | 76.00 | 33.50 | 41.00 | 17.00 | 47.00 | 74.50 | 75.00 | 19.00 |
| 1300 | filamentous red algae complex |  |  |  |  |  |  |  |  |  | - | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 1.50 | 2.00 | 3.03 | 4.50 | 5.03 | 6.50 | 3.03 | 0.10 | 6.50 | 1.53 | 5.00 | 3.00 | 1.53 | 5.50 | 0.53 | 3.00 | 1.53 |

## Subtidal Line Contact - Survey Algal and Substrate Abundal

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | ! | $\begin{array}{r} 124 \\ \text { 17-Mar-04 } \end{array}$ | $\begin{array}{r} 125 \\ \text { 18-May-04 } \end{array}$ | $\begin{array}{r} 126 \\ \text { 10-Sep-04 } \end{array}$ | $\begin{array}{r} 127 \\ 7-\mathrm{Feb}-05 \end{array}$ | $\begin{array}{r} 128 \\ 6-\text { Apr-05 } \end{array}$ | $\begin{array}{r} 129 \\ \text { 16-Jun-05 } \end{array}$ | $\begin{array}{r} 130 \\ 8-A u g-05 \end{array}$ | $\begin{array}{r} 132 \\ 20-\mathrm{Mar}-06 \end{array}$ | $\begin{array}{r} 133 \\ \text { 12-Jun-06 } \end{array}$ | $\begin{array}{r} 134 \\ \text { 28-Aug-06 } \end{array}$ | $\begin{array}{r} 135 \\ \text { 20-Nov-06 } \end{array}$ | $\begin{array}{r} 136 \\ \text { 6-Mar-07 } \end{array}$ | $\begin{array}{r} 137 \\ \text { 24-May-07 } \end{array}$ | $\begin{array}{r} 138 \\ 27-\text { Aug- } 07 \end{array}$ | $\begin{array}{r} 139 \\ 3-\operatorname{Dec}-07 \end{array}$ | $\begin{array}{r} 140 \\ \text { 1-Apr-08 } \end{array}$ | $\begin{array}{r} 141 \\ \text { 27-May-08 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0126 | Ahnfeltiopssis leptophylla |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | 0.03 | 0.05 | 0.03 | 0.08 | 0.03 | - | 0.05 | 0.03 | 0.03 | - | - | - | - | 0.53 |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - |  | - | - | - | - | - | - - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 54.50 | 56.50 | 55.00 | 50.00 | 53.00 | 51.00 | 48.50 | 37.50 | 43.00 | 41.00 | 42.00 | 42.50 | 54.50 | 47.50 | 47.00 | 44.00 | 58.00 |
| 0185 | Callithamnion spp.IPleonosporium spp. |  |  |  |  |  |  |  |  |  |  |  |  | - | - | - | 0.03 | - |  |
| 0064 | Callophyllis flabelluata |  | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | - | - | 0.03 | 0.03 | 0.05 | - | - | - | - | - |
| 0112 | Callophyllis spp. |  | 0.03 | 0.53 | - | 0.05 | 0.05 | 0.55 | 1.03 | 0.05 | 1.05 | 0.03 | - | - | 0.03 | 0.03 | 0.05 | 0.55 | 0.03 |
| 0239 | Chlorophyta (filamentous) |  |  |  | - | - |  | - |  | - - | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 7.00 | 10.00 | 11.00 | 5.03 | 5.03 | 9.50 | 10.00 | 5.50 | 10.00 | 9.00 | 7.50 | 6.53 | 9.00 | 9.50 | 9.50 | 10.00 | 8.00 |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | 0.50 | - | - | . | - | 1.50 | - |  | 4.50 |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0055 | Corallina chilensis |  | - | - | - | 0.03 | - | 0.03 | - | - | 0.03 | - | 0.03 | - | - | - | - | - | 0.03 |
| 0052 | Cryptopleura ruprechtiana |  | 2.55 | 7.53 | 6.00 | 4.50 | 4.03 | 11.00 | 12.50 | 3.50 | 9.50 | 5.53 | 6.50 | 2.53 | 3.53 | 6.00 | 3.00 | 4.53 | 5.50 |
| 0115 | Cryptopleura violacea |  | - | - | - |  | - |  |  |  |  |  |  | - |  |  |  |  |  |
| 0036 | Cystoseira osmundacea |  | 0.53 | 1.05 | 1.00 | 1.05 | 0.10 | 3.05 | 1.03 | 2.53 | 3.50 | 4.00 | 2.50 | 4.00 | 2.03 | 4.00 | 5.03 | 3.03 | 2.53 |
| 1189 | Delesseria decipiens |  | - | 0.03 | - | - | - | - | - | 0.03 |  |  | - | - | . | - | - | 0.03 |  |
| 0235 | Delesseriaceae (juv.) |  | - |  | - | - | - | - |  |  |  | - | - | - | - | . - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | 1.53 | 1.00 | - | - | 12.00 | 13.00 | 0.05 | 1.00 | 1.50 | - | - | 0.05 | 10.50 | - | 0.05 | 5.50 |
| 0198 | Desmarestia tabacoides |  | - |  | - |  | - |  |  |  | - | - |  | - | - | - | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - |  |  | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0238 | Ectocarpales |  | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |  |
| 0071 | Erythrophyllum delesserioides |  | - |  | - |  | - |  |  |  | - | - | - | - | - | - |  | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.08 | 0.55 | 0.08 | 0.05 | 0.10 | 0.08 | 0.05 | 0.05 | 0.08 | 0.08 | 0.10 | 0.10 | 0.55 | 0.10 | 0.03 | 0.08 | 0.58 |
| 0193 | Fauchea laciniata |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 1.53 | 0.03 | - | 1.05 | 0.03 | 1.55 | 1.03 | 1.05 | 1.05 | 0.03 | 1.53 | 3.00 | 1.50 | 0.53 | 1.58 | 2.03 | 1.00 |
| 0206 | Gelidium spp. |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | - | 0.08 | 0.03 | - | 0.05 | 0.03 | - | - | 0.03 | 0.50 | - | - | 1.55 | - |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - | - |
| 0035 | Laminaria setchellii |  | 1.55 | 1.05 | 4.50 | 5.50 | 2.03 | 3.00 | 7.00 | 4.50 | 6.00 | 4.50 | 4.03 | 3.00 | 1.55 | 4.00 | 2.00 | 4.00 | 1.55 |
| 0233 | Laminariales |  | - | - | - | 0.03 | - | 0.05 | 0.05 | 0.03 | 0.03 | - |  | 0.03 |  |  | 0.03 | 0.05 | 0.08 |
| 1640 | Macrocystis pyrifera |  | - | 0.03 | 0.03 | 0.53 | 0.03 | 1.50 | 0.03 | 0.55 | 1.03 | 1.00 | 1.50 | 1.50 | 2.00 | 0.53 | 0.53 | 0.53 | 1.50 |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | - | 2.00 | - | - | . |  |  | - | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | . |  | 0.03 | - | - | - |
| 0095 | Microcladia coulteri |  | 0.08 | 1.58 | 0.05 | 0.05 | 0.05 | 0.08 | 0.10 | 0.10 | 1.55 | - | 0.08 | - | 1.00 | 0.10 | 0.10 | 1.55 | 0.58 |
| 0153 | Neoptilota spp. |  | 0.08 | 0.05 | 0.53 | 0.53 | 0.50 | 6.00 | 1.00 | 0.08 | 0.55 | 0.08 | 0.58 | 0.08 | 2.50 | 0.53 | 0.03 | 1.55 | 0.53 |
| 0041 | Nereocystis luetkeana |  | - | 0.08 | 1.50 | - | - | 1.55 | 1.05 | 0.05 | 1.05 | 1.05 | 0.53 | - | 0.05 | 0.55 | 0.05 | 0.05 | 1.08 |
| 0096 | Opuntiella californica |  | - |  | - |  | - | - |  |  |  |  |  | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | 0.03 | - | 0.03 | 0.50 | - | 0.03 | 0.05 | 0.05 | - | 0.03 | - | - | - | - | - | - |
| 0203 | Pikea robusta |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Species Code (spcode) | Species | ¢ | 17-Mar-04 | 18-May-04 | 10-Sep-04 | 7-Feb-05 | 6-Apr-05 | 16-Jun-05 | 8-Aug-05 | 20-Mar-06 | 12-Jun-06 | 28-Aug-06 | 20-Nov-06 | 6-Mar-07 | 24-May-07 | 27-Aug-07 | 3-Dec-07 | 1-Apr-08 | 27-May-08 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - |  |  |  | - | - | - |  |  |  |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | 0.08 | 0.08 | - | 0.03 | - | - | - | - |  |  |  |  |
| 0220 | Prionitis australis |  | 0.08 | 0.08 | - | 0.05 | 0.10 | 1.08 | 0.58 | 1.05 | 1.55 | 3.00 | 1.55 | 3.00 | 2.50 | 2.50 | 0.05 | 3.55 |  |
| 0106 | Prionitis spp. |  | 5.03 | 8.00 | 2.03 | 4.00 | 0.08 | 2.00 | 4.50 | 1.50 | 3.03 | 1.00 | 1.00 | 2.00 | 0.05 |  | 2.00 | 1.00 | 2.00 |
| 0221 | Ptercladiella caloglossoides |  |  | - | - | - | - | . | - | - | - | - | - | - |  |  |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | 0.05 | 0.03 | - | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | 0.03 | - | - | - | - | 0.05 | 0.50 | 0.08 | 0.03 | 0.05 | 1.05 | - | 0.05 | 0.08 | 0.03 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | 0.05 | 0.50 |  | 0.05 | 0.03 |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - |  | - | $\bigcirc$ | $\stackrel{-}{-}$ | - | - | - | - | - |  |  |  |  |  |
| 0159 | Rhodymenia spp. |  | 3.50 | 6.50 | 6.00 | 2.50 | 8.50 | 9.00 | 7.00 | 6.50 | 8.50 | 8.50 | 8.50 | 6.00 | 7.00 | 10.50 | 7.00 | 7.50 | 7.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - |  | - |  | - | 0.05 | - |  | - | - | - | - | - |  | - | - |  |
| 0155 | Scinaia confusa |  | - | 0.03 | 0.03 | - | - | - | 0.03 | 0.03 | 0.03 | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0014 | Ulva spp. |  | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.08 | 0.05 | 0.03 | 0.08 | - | 0.03 | - | 0.03 | 0.05 | 0.03 | 0.05 |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - |  |  |
| 0057 | coralline crust |  | 25.00 | 21.00 | 11.00 | 31.00 | 11.00 | 25.00 | 26.00 | 37.50 | 33.00 | 37.00 | 35.00 | 46.00 | 17.00 | 34.00 | 49.00 | 36.50 | 16.00 |
| 1300 | filamentous red algae complex |  | - |  | - | - | - | 0.03 |  | 0.03 | - | - | - | - | - | - | - | 0.55 |  |
| 0059 | non-coralline crust |  | 4.50 | 0.58 | 2.05 | 5.50 | 3.53 | 3.00 | 2.50 | 4.53 | 2.50 | 3.03 | 3.50 | 6.00 | 2.03 | 4.00 | 7.00 | 4.50 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | ! | $\begin{array}{r} 142 \\ \text { 9-Sep-08 } \end{array}$ | $\begin{array}{r} 143 \\ \text { 11-Dec-08 } \end{array}$ | $\begin{array}{r} 144 \\ \text { 22-Apr-09 } \end{array}$ | $\begin{array}{r} 145 \\ \text { 25-Jun-09 } \end{array}$ | $\begin{array}{r} 146 \\ \text { 21-Aug-09 } \end{array}$ | $\begin{array}{r} 147 \\ \text { 4-Jan-10 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 16-Apr-10 } \end{array}$ | $\begin{array}{r} 149 \\ \text { 18-May-10 } \end{array}$ | $\begin{array}{r} 150 \\ \text { 13-Aug-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 18-Nov-10 } \end{array}$ | $\begin{array}{r} 152 \\ 22-\mathrm{Feb}-11 \end{array}$ | $\begin{array}{r} 153 \\ \text { 13-Jun-11 } \end{array}$ | $\begin{array}{r} 154 \\ 22-A u g-11 \end{array}$ | $\begin{array}{r} 155 \\ \text { 9-Nov-11 } \end{array}$ | $\begin{array}{r} 156 \\ \text { 8-Mar-12 } \end{array}$ | $\begin{array}{r} 157 \\ \text { 28-Jun-12 } \end{array}$ | $\begin{array}{r} 158 \\ \text { 6-Sep-12 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - |  |  |  |  |  |  | - |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.03 | 0.53 | 0.05 | 0.53 | 0.50 | - | 0.03 | 0.05 | - | - | - | 0.03 | 0.50 | 0.03 |  | - | 0.05 |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |  |  |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - |  | - | : |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 49.50 | 41.50 | 58.50 | 49.00 | 58.00 | 48.00 | 41.00 | 46.50 | 66.00 | 47.50 | 43.50 | 51.50 | 49.50 | 49.00 | 47.50 | 58.00 | 48.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | - | - | - | - | - | - | - | - | - |  |  |  |  |  | 0.03 |  |  |
| 0064 | Callophyllis flabelluata |  | - | 0.08 | 0.03 | - | - | 0.03 | 0.03 | - | - | 0.03 |  | - |  |  | 0.03 | - |  |
| 0112 | Callophyllis spp. |  | - | 0.05 | 0.03 | 0.03 | - | - | 0.03 | - | - |  | 0.03 | - |  | 0.03 | - | - |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | - |  | - |  |  | - | - | - |  | - | - |  | - |  |  |
| 0125 | Chondracanthus corymbiferus |  | 11.00 | 6.50 | 5.50 | 7.00 | 8.50 | 3.00 | 3.50 | 8.50 | 8.50 | 7.00 | 5.00 | 12.50 | 9.50 | 9.00 | 6.00 | 7.00 | 9.50 |
| 1302 | Chrysophyta |  | - | - | - |  |  | - | - | 2.00 | - | - | - | - |  |  |  | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0055 | Corallina chilensis |  | - | 0.03 | - | 0.05 | - | 0.05 | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - |
| 0052 | Cryptopleura ruprechtiana |  | 2.53 | 0.55 | 4.50 | 2.05 | 2.55 | 3.50 | 0.08 | 2.03 | 4.50 | 3.50 | 3.50 | 12.50 | 13.00 | 11.50 | 6.50 | 6.03 | 8.00 |
| 0115 | Cryptopleura violacea |  | - | - | - | - | - |  | . | - | - | - | - | - | - | - | 0.03 |  |  |
| 0036 | Cystoseira osmundacea |  | 3.03 | 4.05 | 1.53 | 5.03 | 5.53 | 4.03 | 1.55 | 2.03 | 3.50 | 1.50 | 3.00 | 6.00 | 6.53 | 6.00 | 3.53 | 4.03 | 5.50 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0235 | Delesseriaceae (juv.) |  |  | - | - | - | - | - | - | - | - | - | - |  | - |  | - | - |  |
| 1830 | Desmarestia ligulata |  | 2.53 | - | - | - | 0.05 | - | - | 2.53 | 15.00 | 3.55 | - | 1.03 | 3.53 | - | - | 0.03 |  |
| 0198 | Desmarestia tabacoides |  | - | - | - | - | - | - | - |  | : |  | - |  |  |  | - |  |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - |  | - |  | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | 4.00 | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | $\cdot$ |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.05 | 0.05 | 0.58 | 0.10 | 0.55 | 0.08 | 0.08 | 0.55 | 0.03 | 0.05 | 0.08 | 0.05 | 0.08 | 0.05 | 0.05 | 0.05 | 0.05 |
| 0193 | Fauchea laciniata |  |  |  | - | - | - | - | - | - | - | - | - |  |  | 0.03 | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0075 | Gelidium robustum |  | 2.00 | 1.55 | 2.00 | 1.03 | 2.50 | 0.55 | 1.53 | 3.03 | 2.03 | 2.03 | 2.00 | 0.05 | 2.03 | 1.53 | 2.03 | 2.00 | 3.00 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | 0.53 | 0.05 | - | - | 2.03 | 3.50 | 0.03 | - | - | 0.08 | 0.03 | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0035 | Laminaria setchellii |  | 3.00 | 2.03 | 1.00 | 2.03 | 2.00 | 0.10 | 0.08 | 0.05 | 0.08 | 1.53 | 0.10 | 2.00 | 2.53 | 1.53 | 2.00 | 0.10 | 4.03 |
| 0233 | Laminariales |  | - | - | 0.03 | 0.03 | - | - | 0.03 | 0.08 | - | 0.03 | - | 0.03 | 0.03 | - | - | - | 0.08 |
| 1640 | Macrocystis pyrifera |  | 2.50 | 7.03 | 2.50 | 2.03 | 5.00 | 2.05 | 1.50 | 2.00 | 0.53 | 1.55 | 0.53 | 0.03 | 2.50 | 5.03 | 2.50 | 6.00 | 6.00 |
| 0230 | Mazzaella rosea |  | - |  | - | - | 0.03 | - | - |  | - | - | - | - | - | - | . | - |  |
| 3383 | Mazzaella splendens |  | - | 0.03 | - | - | - | - | - | 1.00 | - | - | - | - | - | - | - | 0.03 |  |
| 0095 | Microcladia coulteri |  | 0.03 | 0.08 | 0.05 | - | 0.05 | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.10 | 2.05 | 0.05 | 0.08 | 1.53 | 0.03 | 1.05 |
| 0153 | Neoptilota spp. |  | 0.03 | 0.05 | 2.05 | 1.53 | 0.55 | 0.05 | 1.53 | 0.53 | 2.55 | 0.05 | 0.05 | 0.50 | 1.55 | 0.03 | 1.03 | 1.03 | 3.00 |
| 0041 | Nereocystis luetkeana |  | 2.03 | 0.08 | 0.10 | 1.03 | 0.03 | - | - | 0.08 | 1.05 | 0.55 | 0.10 | 1.05 | 1.08 | 0.05 | - | 0.05 | 0.03 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | $\mathfrak{}$ | 9-Sep-08 | 11-Dec-08 | 22-Apr-09 | 25-Jun-09 | 21-Aug-09 | 4-Jan-10 | 16-Apr-10 | 18-May-10 | 13-Aug-10 | 18-Nov-10 | 22-Feb-11 | 13-Jun-11 | 22-Aug-11 | 9-Nov-11 | 8-Mar-12 | 28-Jun-12 | 6-Sep-12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium pacificum |  | - |  |  |  |  | - | - | - | - | - | - | - |  |  |  |  |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0220 | Prionitis australis |  | 0.55 | 1.55 | 0.58 | 3.00 | 1.55 | 0.50 | 1.05 | 0.05 |  | - | 0.05 | 0.03 | 0.53 | 0.53 | 0.08 | - | 2.03 |
| 0106 | Prionitis spp. |  | 2.50 | 0.50 | 0.53 | 0.53 | 3.03 | 1.50 | 1.53 | 1.50 | 2.03 | 3.00 | 5.50 | 3.00 | 0.53 | 3.50 | 3.00 | 2.50 | 0.55 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |  |  |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | - | - | - | - | - | - | - | 0.50 | 0.03 | - |  | - | 0.50 | - |  |
| 0042 | Pterygophora californica |  | 0.53 | 0.05 | 0.05 | 1.05 | 0.08 | 0.05 | 0.08 | 0.05 | 0.10 | 0.10 | 0.55 | 2.50 | 1.53 | 2.03 | 2.05 | 0.10 | 0.08 |
| 0187 | Pugetia firma |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0159 | Rhodymenia spp. |  | 6.00 | 3.50 | 2.50 | 9.50 | 7.00 | 5.00 | 9.50 | 8.50 | 4.00 | 8.00 | 5.00 | 10.50 | 8.00 | 5.00 | 7.00 | 3.53 | 8.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  |  |  |
| 0155 | Scinaia confusa |  | - | - | 0.05 | - | - | - | - | 0.05 | - | - | - | 0.03 | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | - | 0.03 | 0.03 | - | - | - | 0.03 | - | - | - | 0.08 | 0.05 | 0.05 | - | - | 0.05 |
| 0988 | Weeksia spp. |  |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 35.00 | 42.50 | 18.00 | 34.00 | 33.50 | 48.50 | 45.50 | 40.00 | 18.50 | 43.50 | 48.00 | 50.00 | 38.50 | 33.50 | 46.50 | 19.50 | 42.00 |
| 1300 | filamentous red algae complex |  |  |  |  |  | - |  | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 2.03 | 5.50 | 3.50 | 3.50 | 2.53 | 8.00 | 8.50 | 1.50 | 2.53 | 3.00 | 6.00 | 0.55 | 3.03 | 3.50 | 5.00 | 2.03 | 2.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abundal

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | ! | $\begin{array}{r} 159 \\ \text { 12-Nov-12 } \end{array}$ | $\begin{array}{r} 160 \\ \text { 19-Mar-13 } \end{array}$ | $\begin{array}{r} 161 \\ \text { 10-May-13 } \end{array}$ | $\begin{array}{r} 162 \\ 28-A u g-13 \end{array}$ | $\begin{array}{r} 163 \\ \text { 1-Nov-13 } \end{array}$ | $\begin{array}{r} 164 \\ 25-\text { Feb-14 } \end{array}$ | $\begin{array}{r} 165 \\ \text { 17-Jun-14 } \end{array}$ | $\begin{array}{r} 166 \\ \text { 22-Jul-14 } \end{array}$ | $\begin{array}{r} 167 \\ \text { 6-Jan-15 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0126 | Ahnfeltiopsis leptophylla |  | - |  | - |  | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.03 | - | 0.53 | 1.03 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 |
| 0047 | Amplisiphonia pacifica |  |  |  | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - | - | 0.03 | - |  |  |
| 0245 | Bryopsis spp. |  |  |  | - |  | - |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 51.00 | 50.50 | 55.50 | 60.50 | 51.50 | 53.00 | 66.00 | 55.00 | 54.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |  |  |  |  | 0.03 | - | - |  |  |
| 0064 | Callophyllis flabellulata |  | - | 0.08 | - | - | 0.03 | - | 0.03 | - |  |
| 0112 | Callophyllis spp. |  | 0.03 | 0.05 | - | - | - | 0.03 | 0.53 | 0.03 |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 11.00 | 8.50 | 12.50 | 13.00 | 9.00 | 10.00 | 19.00 | 11.00 | 4.00 |
| 1302 | Chrysophyta |  |  |  | - |  | - | - | - |  |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | - | - | 0.03 |  |  | 0.03 | 0.03 | - | - |
| 0052 | Cryptopleura ruprechtiana |  | 10.50 | 6.00 | 10.03 | 14.00 | 14.50 | 9.00 | 14.50 | 15.00 | 3.03 |
| 0115 | Cryptopleura violacea |  | - | - | - | - | 0.03 | - | - | - |  |
| 0036 | Cystoseira osmundacea |  | 3.50 | 5.03 | 2.05 | 1.55 | 0.55 | 1.05 | 4.03 | 5.00 | 1.53 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | 0.03 | 0.05 | 1.03 | 0.03 | - | - | - |  |
| 0198 | Desmarestia tabacoides |  | - | - | - |  | - | - | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | 0.03 | - |  |
| 0071 | Erythrophylum delesserioides |  | ${ }^{-}$ | ${ }^{-}$ | - | $\stackrel{-}{-}$ | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.08 | 0.08 | 0.10 | 0.05 | 0.08 | 0.53 | 0.05 | 3.03 | 0.03 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 2.50 | 1.53 | 2.00 | 2.53 | 3.53 | 4.53 | 7.00 | 3.50 | 4.00 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | 0.05 | 0.03 | - | 0.03 | - | 0.08 | 0.08 |  |
| 0212 | Hymenena spp. |  | - |  |  | - |  | - |  | - |  |
| 0035 | Laminaria setchellii |  | 1.53 | 2.00 | 1.03 | 3.00 | 1.05 | 2.05 | 0.08 | 0.08 | 0.10 |
| 0233 | Laminariales |  |  | 0.05 |  | 0.03 | 0.03 | 0.03 |  | 0.03 |  |
| 1640 | Macrocystis pyrifera |  | 5.00 | 5.53 | 1.00 | 4.00 | 2.00 | 0.03 | 0.50 | 0.50 |  |
| 0230 | Mazzaella rosea |  | - | - |  |  |  | - |  | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | 0.05 | - |  |
| 0095 | Microcladia coulteri |  | 0.58 | 0.08 | 0.08 | 0.10 | 0.08 | 1.03 | 2.53 | 0.05 |  |
| 0153 | Neoptilota spp. |  | 0.55 | 2.50 | 2.03 | 2.00 | 2.53 | 2.03 | 3.03 | 2.53 | 0.58 |
| 0041 | Nereocystis luetkeana |  | 0.05 | - | 0.05 | 0.08 | 0.05 | 0.03 | - | 0.03 |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - |  | $\stackrel{-}{-}$ | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | ! | 12-Nov-12 | 19-Mar-13 | 10-May-13 | 28-Aug-13 | 1-Nov-13 | 25-Feb-14 | 17-Jun-14 | 22-Jul-14 | 6-Jan-15 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0117 | Plocamium paciificum |  | - | - | - | - | - |  |  |  |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - |  | - | - | - | - |  |
| 0220 | Prionitis australis |  | 1.55 | 1.05 | 3.00 | 2.03 | 1.53 | 5.00 | 2.53 | 2.53 | 0.05 |
| 0106 | Prionitis spp. |  | 2.50 | 0.03 | 1.00 | 0.05 | 1.05 | 0.53 | 0.03 | 0.05 | 3.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - |  |  |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | 0.03 | - |  |
| 0042 | Pterygophora californica |  | 2.05 | 1.05 | 1.08 | 1.05 | 1.05 | 0.55 | 1.05 | 0.05 | 0.10 |
| 0187 | Pugetia firma |  | - | - | - | . | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | 0.03 | - | - | - | 0.53 | - | - |  |
| 0159 | Rhodymenia spp. |  | 5.53 | 5.00 | 12.50 | 2.55 | 4.50 | 8.03 | 8.50 | 6.00 | 2.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | 0.03 | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | - | - | 0.03 | - | - | - | - |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 43.50 | 46.50 | 45.00 | 52.50 | 40.00 | 49.00 | 49.00 | 44.00 | 33.50 |
| 1300 | filamentous red algae complex |  | - | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 0.53 | 2.50 | 1.03 | - 1.00 | 2.53 | 4.53 | 2.53 | 1.53 | 5.50 |

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | Survey: | 67 | 68 | 69 | 70 | 71 | 72 | 73. | 74 | 75 | 76 | 79 | 80 | 81 | 82 | 83 | 84 | 86 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey Date: | 22-Jul-88 | 27-Sep-88 | 1-Mar-89 | 23-May-89 | 24-Aug-89 | 30-0ct-89 | 22-Mar-90 | 15-Jun-90 | 27.Jul-90 | 18-Oct-90 | 13-Aug-91 | 23-0ct-91 | 8-Apr-92 | 25-Jun-92 | 26-Aug-92 | 4-Jan-93 | 7.Jul-93 |
|  |  | Sampling Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica | 6 | - |  | - | - | - | - | - | - | - | - |  | 0.50 | - |  |  |  |  |
| 0492 | Porifera (encrusting) | 6 | - | - | - | - | - | 0.50 | - | - | 0.50 | 1.50 | - | 1.50 | - | - |  | 0.50 | - |
| 0318 | Serpulorbis squamigerus | 6 | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - |  | - | - |
| 0404 | Tetracila rubescens | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - |
| 0480 | tunicates, compound/social | 6 | - | - | - | 0.50 | - | 1.50 | - | 1.00 | - | 0.50 | - | - | - | - | - | - | - |

## Subtidal Line Contact - Survey Invertebrate A

| Sampling code: $6=$ Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 87 | 89 | 91 | 92 | 93 | 94 | 95 | 96 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | ${ }^{106}$ | ${ }_{18} 107$ | 108 |
| Species |  | ! | 24-Sep-93 | 21-Jan-94 | 18-Jul-94 | 21-0ct-94 | 27-Apr-95 | 18-Jul-95 | 29-Nov-95 | 9-Apr-96 | 14-Oct-97 | 15-Apr-98 | 27-May-98 | 1-Sep-98 | 8-Oct-98 | 8-Mar-99 | 26-May-99 | 19-Aug-99 | 18-Oct-99 | 22-May-00 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - |  | - | - | - | - | - | - | - | - | - |  |  |  | - | - |  |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | . - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate A |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6= Coverage Based on \# of ( |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 |
| Species |  | ؛ | 7.Jul-00 | 13-Sep-00 | 6-Dec-00 | 12-Apr-01 | 27-Jun-01 | 4-Sep-01 | 25-Jan-02 | 20-Mar-02 | 14-Jun-02 | 15-Aug-02 | 19-Nov-02 | 1-Apr-03 | 27-Jun-03 | 22-Aug-03 | 6-Jan-04 | 17-Mar-04 | 18-May-04 | 10-Sep-04 |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - | - | 0.50 | - | - | - | - | - | - | 0.03 | - | - | - |  | - |  | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracita rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate A



## Subtidal Line Contact - Survey Invertebrate A

| Sampling code: $6=$ Coverage Based on \# of 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 |
| Species |  | : | 21-Aug-09 | 4-Jan-10 | 16-Apr-10 | 18-May-10 | 13-Aug-10 | 18-Nov-10 | 22-Feb-11 | 13-Jun-11 | 22-Aug-11 | 9-Nov-11 | 8-Mar-12 | 28-Jun-12 | 6-Sep-12 | 12-Nov-12 | 19-Mar-13 | 10-May-13 | 28-Aug-13 | 1-Nov-13 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | - | - | - |  | - |  | - |  | - | - |  |
| 0492 | Porifera (encrusting) |  | - | 1.50 | - | - | - | 0.50 | 0.50 | - | - | 0.50 | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - |  | - | - | - | - |  | - | - | - | - | - |  |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | 0.50 | - | - | - | - | - | - | 0.50 |  | - | - | - |  |
| 0480 | tunicates, compound/social |  | 0.50 | - | - | - | - | - | - | - | - | - | - | - |  | 0.50 | - | - | - |  |

Subtidal Line Contact - Survey Invertebrate A
Sampling code: $6=$ Coverage Based on \# of (

| Species |  | 164 |  | 165 | 166 | $\begin{array}{r} 167 \\ \text { 6-Jan-15 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ! | 25-Feb-14 | 17-Jun-14 | 22-Jul-14 |  |
| Code |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| 0492 | Porifera (encrusting) |  |  | - | - |  |
| 0318 | Serpulorbis squamigerus |  |  |  |  |  |
| 0404 | Tetraclita rubescens |  |  | - |  |  |
| 0507 | bryozoa (encrusting) |  |  | - | - |  |
| 0480 | tunicates, compound/social |  |  | - | - | - |


| Species <br> Code (spcode) | Species | Survey: <br> Survey Date: Sampling Code | $\begin{array}{r} 2 \\ 2-\text { Nov-76 } \end{array}$ | $\begin{array}{r} 3 \\ \text { 18-Mar-77 } \end{array}$ | $\begin{array}{r} 4 \\ \text { 22-Jun-77 } \end{array}$ | $\begin{array}{r} 5 \\ 21-\text { Oct- } 77 \end{array}$ | $\begin{array}{r} 7 \\ 8-M a y-78 \end{array}$ | $\begin{array}{r} 8 \\ \text { 26-Jun-78 } \end{array}$ | $\begin{array}{r} 9 \\ \text { 31-Aug-78 } \end{array}$ | $\begin{array}{r} 10 \\ \text { 17-Nov-78 } \end{array}$ | $\begin{array}{r} 12 \\ \text { 16-Feb-79 } \end{array}$ | $\begin{array}{r} 13 \\ \text { 15-May-79 } \end{array}$ | $\begin{array}{r} 15 \\ \text { 12-Sep. } 79 \end{array}$ | $\begin{array}{r} 16 \\ \text { 15-Nov-79 } \end{array}$ | $\begin{array}{r} 17 \\ \text { 29-Jan-80 } \end{array}$ | $\begin{array}{r} 19 \\ \text { 27-May-80 } \end{array}$ | $\begin{array}{r} 21 \\ 5-S e p-80 \end{array}$ | $\begin{array}{r} 25 \\ \text { 13-May-81 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. | 6 | - | - | 0.50 | - |  |  |  | - |  | - |  | - |  |  | - |  |
| 1549 | Acrosorium ciliolatum | 6 | - | - |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | - |  | - | - | - |  | 0.03 | - |  | 0.03 |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | - |  | - |  | - |  |  |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex | 6 | - | - | - | - | - | - |  | - |  |  |  |  |  |  |  |  |
| 0245 | Bryopsis spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |
| 0049 | Calliarthron/Bossiella spp.complex | 6 | 34.50 | 35.50 | 38.50 | 30.00 | 34.50 | 41.00 | 40.00 | 32.50 | 31.00 | 33.00 | 40.00 | 34.00 | 37.00 | 37.50 | 37.00 | 40.00 |
| 0064 | Callophyllis flabelluata | 6 |  | - | - | - | - | - |  |  |  | - | - |  | 0.03 |  | 0.03 |  |
| 0112 | Callophyllis spp. | 6 | - | - | - | 0.50 | 0.53 | 0.53 | 0.05 | 0.53 | - | 0.03 | 0.03 | 0.53 | 0.08 | 1.03 | 0.58 | 1.50 |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - |  | - |  | - |  |  |  |  |  |  |  |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0125 | Chondracanthus corymbiferus | 6 | 3.50 | 4.50 | 8.50 | 5.00 | 3.00 | 6.53 | 4.50 | 4.00 | 3.50 | 4.50 | 4.53 | 3.00 | 4.03 | 6.50 | 8.00 | 8.00 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | - | - |  | - |  | - |  |  |  |  |  |  |  |  |  |  |
| 1302 | Chrysophyta | 6 | - | - |  | - |  | - |  |  |  | - |  |  |  |  |  |  |
| 1143 | Clathromorphum parcum | 6 | - | - | - | - |  | - |  | - |  |  |  |  | - |  |  |  |
| 1137 | Codium fragile subsp. Californicum | 6 | - | - | - | - |  | - |  | - |  | - |  | - | - |  |  |  |
| 0011 | Codium setchellii | 6 | - | - | - | - | - | - |  |  | - |  |  | - | - |  |  |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - |  | - | - | - | - | - | - |  |  |  |
| 0146 | Colpomenia spp. | 6 | - | - | - | - |  | - |  |  | - | - | - | - | - | - |  | - |
| 0055 | Corallina chilensis | 6 | 1.50 | 3.50 | 3.50 | 1.53 | 4.50 | 2.53 | 1.50 | 5.00 | 3.50 | 4.00 | 2.00 | 2.00 | 4.00 | 1.03 | 3.00 | 3.50 |
| 0052 | Cryptopleura ruprechtiana | 6 | - |  | 21.50 | 21.50 | 21.50 | 27.00 | 25.50 | 27.00 | 21.00 | 33.00 | 26.00 | 21.50 | 11.50 | 26.50 | 29.50 | 36.50 |
| 0115 | Cryptopleura violacea | 6 | - | - | 1.00 | 1.00 | 0.03 | 0.50 |  |  | 0.50 | 1.03 | 1.05 | 2.55 | 0.03 | 0.50 | 1.03 | 0.53 |
| 0036 | Cystoseira osmundacea | 6 | 4.03 | 1.50 | 7.50 | 2.03 | 1.08 | 3.00 | 4.50 | 3.53 | 0.10 | 5.00 | 3.05 | 5.00 | 2.03 | 5.00 | 3.03 | 4.00 |
| 0235 | Delesseriaceae (juv.) | 6 | 19.50 | 17.50 |  |  |  |  |  |  |  | 0.03 | - |  | - |  | - |  |
| 1830 | Desmarestia ligulata | 6 | - |  | 5.50 | 0.08 | - | - | - |  | - |  | 0.03 |  | - | - | - |  |
| 0030 | Dictyoneurum californicum | 6 |  | 0.50 |  | - |  | - |  |  |  | 0.03 |  | - | - | 1.00 | - |  |
| 0190 | Dictyota binghamiae | 6 | - |  | - | - | - | - |  |  |  |  |  |  | - |  | - |  |
| 0238 | Ectocarpales | 6 | - |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0031 | Egregia menziesii | 6 | 1.00 |  | 0.08 | - | - | 0.50 | 0.03 | 0.50 | 0.03 | 0.03 | 0.53 | 0.05 | 0.50 |  | 0.03 | 0.03 |
| 0071 | Erythrophyllum delesserioides | 6 |  |  | 0.53 | - | 0.53 | 0.53 | 0.05 |  |  |  | 0.05 | 0.03 |  | 1.03 | 0.50 | 0.05 |
| 1304 | Farlowia/Pikea spp.complex | 6 | - | 0.03 | 0.50 | - | 0.05 | 0.03 | 0.03 | 0.03 | 0.05 | 0.05 | 0.50 | 0.55 | 0.10 | 0.55 | 0.05 | 0.53 |
| 0072 | Gastroclonium subarticulatum | 6 | - |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0073 | Gelidium coulteri | 6 | - |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0074 | Gelidium pusillum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0075 | Gelidium robustum | 6 | - | - | - | 0.03 | - | - | - | 0.03 | - | 0.03 | - | 1.03 | 0.03 | 0.05 | - |  |
| 0206 | Gelidium spp. | 6 | - | - | - | - | - | - | - |  | - |  | - |  |  |  | - | - |
| 1224 | Gloiosiphonia californica | 6 | - |  | - | - | - | - | - | - | - | - | - |  |  |  |  | - |
| 0109 | Grateloupia californica | 6 | - |  | - | - | - | - | - | - | - | - | - |  |  |  |  | - |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 |  | 0.05 | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | 0.03 |  | - | 0.03 | - | 0.03 | - | - | - | - | - | - | - | 1.05 | - | - |
| 0035 | Laminaria setchellii | 6 | 0.50 |  | 0.58 | 1.55 | 0.58 | 1.08 | 0.58 | 2.03 | 3.00 | 0.10 | 2.03 | 2.00 | 0.10 | 0.55 | 0.55 | 0.53 |
| 0233 | Laminariales | 6 |  |  |  | - |  |  |  |  | - | 0.05 |  | - | - | 0.53 | 0.05 | - |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | - | - | - |  |  |  | - |  | - | - |
| 0102 | Mazzaella affinis | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - | - |
| 0090 | Mazzaella oregona | 6 | 2.50 | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |
| 0230 | Mazzaella rosea | 6 |  |  |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 |
| 3383 | Mazzaella splendens | 6 | 3.00 | - | 3.00 | 0.03 | 0.53 | 1.53 | 1.50 | - | 0.50 | 5.50 | 3.53 | 6.50 | 1.03 | 10.00 | 4.50 | 11.00 |


| Species Code (spcode) | Species | Survey Date: Sampling Code | 2-Nov-76 | 18-Mar-77 | 22-Jun-77 | 21-0ct-77 | 8-May-78 | 26-Jun-78 | 31-Aug-78 | 17-Nov-78 | 16-Feb-79 | 15-May-79 | 12-Sep-79 | 15-Nov-79 | 29-Jan-80 | 27-May-80 | 5-Sep-80 | 13-May-81 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris | 6 | - |  | - |  | - |  | 0.10 | - | - | 0.50 | 0.05 | - | 0.03 | 0.10 | 0.08 | 0.08 |
| 0095 | Microcladia coulteri | 6 | 1.50 | 1.50 | 0.53 | 4.00 | 1.55 | 1.00 | 0.55 | 0.55 | 1.53 | 4.00 | 1.03 | 0.53 | 0.05 | 1.05 | 2.53 | 1.03 |
| 0153 | Neoptilota spp. | 6 | 0.50 | - | - |  | - | - | - | - | - |  | 0.03 | 0.03 |  |  | - | - |
| 0041 | Nereocystis luetkeana | 6 |  | - | 0.05 | 0.03 | - | - | - | 0.50 | - | 0.08 | - | - | - | 0.08 | 0.55 | - |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0096 | Opuntiella californica | 6 | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - | - | 0.03 | 0.03 |
| 0184 | Osmundea spp. | 6 | 0.50 | 0.50 | 1.00 | 3.00 | 1.53 | 1.55 | 0.53 | 1.50 | 1.00 | 1.55 | 3.00 | 1.53 | 0.55 | 4.03 | 3.03 | 6.00 |
| 0199 | Phaeophyta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. | 6 | - | ${ }_{5}{ }^{-}$ | - | - | - | - | - ${ }^{-}$ | $\bigcirc$ | $\cdots$ | - | ${ }_{75}{ }^{-}$ | - | $\bigcirc$ | $7{ }^{-}$ | $7{ }^{-}$ | $\stackrel{-}{-}$ |
| 0135 | Phyllospadix spp. | 6 | 9.53 | 5.53 | 6.50 | 8.50 | 8.53 | 12.50 | 11.50 | 9.00 | 5.50 | 11.50 | 7.53 | 9.00 | 6.03 | 7.03 | 7.00 | 8.50 |
| 0117 | Plocamium pacificum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima | 6 | - | - | - | 1.50 | - | - | - | - | - | - | 0.03 | 0.50 | - | - | - | - |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ |
| 0220 | Prionitis australis | 6 | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0106 | Prionitis spp. | 6 |  | 0.53 | - | 0.50 | 1.00 | 0.08 | 0.58 | 1.05 | 0.55 | 1.53 | 2.00 | 1.55 | 1.00 | 1.55 | 2.00 | 0.53 |
| 0221 | Ptercladiella caloglossoides | 6 | 0.50 | - | 0.50 | 1.00 | 1.03 | 0.05 | 0.08 | 0.03 | 1.08 | 0.08 | 0.08 | 0.03 | 0.55 | 0.05 | 0.10 | 1.03 |
| 1115 | Pterochondria woodii var. woodii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi | 6 | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea | 6 | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |
| 0042 | Pterygophora californica | 6 | 2.50 | 1.00 | 1.53 | 0.53 | 0.53 | 0.08 | 0.55 | 3.00 | 2.50 | 0.10 | 0.58 | 4.53 | 3.50 | 0.58 | 1.50 | 0.08 |
| 0187 | Pugetia firma | 6 | - | - | - | - |  | - | 0.03 | - | - | - | - | - | - | - | - | - |
| 0219 | Rhodophyta (juv. blades) | 6 | 0.50 | - | - | - | 0.53 | 0.03 | - | - | 0.55 | - | - | - | - | $0{ }^{-}$ | - | - |
| 0159 | Rhodymenia spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.53 | - | 0.03 | - |  |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | 0.50 | 0.55 | - | 0.10 | 1.53 | 0.05 | 0.50 | 0.55 | 0.05 | 0.55 | 0.08 | 0.10 | 0.58 | 1.03 | 0.55 |
| 1326 | Sargassum muticum | 6 | - | - | - | - | - | - |  | . | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa | 6 | - | - | 0.03 | - | - | - | - | - | - | 0.05 | - | - | - | 0.08 | - |  |
| 0110 | Smithora naiadum | 6 | - | - | 2.00 | - | - | - | 0.08 | 0.08 | 0.05 | 4.00 | 0.08 | - | - | 2.05 | 0.08 | 0.08 |
| 0014 | Ulva spp. | 6 | 4.00 | 1.00 | 2.00 | 2.03 | - | 0.05 | 0.03 | 0.10 | 0.10 | 0.08 | 0.08 | - | - | 1.53 | 0.08 | 0.08 |
| 0057 | coralline crust | 6 | 44.50 | 16.50 | 17.00 | 55.00 | 28.50 | 26.50 | 26.00 | 41.00 | 45.50 | 28.00 | 34.00 | 30.50 | 45.00 | 35.50 | 41.50 | 24.00 |
| 1300 | filamentous red algae complex | 6 | 0.50 | 0.50 | - | - | - | - | - | 0.53 | - | - | - | - | - | - | - |  |
| 0167 | juv. articulated coralline algae | 6 |  | - | - | - | 2.00 | - | - |  |  | 0.50 | - | - | ${ }^{-}$ | - | - |  |
| 0059 | non-coralline crust - | 6 | 10.00 | 4.00 | 7.00 | 11.50 | 0.55 | 3.50 | 0.55 | 3.53 | 5.00 | 0.53 | 1.50 | 12.00 | 6.00 | 1.53 | 0.05 | 1.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | 26 | 28 $3-N o v-81$ |  | 11-May-82 |  | 37 $3-M 9-83$ | - $\begin{array}{r}38 \\ \text { 18-J1-83 }\end{array}$ |  | [ $\begin{array}{r}41 \\ \hline 18-\mathrm{tan}-84\end{array}$ | 7-M34 |  | - 45 | $\begin{array}{r}47 \\ \hline \text { 2-85 }\end{array}$ | [ $\begin{array}{r}49 \\ \hline 17-A p r-85\end{array}$ | 50 | [ $\begin{array}{r}51 \\ \hline 10-85\end{array}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) | Species | ! | 14-Jul-81 | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 3-May-83 | 18-Jul-83 | 15-Sep-83 | 18-Jan-84 | 7-May-84 | 17-Jul-84 | 20-Sep-84 | 2-Jan-85 | 17-Apr-85 | 9-Jun-85 | 10-Sep-85 |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - |  |  |  | - |  |  |  |  |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | . | - | - | - | 0.03 |  | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  | - | 0.05 |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 42.00 | 37.50 | 34.50 | 39.00 | 46.00 | 23.50 | 39.50 | 33.00 | 22.00 | 29.50 | 36.50 | 33.00 | 29.50 | 32.00 | 28.00 | 32.50 | 33.00 |
| 0064 | Callophyllis flabeliulata - |  | - | - | 0.03 | - | - | - | 0.03 | - | - | - | - |  |  | 0.03 |  |  |  |
| 0112 | Callophyllis spp. |  | 0.58 | 0.53 | 1.50 | 1.50 | 1.05 | 0.58 | 1.53 | 0.53 | 0.55 | 0.58 | 1.08 | 0.53 |  | 0.08 | 0.03 | 0.03 | 0.1 |
| 0239 | Chlorophyta (filamentous) |  | - | - | . | - | - |  | - | . |  |  |  |  | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | 0.03 | - | - | - |  | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0125 | Chondracanthus corymbiferus |  | 6.00 | 5.50 | 7.50 | 14.50 | 14.00 | 7.00 | 16.00 | 7.50 | 9.50 | 9.00 | 13.00 | 14.50 | 5.50 | 15.00 | 14.50 | 5.00 | 4.50 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | 0.03 | 0.05 | 0.50 |  | 0.08 | - | 0.03 | 0.55 | 0.08 | - | - | 0.03 | - | - | 0.03 |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | . | - | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | 0.03 | - | - | - | - | - | 0.03 | 0.03 | - | - | 0.03 | - |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | 0.0 | . | . | . | . | - |  | 0.03 | - | - | 0.03 | - |  |
| 0011 | Codium setchellii |  | - | - | - | - | - | - | - | . | - | - |  | - | . | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | 0.08 | - | . |  | - | - | 0.08 | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - |  | - | - |  | - | - | - | - | - | - | - | - | 0.03 |
| 0055 | Corallina chilensis |  | 1.53 | 4.00 | 0.08 | 1.53 | 2.00 | 3.03 | 3.03 | 0.53 | 1.53 | 1.55 | 2.05 | 0.58 | 0.55 | 0.55 | 0.55 | 1.08 | 4.50 |
| 0052 | Cryptopleura ruprechtiana |  | 33.50 | 29.00 | 22.00 | 38.50 | 36.00 | 16.50 | 46.50 | 37.50 | 27.50 | 43.00 | 49.00 | 46.50 | 30.00 | 37.50 | 44.00 | 43.00 | 25.00 |
| 0115 | Cryptopleura violacea |  | 0.53 | - | 0.03 | 0.53 | 1.03 | - | 3.00 | 4.50 | 2.00 | 10.50 | 16.50 | 12.00 | 4.03 | 10.50 | 1.00 | 0.05 | 1.03 |
| 0036 | Cystoseira osmundacea |  | 1.53 | 5.00 | 7.00 | 6.00 | 7.50 | 6.50 | 2.00 | 4.50 | 11.00 | 2.50 | 2.00 | 6.00 | 7.00 | 3.03 | 7.53 | 7.00 | 3.03 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - |  | - | - | - |  | - | - | 0.03 | - | - | - |  |  |  |
| 1830 | Desmarestia ligulata |  | - | - | - | 0.03 | - | 0.03 | 5.50 | 0.53 | - | - | - | - | - | - | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | 0.03 | - | $5 \cdot$ | - | - | 0.03 | 5 | - | 0.03 | 0.05 | - | 0.03 | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | 0.53 | 0.03 | 0.03 | 0.50 | 1.03 | - | 0.53 | 0.05 | ${ }^{-}$ | 0.03 | 0.03 | 0.03 |  | - | - | 0.05 |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.05 | 0.05 | 0.08 | 0.10 | 0.53 | 0.10 | 0.08 |  | 0.08 | 0.58 | 0.05 | 0.55 | 0.08 | 1.08 | 0.55 | 1.05 | 1.03 |
| 0072 | Gastroclonium subarticulatum |  |  | - |  | 0.03 | . | 0.03 | 0.05 | - | 0.03 | 0.03 | - | - | - | - | - | 0.08 | 0.03 |
| 0073 | Gelidium coulteri |  | - | - | - |  | - |  | - | - | - | - | - | . | - | - | - | - |  |
| 0074 | Gelidium pusillum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | - | - | 0.03 | - | - | 0.03 | - | 0.03 | 0.08 | 0.03 | 0.05 | 0.05 | - | . | 0.05 | 0.05 | 0.05 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | $=$ | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | 0.03 | - | - | 0.03 | 0.03 | 0.03 | - | - | - | 0.03 | 0.03 | - | 0.03 | 0.08 | 0.08 | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  |  | 0.03 | - | 0.05 | 0.50 | 0.08 | - | - | - | 0.53 |  | - | 0.53 | 0.58 | - | 0.50 | 1.00 |
| 0035 | Laminaria setchellii . |  | 0.53 | 0.08 | 0.10 | 0.58 | 0.58 | 0.10 | 0.55 | 0.10 | 0.10 | 0.10 | 0.08 | 0.10 | 0.10 | 0.10 | 0.10 | 0.58 |  |
| 0233 | Laminariales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0102 | Mazzaella affinis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0090 | Mazzaella oregona |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | 0.03 | 0.08 | 0.05 | - | 0.05 | 0.03 | 0.55 | 0.05 | 0.58 | 0.05 | 0.05 | 0.05 | 0.58 | - | 0.03 |  |
| 3383 | Mazzaella splendens |  | 11.00 | 4.50 | 1.55 | 8.00 | 9.50 | 1.05 | 16.00 | 11.00 | 5.03 | 13.00 | 18.50 | 13.03 | 4.50 | 18.50 | 11.50 | 15.00 |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | $\leqslant$ | 14-Jul-81 | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 3-May-83 | 18-Jul-83 | 15-Sep-83 | 18-Jan-84 | 7-May-84 | 17-Jul-84 | 20-Sep-84 | 2-Jan-85 | 17-Apr-85 | 9-Jun-85 | 10-Sep-85 | 6-Nov-85 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  | 0.08 | 0.05 | 0.08 | 0.10 | 0.05 | 0.03 | 0.05 | 0.08 | 0.08 | 0.10 | 0.08 | 0.03 | 0.05 | 0.05 |  | 0.03 | 0.03 |
| 0095 | Microcladia coulteri |  | 0.10 | 0.58 | 0.08 | 2.55 | 1.03 | 0.08 | 11.50 | 1.08 | 1.05 | 3.03 | 3.50 | 0.58 | 0.10 | 7.00 | 0.05 | 0.10 | 0.58 |
| 0153 | Neoptilota spp. |  | - | 0.50 | - | - | 0.03 | - | -- | - | 0.03 | - | - | - |  | 0.03 | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - |  | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | . | - | 0.03 | - | 0.03 | 1.00 | 0.50 | - | 0.50 | - | - | - |  |
| 0096 | Opuntiella californica |  | 0.03 | 0.03 | 0.03 | - |  | 0.03 |  | 0.03 |  | - |  |  |  | 0.03 | - | 0.03 | 0.03 |
| 0184 | Osmundea spp. |  | 3.50 | 1.53 | 3.50 | 2.50 | 1.50 | 0.08 | 1.53 | 0.10 | 0.08 | 0.10 | 0.08 | 0.05 | 0.08 | 4.00 | 1.55 | 3.50 | 3.50 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - |  | - |  |  |  | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - - | - | - | - | - | - | - |  | - | - | - | 0.03 | - | - |  |
| 0135 | Phyllospadix spp. |  | 6.50 | 7.50 | 5.50 | 8.03 | 9.53 | 4.00 | 2.53 | 4.05 | 1.53 | 2.53 | 3.00 | 3.50 | 1.05 | 2.50 | 1.00 | 1.55 | 1.05 |
| 0117 | Plocamium pacificum |  | - | - |  | - | - | - | - | - | - |  | - |  |  | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | 0.03 | 0.03 | - | 0.03 | 0.03 | - | - | 0.53 | - |  |  | - | - | 0.03 |  |
| 0099 | Porphyra spp. |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | 1.50 |  |
| 0220 | Prionitis australis |  | 0.03 | - | 0.03 | 0.05 | 0.03 | 0.03 | - | - | 0.03 | 0.03 | - | - | - |  | - | 0.03 |  |
| 0106 | Prionitis spp. |  | 1.00 | 3.03 | 0.58 | 1.05 | 0.55 | 0.58 | . 1.00 | 0.08 | 1.55 | 0.05 | 2.03 | 1.53 | 1.55 | 2.00 | 0.58 | 2.53 | 3.03 |
| 0221 | Ptercladiella caloglossoides |  | 0.03 | 0.03 | 0.05 | 0.03 | 0.55 | - | 0.10 | - | - | 0.08 | 0.55 | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.03 |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | 0.08 | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | 0.53 | 0.10 | 0.10 | 0.10 | 3.03 | 0.10 | 2.00 | 0.10 | 0.10 | 0.10 | 1.05 | 0.10 | 0.10 | 1.55 | 0.10 | 0.58 | 0.08 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | 0.08 | 0.05 | - |  | $\square$ | - | - | - | - | - | - | 0.50 |
| 0159 | Rhodymenia spp. |  | 0.03 | 0.53 | 0.53 | 0.03 | 0.53 | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.05 | 0.10 | - | 0.58 | 1.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | 0.03 | 0.10 | 0.55 | 0.05 | 0.10 | 0.05 | 0.05 | 0.05 | 0.03 | 1.55 | 0.03 | 0.05 | 1.03 | 0.05 | 0.08 | 1.55 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - |  |  | - |  | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | 0.08 | - | 0.03 | - | 0.03 | 0.03 | - | - | - | - | - | 0.03 |
| 0110 | Smithora naiadum |  | 0.08 | 3.00 | - | 0.08 | 7.00 | - | - | - | - | - |  | - | - | 0.03 | - | - |  |
| 0014 | Ulva spp. |  | 0.55 | 0.08 | 0.53 | 0.03 | 0.08 | 0.05 | 2.03 | 0.10 | 0.03 | 0.08 | 0.08 | 0.08 | - | 0.05 | 0.03 | 0.08 | 0.08 |
| 0057 | coralline crust |  | 36.50 | 29.00 | 38.50 | 36.50 | 53.50 | 27.50 | 57.00 | 30.00 | 43.50 | 31.00 | 51.50 | 61.00 | 42.00 | 63.50 | 44.50 | 39.00 | 60.50 |
| 1300 | filamentous red algae complex |  | - | - | 0.03 | - | - | - | - | - | - | - |  | - | - | - | 0.03 | - |  |
| 0167 | juv. articulated coralline algae |  |  |  |  |  | - | - | 7.0 | $\bigcirc$ | - | $\bigcirc$ | $8{ }^{\circ}$ | $\bigcirc$ | 7. | 7.5 |  |  |  |
| 0059 | non-coralline crust |  | 1.00 | 0.58 | 0.10 | 0.58 | 2.55 | 6.00 | 7.00 | 2.03 | 4.53 | 6.00 | 8.00 | 9.00 | 7.00 | 7.50 | 2.08 | 5.53 | 9.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | 54 | 55 | 56 | 57 | 60 | ${ }^{61}$ | ${ }^{62}$ | ${ }^{63}$ | ${ }^{64}$ | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 28-Feb-90 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code |  | s | 28-Mar-86 | 13-May-86 | 25-Jul-86 | 22-Sep-86 | 31-Mar-87 | 13-May-87 | 15-Jul-87 | 3-Sep-87 | 17-Nov-87 | 27-Apr-88 | 12.Jul-88 | 16-Sep-88 | 10-Jan-89 | 18-Apr-89 | 8-Aug-89 | 19-Oct-89 | 28-Feb-90 |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | . - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - |  | 0.03 | 0.05 | - | 0.03 | - | 0.03 | 0.05 | - | 0.05 | - | 0.03 | 0.03 | - | 0.50 |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - |  | - | - | - | - |  | - | - | - | - |  | - | - | - |  |
| 0245 | Bryopsis spp. |  | - |  | - | - | - | - | - | - | - |  | - | - |  | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 24.50 | 30.00 | 33.00 | 26.50 | 30.50 | 31.00 | 31.50 | 38.50 | 23.00 | 8.50 | 25.00 | 18.50 | 21.00 | 15.50 | 19.50 | 19.00 | 25.00 |
| 0064 | Callophyllis flabelluata |  | 0.03 | 0.03 | 0.08 |  | 0.05 | 0.05 |  | - | - | - | - | - | - | - | 0.03 | - |  |
| 0112 | Callophyllis spp. |  | 0.03 | 0.08 | 0.08 | 0.03 | 1.53 | 0.03 | 0.03 | 0.03 | - | - | - | 0.03 | 0.03 | 0.55 | 0.53 | - | 0.53 |
| 0239 | Chlorophyta (filamentous) |  | - |  | - | - | - | - |  | - | - | $\cdot$ | - | - | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | 0.05 | - | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | 1.05 | 0.03 | 0.05 | 0.03 | 0.53 | 0.03 |  | 0.05 |
| 0125 | Chondracanthus corymbiferus |  | 2.03 | 17.50 | 22.50 | 13.00 | 9.50 | 23.00 | 10.50 | 8.50 | 1.53 | 8.50 | 12.00 | 10.00 | 1.53 | 11.00 | 14.00 | 4.50 | 7.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - |  |  |  | 0.05 | - | - | - | 0.05 | 0.03 |  | - | 0.53 |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  | 7.50 |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0011 | Codium setchellii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0146 | Colpomenia spp. |  | - | - | - | 0.08 | - | - | 析 | - | - | - | - | - | - | - | - |  |  |
| 0055 | Corallina chilensis |  | 3.53 | 3.00 | 3.53 | 2.03 | 1.50 | 0.03 | 1.00 | 0.05 | - | 14.50 | - | 0.05 | - | - | 0.03 | - | 0.03 |
| 0052 | Cryptopleura ruprechtiana |  | 7.00 | 16.50 | 33.00 | 29.50 | 21.50 | 34.00 | 34.00 | 41.00 | 4.50 | 1.53 | 6.00 | 4.00 | 3.53 | 4.50 | 8.00 | 8.50 | 0.05 |
| 0115 | Cryptopleura violacea |  |  | 4.00 | 14.50 | 12.50 | 31.50 | 39.00 | 31.00 | 29.00 | 24.50 | 71.50 | 70.00 | 47.50 | 35.50 | 62.50 | 56.50 | 39.00 | 51.50 |
| 0036 | Cystoseira osmundacea |  | 2.55 | 0.55 | 1.53 | 3.50 | 2.03 | 0.55 | 1.03 | 1.53 | 0.53 | 1.03 | 0.50 | 1.00 | 0.05 | - | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | - |  | - | - | - |  | - |  | . | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | - | - | - |  | 1.50 | - | - | - | - | - | - | 0.50 | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | . | - | - | . | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |  |
| 1304 | FarlowialPikea spp.complex |  | 0.08 | 0.08 | 1.05 | 1.05 | 1.55 | 4.00 | 1.53 | 5.03 | 0.10 | 1.03 | 0.58 | 0.58 | 1.08 | 2.03 | 5.03 | 1.53 | 0.55 |
| 0072 | Gastroclonium subarticulatum |  | 0.05 | 0.05 | 0.08 | - | 0.05 | 0.03 | 0.03 | 0.08 | 0.08 | - | 0.50 | 0.05 | 0.05 | 0.55 | 1.03 | 0.05 | 0.53 |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 |  | - | - | - |  |
| 0074 | Gelidium pusillum |  | - |  | - | - | - |  |  | - | - |  |  | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 0.08 | 0.05 | 0.05 | 0.03 | 0.10 | 0.08 | 0.05 | 1.03 | 0.08 | 0.55 | 0.53 | 0.03 | 1.05 | 0.50 | 1.05 | 1.05 | 0.55 |
| 0206 | Gelidium spp. |  | - |  |  | - |  |  | - | - | - | - | - | - | - | 0.03 | 0.03 | - |  |
| 1224 | Gloiosiphonia californica |  | - | 0.10 | 0.03 | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | 0.03 | - | - | $\stackrel{-}{-}$ | - | - | 1.53 | - | - | - | 1.03 | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | 0.03 | - | 0.05 . | $\bigcirc$ | 50 | - | 0.03 | - | ${ }^{-}$ | - | 0.03 | 5 | 0.03 | $\bigcirc$ | $0 \cdot$ |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | 5 | 10.00 | 1.08 | 0.03 | 0.08 | 5.00 | 0.53 | 0.03 | 0.08 | 4.50 | 10.00 | 0.53 | 0.55 | 2.03 | 2.03 | 0.03 | 0.53 |
| 0035 | Laminaria setchellii |  | 0.05 | 0.03 | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0102 | Mazzaella affinis |  | - | - | - | - | - - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0090 | Mazzaella oregona |  | $\bigcirc$ |  | 5 | , | 5 | $0{ }^{-}$ | 5 | 0 | 0 | 03 | 5 | 05 | 5 | 10 | 53 | 5 |  |
| 0230 | Mazzaella rosea |  | 0.03 | 0.05 | 1.05 | 0.10 | 0.05 | 0.08 | 1.55 | 0.08 | 1.03 | 0.03 | 0.55 | 1.05 | 1.58 | 0.10 | 1.53 | 0.58 | 0.08 |
| 3383 | Mazzaella splendens |  | 0.05 | 9.00 | 27.00 | 7.50 | 2.50 | 6.00 | 10.50 | 4.00 | - | 0.55 | 0.05 | 3.00 | 1.00 | - | 2.53 | 0.03 |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | ! | 28-Mar-86 | 13-May-86 | 25-Jul-86 | 22-Sep-86 | 31-Mar-87 | 13-May-87 | 15-Jul-87 | 3-Sep-87 | 17-Nov-87 | 27-Apr-88 | 12-Jul-88 | 16-Sep-88 | 10-Jan-89 | 18-Apr-89 | 8-Aug-89 | 19-Oct-89 | 28-Feb-90 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  | - |  | 0.03 | 0.03 | - | - | - |  |  |  |  |  |  |  | - | - |  |
| 0095 | Microcladia coulteri |  | - | 0.08 | 0.10 | 0.10 | 0.10 | 0.58 | 7.53 | 1.53 | 0.03 | 0.10 | 1.05 | 1.03 | 0.10 | 1.03 | 7.00 | 0.05 | 0.55 |
| 0153 | Neoptilota spp. |  | - |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | 0.03 | - | 0.03 | - | - | 1.00 | 0.05 | - | - | - | - | - | - | $0: 03$ | - | - |
| 0184 | Osmundea spp. |  | 2.05 | 3.00 | 2.05 | 1.55 | 2.05 | 3.50 | 2.00 | 2.53 | 3.53 | 3.00 | 1.00 | 2.50 | 2.55 | 1.53 | 3.50 | 11.00 | 7.50 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | 1.03 | 0.08 | 0.53 | 0.05 | 0.05 | 0.50 | 0.05 | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | 0.03 | - | 0.03 | - | 0.08 | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | 0.03 | - | - | 0.50 | - | - | - | 0.05 | - | 0.03 | 0.03 | - |
| 0106 | Prionitis spp. |  | 3.50 | 3.03 | 5.50 | 8.00 | 4.00 | 4.00 | 8.53 | 10.00 | 11.00 | 9.03 | 8.03 | 10.00 | 12.00 | 5.03 | 15.50 | 31.50 | 6.50 |
| 0221 | Ptercladiella caloglossoides |  | 0.03 | 0.03 | 0.10 | 0.08 | 0.05 | 0.08 | 0.50 | 0.08 | 0.08 | 0.05 | 0.10 | 0.08 | 1.05 | 0.05 | 0.05 | 0.03 | 0.03 |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | . | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | 0.03 | - | - | - | - | - | $\cdot$ | - | 0.03 | - | 0.03 | 0.03 | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  | - |  |
| 0159 | Rhodymenia spp. |  | 1.05 | 0.10 | 0.58 | 1.53 | 0.10 | 0.55 | 0.05 | 0.05 | 0.53 | - | 0.03 | 0.58 | 1.08 | 0.50 | 3.00 | 0.58 | 0.55 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.08 | 4.50 | 6.50 | 0.10 | 4.50 | 3.53 | 3.00 | 0.05 | 0.05 | 0.50 | 2.00 | 0.53 | 1.05 | 4.50 | 2.05 | 1.03 | 0.58 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | 0.03 | 0.03 |  |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0014 | Ulva spp. |  | 0.03 | - | 0.08 | 0.05 | - | - | - | 0.03 | - | - | - | 0.03 | 0.05 | 0.03 | 0.03 | - | 0.03 |
| 0057 | coralline crust |  | 35.50 | 62.00 | 62.00 | 39.00 | 64.00 | 56.00 | 37.50 | 61.00 | 39.00 | 57.50 | 42.50 | 56.00 | 32.00 | 43.50 | 45.00 | 39.00 | 27.00 |
| 1300 | filamentous red algae complex |  | - | 0.05 | 0.10 | 0.10 | - | 0.03 | 0.05 | - | - | - | - | - | - | - | 0.05 |  |  |
| 0167 | juv. articulated coralline algae |  | - |  |  |  | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0059 | non-coralline crust |  | 8.00 | 6.50 | 4.00 | 1.58 | 6.50 | 9.00 | 5.00 | 7.00 | 13.50 | 12.00 | 6.50 | 8.50 | 12.00 | 7.50 | 5.50 | 4.00 | 4.53 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | 74 | 75 | 76 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | ! | 2-May-90 | 18-Jul-90 | 24-Oct-90 | 7-May-91 | 29-Aug-91 | 24-Oct-91 | 11-Mar-92 | 28-May-92 | 25-Aug-92 | 5-Nov-92 | 10-Mar-93 | 8-Jun-93 | 25-Aug-93 | 19-Oct-93 | 29-Mar-94 | 2-Jun-94 | 12-Aug-94 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - |  | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - |  | - | - |  | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.58 | 0.03 | - | 0.03 | 1.03 | 0.03 | - | 0.50 | 1.03 | 1.00 | 1.03 | - | 1.00 | 0.53 | - | 0.05 |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | . | - | - | - | 0.03 | - | - | - | 0.03 | - | - | 0.03 | - |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 28.00 | 25.00 | 23.50 | 24.50 | 28.50 | 19.50 | 25.00 | 25.50 | 28.00 | 22.00 | 30.50 | 24.50 | 37.50 | 28.50 | 25.00 | 25.50 | 31.00 |
| 0064 | Callophyllis flabellulata |  | 0.55 | - | - | 0.05 | 0.03 | - | 0.03 | - | 0.03 | 0.03 | - |  |  | - | - | . |  |
| 0112 | Callophyllis spp. |  | 0.58 | 1.05 | - | 0.53 | 1.05 | . |  | 0.05 | 0.03 | - | 0.03 | 1.03 | - | 0.03 | 0.05 | . |  |
| 0239 | Chlorophyta (filamentous) |  |  | - | - |  |  | - | - |  |  | . | , | . | . | 0.03 | 0.0 | . |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | 0.05 | 0.03 | - | - | - | - | - | - | - | 0.05 |  |  | 0.03 |  |  |
| 0125 | Chondracanthus corymbiferus |  | 12.00 | 18.50 | 7.50 | 11.00 | 10.50 | 5.50 | 7.00 | 13.50 | 12.00 | 9.50 | 4.50 | 14.50 | 10.50 | 3.50 | 2.53 | 3.00 | 2.05 |
| 1305 | Chondracanthus harveyanus/spinosus |  | 0.03 | - | 0.53 |  | 0.03 | - |  | 0.50 |  | 4.00 | 2.03 | 7.00 | 1.00 | 0.50 | - | 5.50 |  |
| 1302 | Chrysophyta |  | 0.05 | - | 0.05 | 2.53 | 2.50 | 2.50 | 3.50 | - | 6.00 | - | 0.03 | 0.08 | 5.00 | - | 6.00 | 0.10 | 3.50 |
| 1143 | Clathromorphum parcum |  |  | - | - | - | - | - | - | - | - | - | - | - | . |  |  |  |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0011 | Codium setchellii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  |  |  | - | 0.03 | 0.05 | - | - | - | 0.08 | - | - | 0.05 | 0.58 | 0.05 | 0.10 | 0.58 |  |
| 0055 | Corallina chilensis |  | ${ }^{-}$ | 0.03 | 0.05 | 1.58 | 1.03 | 0.50 | 0.03 | 0.53 | 1.03 | 0.55 | 0.03 | 0.08 | 0.08 | 0.08 | , | 0.58 | 0.0 |
| 0052 | Cryptopleura ruprechtiana |  | 4.00 | 1.03 | 1.00 | 2.05 | 3.50 | 1.50 | - |  | - | - |  | - | - | - |  | - |  |
| 0115 | Cryptopleura violacea |  | 65.00 | 55.00 | 28.50 | 49.00 | 42.50 | 19.50 | 32.00 | 56.50 | 38.00 | 15.00 | 16.50 | 51.50 | 27.50 | 27.50 | 40.00 | 24.50 | 10.03 |
| 0036 | Cystoseira osmundacea |  | - | - | 0.03 | 0.03 | 0.03 | - | 0.58 | 0.05 | 0.58 | 0.08 | 0.10 | 1.05 | 0.53 | 1.05 | 0.10 | 2.00 |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | . | - | - | - | - | - |  | - | - |  |
| 1830 | Desmarestia ligulata |  | 0.50 | 5.00 | - | 0.03 | 1.00 | - | - | - | - | . | - | 0.55 | . | - | . | 1.03 | 15.0 |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - |  | - | - |  | - | - | - | - |  |
| 1304 | Farlowi/Pikea spp.complex |  | 1.53 | 1.53 | 1.03 | 1.58 | 2.08 | 0.58 | 2.50 | 3.50 | 3.50 | 6.00 | 11.50 | 14.00 | 12.50 | 12.50 | 21.00 | 17.00 | 12.00 |
| 0072 | Gastroclonium subarticulatum |  | 0.53 | 3.05 | 1.05 | 1.05 | 2.03 | 0.53 | 0.08 | 0.53 | - | 0.05 | 0.50 | 1.00 | 0.03 | 0.53 | 2.00 | 0.50 |  |
| 0073 | Gelidium coulteri |  | 0. 5 | . | - | . | 2.0 | 0. | . | - | - | . | 0.5 |  | 0.0 | 0. 5 | - | 0.50 |  |
| 0074 | Gelidium pusillum |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | . | . |  |
| 0075 | Gelidium robustum |  | 0.08 | 1.03 | 0.08 | 1.53 | 1.00 | 1.05 | 3.03 | 1.55 | 1.03 | 6.50 | 6.50 | 5.50 | 8.50 | 3.00 | 11.50 | 5.50 |  |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | . |  | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | . | - | 0.05 | - | - | - | 0.03 |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | 0.05 | - | - | - | - | - | - | 0.03 | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | 1.53 | 2.50 | 0.03 | 3.00 | 0.03 | 0.05 | 0.03 | 0.53 | - | - | - | 0.50 | - | - | - | 0.05 |  |
| 0035 | Laminaria setchellii |  | - | 0.03 | - | 0.03 | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 | 1.53 | 1.00 | 1.50 | 0.58 | 2.50 | 1.50 | 1.08 | 7.53 | 10.5 |
| 0102 | Mazzaella affinis |  | - | - | - | - | - | - | - | - | - | - | - |  | 0.03 | 0.53 | 0.50 | - |  |
| 0090 | Mazzaella oregona |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 1.05 | 0.58 | 0.58 | 1.53 | 0.03 | 0.05 | 0.05 | 0.08 | 2.50 | 2.00 | 0.50 | 0.08 |  | - | - | 0.55 |  |
| 3383 | Mazzaella splendens |  | 0.50 | 0.50 | 0.03 | 0.50 | 0.08 | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ! | 2-May-90 | 18-Jul-90 | 24-Oct-90 | 7-May-91 | 29-Aug-91 | 24-Oct-91 | 11-Mar-92 | 28-May-92 | 25-Aug-92 | 5-Nov-92 | 10-Mar-93 | 8-Jun-93 | 25-Aug-93 | 19-Oct-93 | 29-Mar-94 | 2-Jun-94 | 12-Aug-94 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  |  |  |  |  |  |  | - |  |  | - | - |  | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 5.53 | 0.55 | 1.05 | 18.00 | 2.50 | 0.10 | 0.05 | 0.05 | 0.50 | - | 0.03 | - | 0.03 | - | 0.03 | 0.53 |  |
| 0153 | Neootilota spp. |  | - | - | - | - | 2.50 | - | - | - | - | - | - | - | - | - |  |  |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | 0.03 | - | 1.00 | 1.03 | 1.50 | 1.58 | 1.50 | 4.03 | 0.50 | 3.00 | 0.55 | 0.03 | - |
| 0096 | Opuntiella californica |  | - | - | - | 0.03 | - | - |  |  |  | - |  |  | - | - | - | - | - |
| 0184 | Osmundea spp. |  | 8.00 | 10.50 | 18.00 | 12.50 | 23.00 | 13.00 | 1.58 | 5.00 | 0.05 | 2.03 | 2.50 | 2.50 | 2.53 | 3.00 | 0.10 | 4.03 | 0.10 |
| 0199 | Phaeophyta |  | - | - | - | 0.03 | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium paciicum |  | - | - | 0.03 |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | 0.03 | - | - | - | - | - | - |  | 0.03 | - | - | - | 0.03 |  |
| 0099 | Porphyra spp. |  | - | . | - | - | - | - | - | - |  | - |  |  | - | - | - | - |  |
| 0220 | Prionitis australis |  |  | 0.03 |  | - | 0.05 | 0.53 | - | 0.05 | 1.00 | - | 0.50 | 0.03 |  | - | - | - | - |
| 0106 | Prionitis spp. |  | 12.00 | 15.00 | 23.50 | 6.00 | 20.50 | 27.50 | 13.00 | 9.50 | 18.50 | 18.50 | 16.00 | 14.50 | 16.00 | 16.50 | 11.50 | 12.50 | 9.00 |
| 0221 | Ptercladiella caloglossoides |  | 0.03 | - | 0.03 | 0.03 | 0.03 | - | - | 0.03 | - | 0.03 | - | - |  |  | - | 0.03 |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  | - | $\bigcirc$ |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.03 | 0.10 | 0.08 | 0.50 | 0.10 | 0.05 | 0.08 | 1.05 | 0.10 | 0.03 |
| 0042 | Pterygophora californica |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0159 | Rhodymenia spp. |  | 3.00 | 2.05 | 4.00 | 2.05 | 2.55 | 4.50 | 1.03 | 3.53 | 3.00 | 2.53 | 1.00 | 3.50 | 3.53 | 1.03 | 2.05 | 3.50 | 1.05 |
| 0104 | Sarcodiotheca gaudichaudii |  | 5.00 | 1.53 | 1.05 | 1.53 | 0.55 | 0.58 | 0.08 | 0.50 | 0.50 | - | 0.05 | 1.03 | - | 0.03 | 0.08 | 0.08 | 0.03 |
| 1326 | Sargassum muticum |  |  |  | - | - | . | - | - | , | - | - | - | - | - |  | - | - |  |
| 0155 | Scinaia confusa |  | - |  | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - |  | - | - |  | - | - | - | - | - | - | - | - |  | - | - |  |
| 0014 | Ulva spp. |  | 0.10 | 0.10 | 0.10 | 0.55 | 1.50 | 0.58 | 0.05 | 0.10 | 0.08 | 0.10 | 0.10 | 4.03 | 0.55 | 0.03 | 0.10 | 0.10 | 0.10 |
| 0057 | coralline crust |  | 44.00 | 35.00 | 54.50 | 56.00 | 52.50 | 34.00 | 60.00 | 41.50 | 42.50 | 49.00 | 63.00 | 57.00 | 44.00 | 55.00 | 49.50 | 54.00 | 36.00 |
| 1300 | filamentous red algae complex |  | 0.03 | 9.50 | 0.05 |  | 0.05 | - | 0.03 | 1.05 | 0.03 | 0.08 | 2.53 | 0.08 | 2.55 | 0.05 | 1.03 | 1.08 | 0.03 |
| 0167 | juv. articulated coralline algae |  |  |  |  |  |  | - |  | - |  |  | - |  |  |  |  |  |  |
| 0059 | non-coralline crust |  | 7.50 | 7.50 | 9.50 | 8.50 | 5.50 | 9.00 | 4.53 | 2.50 | 3.53 | 2.50 | 3.00 | 4.03 | 4.00 | 4.00 | 2.00 | 2.03 | 1.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6= Coverage Based on \# of Contact Points



| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | : | 9-Nov-94 | 28-Mar-95 | 9-Jun-95 | 11-May-99 | 18-Aug-99 | 20-Oct-99 | 1-May-00 | 30-Jun-00 | 6-Sep-00 | 1-Nov-00 | 3-Apr-01 | 19-Jun-01 | 30-Aug-01 | 15-Jan-02 | 26-Mar-02 | 4.Jun-02 | 20-Aug-02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  |  | - |  | - |  | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.05 | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | 3.50 |  |
| 1154 | Nienburgia andersoniana |  | 3.00 | 1.53 | - | - | - | - | - | 0.03 | - | - | - | - | 0.50 | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0184 | Osmundea spp. |  | 2.00 | 0.03 | 1.05 | - | 0.50 | 0.05 | 0.03 | - | - | - | - | - | 0.50 | - | 0.03 | 0.03 |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | 50, | - | - | - | - | - | - | $\bigcirc$ | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | 0.03 | 0.03 | 0.50 | 0.50 | - | - | - | - | 1.00 | 0.03 | - |  |
| 0106 | Prionitis spp. |  | 14.50 | 7.00 | 4.00 | 2.03 | 5.00 | 9.00 | 5.00 | 7.00 | 5.50 | 4.00 | 3.00 | 4.53 | 3.00 | 4.50 | 2.50 | 0.50 | 4.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 1115 | Peterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.05 | 0.03 | - | - | 0.50 | - | 3.03 | 0.05 | 3.03 | - | - | 0.05 | 0.05 | 0.10 | 1.03 | 0.10 | 1.00 |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 0.55 | 1.05 | 3.50 | 0.50 | 0.10 | 0.05 | 0.50 | 0.50 | 1.03 | 0.53 | 0.03 | 0.03 | 0.55 | 2.03 |  | 1.00 | 0.58 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 | - | 0.05 | - | 0.03 |  | - | - | - | - | - | 0.03 | - |  | 0.53 | - |  |
| 1326 | Sargassum muticum |  | - | - | - | - | 0.05 | 0.03 | 2.00 | 1.05 | 0.05 | 0.53 | 0.08 | 0.53 | - | 1.05 | 1.53 | 0.03 | 0.08 |
| 0155 | Scinaia confusa |  | - | - | 0.05 | - |  | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - |  | - | - |  |  | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.50 | 0.05 | 0.10 | 0.08 | 1.08 | 0.03 | 0.03 | 0.03 | 0.08 | - | - | 0.08 | - | - | 0.10 | 0.10 |  |
| 0057 | coralline crust |  | 51.00 | 46.50 | 24.00 | 31.50 | 35.00 | 69.50 | 65.00 | 63.50 | 53.50 | 25.00 | 15.50 | 25.00 | 21.50 | 74.50 | 74.50 | 71.50 | 28.50 |
| 1300 | filamentous red algae complex |  | 0.05 | 0.55 | 0.05 | 0.03 |  |  | 0.03 | 0.03 | 0.08 | - | 0.50 | - | - | 0.10 | 0.58 | 0.05 |  |
| 0167 | juv. articulated coralline algae |  | - | - | - | - | - | - |  |  |  | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 4.00 | 3.50 | 4.00 | 2.53 | 0.55 | 0.50 | 1.50 | 4.00 | 3.50 | 1.05 | 0.08 | 0.08 | 1.58 | 2.03 | 0.50 | 0.50 | 0.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points



| Species Code (spcode) | Species | s | 3-Dec-02 | 12-Mar-03 | 6-May-03 | 19-Aug-03 | 6-Jan-04 | 30-Mar-04 | 26-May-04 | 19-Aug-04 | 13-Jan-05 | 25-Mar-05 | 9-Jun-05 | 11-Aug-05 | 29-Nov-05 | 14-Mar-06 | 16-May-06 | 14-Aug-06 | 20-Oct-06 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - |  | - | - | - | - |  | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.03 |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | 0.05 | - | - | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | 0.03 | 0.03 |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | 0.05 | 0.03 | 0.58 | - | - | - | - | - | - | - | - | - | 0.03 | 0.05 | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | $\cdot$ | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | 4.03 | 3.50 | 2.53 | 4.00 | 3.53 | 2.50 | 2.50 | 6.00 | 2.05 | 1.55 | 5.00 | 7.50 | 7.50 | 3.53 | 3.00 | 4.50 | 4.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - |  |  | - | - | - | - | - | - | - | - |  |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0192 | Pterosiphonia dendroidea |  | 0.05 | - | - | 0.10 | 0.03 | 0.50 | - | - | - | 0.03 | - | - | 0.03 | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | ${ }^{-}$ | - | - | $\cdot$ | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 2.03 | 1.00 | 0.55 | 2.00 | 0.08 | 2.00 | - | 0.03 | 1.50 | 0.05 | - | 1.03 | 0.50 | 0.58 | 1.00 | - |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | 0.50 | - | - | - | - | 0.03 | - | - | - | 0.50 | 0.03 | - | 0.03 | - |  |
| 1326 | Sargassum muticum |  | 0.08 | 1.50 | 1.03 | - | - | 0.03 | - | - | - | 0.03 | 0.55 | 0.03 | 1.03 | 2.03 | 2.08 | - | 0.08 |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | 0.03 | - | - | - | - |  | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.08 | 1.08 | 0.10 | - | - | 0.08 | 0.08 | - | - | 0.08 | 0.05 | 0.08 | 0.03 | 0.05 | - | 0.53 |
| 0057 | coralline crust |  | 37.50 | 74.50 | 23.50 | 71.50 | 24.00 | 26.00 | 17.50 | 47.50 | 26.00 | 29.50 | 31.50 | 31.50 | 45.50 | 38.00 | 36.00 | 44.00 | 35.00 |
| 1300 | filamentous red algae complex |  | 3.50 | 0.10 | 10.50 | 0.03 | - | 1.00 | - | - | . | 0.58 | - | 0.03 | 0.10 | 19.50 | 2.53 | 0.50 |  |
| 0167 | juv. articulated coralline algae |  |  |  |  |  | - |  | - | - | - |  | - |  | - | - | - |  |  |
| 0059 | non-coralline crust |  | 3.03 | - | 0.10 | 1.00 | 5.00 | 0.10 | 0.10 | 3.50 | 4.50 | 0.58 | 3.00 | 1.05 | 7.00 | 3.00 | 1.05 | 3.03 | 2.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points



|  | Species | ؛ | 7-Mar-07 | 18-May-07 | 6-Aug-07 | 29-0ct-07 | 27-Feb-08 | 14-May-08 | 30-Jul-08 | 29-0ct-08 | 15-Jan-09 | 21-May-09 | 5-Aug-09 | 8-Oct-09 | 20-Mar-10 | 19-May-10 | 4-Aug-10 | 8-Oct-10 | 13-Jan-11 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  | - | - |  | - | - | - | - | - | - |  |  |  | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptiota spp. |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | 0.03 | 0.05 | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - |  |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | 析 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | 5.00 | 6.50 | 5.50 | 8.00 | 6.00 | 4.50 | 4.03 | 7.50 | 5.50 | 6.00 | 11.00 | 10.50 | - | - | - | - |  |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | - | 0.53 | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 0.03 | 0.03 | 0.53 | 0.55 | 0.03 | 0.03 | 0.03 | 0.03 | - | - | - | - | - | - | - | - |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 |  | 0.03 | - | - | - | 0.03 | - | - | - | 0.05 | - | - | - | - |  |
| 1326 | Sargassum muticum |  | 3.03 | 1.55 | 0.08 | 1.05 | 1.00 | 2.03 | 0.53 | 0.50 | 0.08 | - | - | 0.03 | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.10 | - | 0.03 | - | 0.03 | - | - | 0.03 | 0.08 | 0.03 | 0.03 | ${ }^{-}$ | - | - | 5 |  |
| 0057 | coralline crust |  | 14.50 | 41.00 | 53.50 | 45.00 | 31.50 | 52.50 | 40.50 | 44.00 | 43.00 | 43.50 | 35.50 | 43.50 | 52.00 | 17.50 | 39.00 | 48.50 | 45.50 |
| 1300 | filamentous red algae complex |  | 7.50 | 2.05 |  | 0.03 | 5.00 | 1.05 | - | - | 3.53 | 4.03 | 0.05 | 1.05 | 0.03 | - | - | - |  |
| 0167 | juv. articulated coralline algae |  |  | - | ${ }^{-}$ |  |  |  | - | - | - |  | - |  |  | 120 | - | 200 |  |
| 0059 | non-coralline crust |  | 0.03 | 0.55 | 4.00 | 4.50 | 2.50 | 6.00 | 4.50 | 7.00 | 2.00 | 0.55 | 3.53 | 4.53 | 7.00 | 12.00 | 5.00 | 2.00 | 4.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

| 153 | 54 | 155 | 156 | 157 | 158 | 159 | 160 | 61 | 162 | 163 | 4 | 65 | 66 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| pr-11 | Aug-11 | 1-Oct-11 | 12-Jan-12 | 26-Apr-12 | 10-Aug-12 | 14-Nov-12 | 1.Feb-13 | 23-Apr-13 | 16-Jul-13 | 18-Oct | 6-Jan-14 | 2 -May-1 | 15-Jul-14 |

$\begin{array}{rrrrrrr}153 & 154 & 155 & 156 & 157 & 158\end{array}$
Code

| (spcode) | Species |
| :--- | :--- |
| 0013 | Acrosiphonia spp |

1549 Acrosorium ciliolatum
0126 Ahnfeltiopsis leptophylla
0981 Ahnfeltiopsis leptophy
1303 Annteltiopsis linearis
$\begin{array}{ll}1303 & \text { Antithamnion/Pterothamnion spp.-co } \\ 0245 & \text { Bryopsis spp. } \\ 0049 & \text { Calliarthron/Bossiella spp.-complex }\end{array}$
Callophyllis flabellulata
Callophyllis spp.
Chlorophyta (filamentous)
Chondracanthus canaliculatus
Chondracanthus corymbiferus
Chondracanthus harveyanus/spinosus
Chrysophyta
167 Clathromorphum parcum Codium fragile subsp. Californic Codium setchellii
Coilodesme calfornica
Colpomenia spp.
Corallina chilensis
Cryptopleura ruprechtiana
Cryptopleura violacea
Cystoseira osmundacea
Delesseriaceae (juv.)
Desmarestia ligulata
Dictyoneurum californicum
Dictyota binghamiae
Ectocarpales
0031 Egregia menziesi
0071 Erythrophyllum delesserioides
1304 Farlowia/Pikea spp.-complex
0072 Gastroclonium subarticulatum
0073 Gelidium coulteri
0074 Gelidium pusillum
0075 Gelidium robustum
0206 Gelidium spp.
1224 Gloiosiphonia californica
0109 Grateloupia californica
0149 Halicystis ovalis (=Derbesia marina)
0152 Halymenia/Schizymenia spp.-complex
0035 Laminaria setchellii
0233 Laminariales
1640 Macrocystis pyrifera
102 Mazzaella aftinis
0230 Mazzaella oregona
3383 Mazzzalla slende

| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \\ & \hline \end{aligned}$ | Species | ! | 19-Apr-11 | 4-Aug-11 | 11-Oct-11 | 12-Jan-12 | 26-Apr-12 | 10-Aug-12 | 14-Nov-12 | 1-Feb-13 | 23-Apr-13 | 16-Jul-13 | 18-Oct-13 | 6-Jan-14 | 2-May-14 | 15-Jul-14 | 6-Nov-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - |  | - |  | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0173 | Pterosiphonia baileyi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0159 | Rhodymenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - - |  |
| 0014 | Ulva spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 43.50 | 36.00 | 42.00 | 47.00 | 40.00 | 7.00 | 46.00 | 56.00 | 41.50 | 16.00 | 47.00 | 27.50 | 43.50 | 46.50 | 42.50 |
| 1300 | filamentous red algae complex |  | - | - | - | - | - | - | - | . | - | - | - | . | - | - |  |
| 0167 | juv. articulated coralline algae |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 1.00 | 0.08 | 2.53 | 2.03 | 4.00 | 1.53 | 2.05 | 2.00 | 5.53 | 6.00 | 6.50 | 9.00 | 11.00 | 8.50 | 6.00 |

## Subtidal Line Contact - Survey Invertebrate Abundance ( $\%$ Cover for 7 m squared) - North Diablo Cove NDC $2-3 \mathrm{~m}$

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  | Survey: | 2 | 3 | 4 | 5 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 25 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | Survey Date: | 2-Nov-76 | 18-Mar-77 | 22-Jun-77 | 21-0ct-77 | 8-May-78 | 26-Jun-78 | 31-Aug-78 | 17-Nov-78 | 16-Feb-79 | 15-May-79 | 12-Sep-79 | 15-Nov-79 | 29-Jan-80 | 27-May-80 | 5-Sep-80 | 13-May-81 | 14-Jul-8 |
| Code (spcode) | Species | Sampling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi | 6 | - | - | - | - | - | - | - | . - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera | 6 | - | - | - | - | - | - | $\because$ | - | - | - | - | 0.50 | - | - | - | - |  |
| 0259 | Hydroidolina | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |
| 0480 | tunicates, compound/social | 6 | - | - | . - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Sampling code: $6=$ Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | ${ }^{28}$ | ${ }^{30}$ | ${ }^{31}$ | 32 | - 37 | ${ }^{38}$ | ${ }^{39}$ | 41 4 | 43 | - $\begin{array}{r}44 \\ \text { 17-Jul } \\ 4\end{array}$ | - 45 | $\begin{array}{r}47 \\ \hline \text { 2-85 }\end{array}$ |  | - 50 | 10-Sep-85 | 6.Nov-85 | 28-Mar-86 |  |
| Species |  | s | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 3-May-83 | 18-Jul-83 | 15-Sep-83 | 18-Jan-84 | 7-May-84 | 17.Jul-84 | 20-Sep-84 | 2-Jan-85 | 17-Apr-85 | 9-Jun-85 | 10-Sep-85 | 6-Nov-85 | 28-Mar-86 | 13-May-86 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi |  | - | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0259 | Hydroidolina |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate , |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 56 | 57 | 60 | 61 | 62 | 63 | 64 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 |
| Species |  | ! | 25-Jul-86 | 22-Sep-86 | 31-Mar-87 | 13-May-87 | 15-Jul-87 | 3-Sep-87 | 17-Nov-87 | 27-Apr-88 | 12-Jul-88 | 16-Sep-88 | 10-Jan-89 | 18-Apr-89 | 8-Aug-89 | 19-0ct-89 | 28-Feb-90 | 2-May-90 | 18-Jul-90 | 24-Oct-90 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0259 | Hydroidolina |  | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | - | - | - | - | 0.50 | - | 1.00 | 0.50 | 0.50 | 2.50 | 2.50 | 2.50 | 2.00 | 2.00 | - | - | - | - |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |



| Subtidal Line Contact - Survey Invertebrate, |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 |
| Species |  | $\leqslant$ | 18-Aug-99 | 20-Oct-99 | 1-May-00 | 30-Jun-00 | 6-Sep-00 | 1-Nov-00 | 3-Apr-01 | 19-Jun-01 | 30-Aug-01 | 15-Jan-02 | 26-Mar-02 | 4-Jun-02 | 20-Aug-02 | 3-Dec-02 | 12-Mar-03 | 6-May-03 | 19-Aug-03 | 6 -Jan-04 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  | - | - |  |  |  | - | - |  | - | - | - | - |  |  |  |  |  |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0259 | Hydroidolina |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | 1.00 | - | 3.50 | 2.00 | 7.00 | 7.50 | 4.00 | - | 2.50 | 0.50 | - | - | - | 11.50 | - | - | - | 0.50 |
| 0492 | Porifiera (encrusting) |  | - | - | - | - |  | - | . | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | . | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Sampling code: 6 = Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 |
| Species |  | ! | 30-Mar-04 | 26-May-04 | 19-Aug-04 | 13-Jan-05 | 25-Mar-05 | 9 9-Jun-05 | 11-Aug-05 | 29-Nov-05 | 14-Mar-06 | 16-May-06 | 14-Aug-06 | 20-Oct-06 | 7-Mar-07 | 18-May-07 | 6-Aug-07 | 29-Oct-07 | 27-Feb-08 | 14-May-08 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  | - | - | - | - | - | - |  | - |  |  | - | - | - | - | - |  | - |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0259 | Hydroidolina |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | 1.00 | - | - | - | - | 0.50 | - | - | - | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Sampling code: 6= Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{array}{r} 142 \\ \text { 30-Jul-08 } \end{array}$ | $\begin{array}{r} 143 \\ \text { 29-Oct-08 } \end{array}$ | $\begin{array}{r} 144 \\ \text { 15-Jan-09 } \end{array}$ | $\begin{array}{r} 145 \\ \text { 21-Mav-09 } \end{array}$ | $\begin{array}{r} 146 \\ \text { 5-Aug-09 } \end{array}$ | $\begin{array}{r} 147 \\ \text { 8-Oct-09 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 20-Mar-10 } \end{array}$ |  | $\begin{array}{r} 150 \\ \text { 4-Aua-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 8-Oct-10 } \end{array}$ | $\begin{array}{r} 152 \\ \text { 13-Jan-11 } \end{array}$ | $153$ | $154$ | $155$ | $156$ | $157$ | $158$ | $159$ |
| Species Code |  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - |  |  |  |  |  | - |  | - |  | - |  | - |  |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  | - |  |
| 0259 | Hydroidolina |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - - | - | - | - | - | - |  | - |  | - | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate

| Sampling code: 6 = Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 |
| Species Code (spcode) |  | ! | 1-Feb-13 | 23-Apr-13 | 16-Jul-13 | 18-Oct-13 | 6-Jan-14 | 2-May-14 | 15-Jul-14 | 6-Nov-14 |
|  |  |  |  |  |  |  |  |  |  |  |
|  | Species |  |  |  |  |  |  |  |  |  |
| 0271 | Anthozoa |  |  |  | - |  |  |  |  |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - |  |  |  | - |
| 0266 | Epiactis prolifera |  | - | - | - | - | - |  |  |  |
| 0259 | Hydroidolina |  | - | - | - | - |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - |  |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - |  |  |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - |


| Species Code (spcode) | Species | Survey: <br> Survey Date: Sampling Code | $\begin{array}{r} 2 \\ 27-\text { Sep-76 } \end{array}$ | 18-Mar-77 | 23-Jun-77 | 6-Oct-77 | 10-May-78 | $\begin{array}{r} 8 \\ \text { 26-Jun-78 } \end{array}$ | 1-Sep-78 ${ }^{9}$ | $\begin{array}{r} 10 \\ \text { 17-Nov-78 } \end{array}$ | $\begin{array}{r} 12 \\ \text { 16-Feb-79 } \end{array}$ | $\begin{array}{r} 13 \\ \text { 16-May-79 } \end{array}$ | $\begin{array}{r} 15 \\ \text { 22-Aug-79 } \end{array}$ | $\begin{array}{r} 16 \\ \text { 15-Nov-79 } \end{array}$ | 29-Jan-80 | 27-May-80 | $\begin{array}{r} 21 \\ \text { 12-Sep-80 } \end{array}$ | $\begin{array}{r} 25 \\ \text { 13-May-81 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. | 6 | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |  |
| 1549 | Acrosorium ciliolatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex | 6 | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0245 | Bryopsis spp. | 6 | - | - | - | ${ }^{-}$ | - |  | $\stackrel{-}{-}$ | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex | 6 | 49.50 | 33.50 | 43.50 | 37.50 | 44.50 | 41.50 | 47.00 | 39.50 | 42.50 | 47.00 | 45.50 | 43.50 | 36.00 | 42.50 | 39.50 | 41.50 |
| 0185 | Callithamnion spp.IPleonosporium spp. | 6 | - | - | - | - | - |  | - | - | - | - | - | . | - | - | - |  |
| 0064 | Callophyllis flabellulata | 6 | - | - | 0.03 | - |  | 1.03 |  | - | - | - | - | - | 0.03 | - | 0.03 | 0.03 |
| 0112 | Callophyllis spp. | 6 | - | 0.53 | 5.50 | - | 0.03 | 0.55 | 0.53 | 1.55 | 0.53 | 0.55 | 1.00 | 0.08 | 0.05 | 3.00 | 0.53 | 1.03 |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - | - | - | . | - |  | - | - |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0125 | Chondracanthus corymbiferus | 6 | 8.50 | 7.00 | 19.00 | 8.00 | 12.00 | 7.00 | 11.50 | 15.00 | 14.50 | 7.50 | 16.50 | 11.50 | 7.50 | 18.00 | 17.50 | 16.00 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0010 | Cladophora spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1137 | Codium fragile subsp. Californicum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0146 | Colpomenia spp. | 6 | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - | - |
| 0055 | Corallina chilensis | 6 | 2.50 | 17.00 | 17.00 | 9.00 | 12.50 | 11.00 | 9.50 | 6.50 | 9.50 | 8.50 | 6.00 | 10.00 | 12.50 | 9.50 | 7.00 | 9.00 |
| 0056 | Corallina vancouveriensis | 6 | 6.50 |  |  |  |  |  |  | - | - | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana | 6 | - | 9.00 | 46.00 | 33.00 | 28.00 | 30.50 | 46.00 | 32.50 | 27.00 | 45.00 | 44.00 | 27.50 | 13.00 | 28.00 | 50.50 | 40.50 |
| 0115 | Cryptopleura violacea | 6 | - |  | 1.50 |  |  | 1.00 | 1.50 | 3.00 | 0.05 | 5.50 | 2.50 | 0.03 | - | 2.50 | 0.53 | 0.50 |
| 0036 | Cystoseira osmundacea | 6 | 0.50 | 0.03 | 0.03 | 1.50 | 0.05 | 0.08 | 0.05 | 1.00 | 0.05 | 0.53 | . | 0.05 | 0.55 | 0.58 | 0.53 | 0.05 |
| 1189 | Delesseria decipiens | 6 |  | - | - |  | - |  | - | - | - | - | - | - | . | . | . |  |
| 0235 | Delesseriaceae (juv.) | 6 | 33.00 | - | - | - | - | - | - | . | 0.53 | - | - | . | - | - | - |  |
| 1830 | Desmarestia ligulata | 6 | - | - | 14.50 | 4.50 | - | 0.03 | 0.53 | - | - | - | - | - | - | 0.03 | 1.00 | 0.53 |
| 0030 | Dictyoneurum californicum | 6 | - | - | - | - | - | 0.03 | - | - | - | - | 0.53 | - | 0.03 | 0.03 | - | 0.03 |
| 0190 | Dictyota binghamiae | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | 0.03 |
| 0238 | Ectocarpales | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0031 | Egregia menziesii | 6 | - | - | - | - | - | - | - | - | - | - | $\checkmark$ | - | - |  | - | - |
| 0071 | Erythrophyllum delesserioides | 6 | - | - | 1.50 | - | 0.03 | 1.03 | 0.05 | - | - | 0.03 | 0.05 | - | - | 0.53 | 0.50 | 0.50 |
| 1304 | Farlowia/Pikea spp.-complex | 6 | - | 0.08 | 0.53 | - | 0.05 | 0.03 | - | 0.03 | 0.05 | 0.53 | 0.53 | 0.53 | 0.05 | 0.03 | 0.03 | 0.08 |
| 0193 | Fauchea laciniata | 6 | - | - | - | - | - - | - | - | - | - | - | - | - |  |  | . | - |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0073 | Gelidium coulteri | 6 | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |
| 0074 | Gelidium pusillum | 6 | - | - | - | - | - | - | - | - | - | - | - | $\because$ | - | - | - | - |
| 0075 | Gelidium robustum | 6 | - | - | 0.50 | - | - | - | 0.50 | 0.50 | 0.50 | - | 0.03 | 0.03 | 0.03 | 0.55 | - | 0.53 |
| 0206 | Gelidium spp. | 6 | - | - | - | - | - | - | . | . |  | - |  | - | - |  | - |  |
| 1224 | Gloiosiphonia californica | 6 | - | - | - | - | - | - | - | - | - | - | . | - | - | . | - |  |
| 0109 | Grateloupia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | 0.03 | 0.50 | - | 0.03 | - | - | - | - | - | - | 0.03 | - | 0.03 | 0.03 | 0.03 |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | - | - | 1.00 | - | 1.03 | 0.03 | 0.03 | - | - | - | - | . | - | 0.03 | . | - |
| 0212 | Hymenena spp. | 6 | - | 㖪 | - | - | - | - | - | - | - | - | - | - |  |  | - | - |
| 0035 | Laminaria setchellii | 6 | - | 0.03 | 1.00 | 0.53 | 0.58 | 0.08 | 0.58 | 0.10 | 0.10 | 3.00 | 0.58 | 1.05 | 0.10 | 0.58 | 0.10 | 1.55 |
| 0233 | Laminariales | 6 | - | - | 0.08 | 0.50 | 0.03 | - | . | - | - | - | - | - | - | 0.05 | , |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | . | - | - | - | - | - | - |  | - |  |
| 0082 | Mastocarpus papillatus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | Survey Date: Sampling Code | 27-Sep-76 | 18-Mar-77 | 23-Jun-77 | 6-Oct-77 | 10-May-78 | 26-Jun-78 | 1-Sep-78 | 17-Nov-78 | 16-Feb-79 | 16-May-79 | 22-Aug-79 | 15-Nov-79 | 29-Jan-80 | 27-May-80 | 12-Sep-80 | 13-May-81 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos | 6 | - | - | - | - | - | - | - | - | - | - | - | - - | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 3383 | Mazzaella splendens | 6 | 7.00 | - | 8.53 | 0.50 | 3.03 | 5.50 | 6.03 | 6.53 | 2.50 | 5.00 | 7.00 | 6.00 | 1.55 | 12.00 | 12.50 | 13.00 |
| 1014 | Melobesia mediocris | 6 | - | - | - | - | - | - | 0.10 | 0.10 | 0.05 | 0.08 | 0.10 | - | 0.08 | 0.03 | 0.08 |  |
| 1242 | Membranoptera/Branchioglossum spp. | 6 | - | - | - | - | - | - |  |  | - |  |  | - |  |  |  |  |
| 0095 | Microcladia coulteri | 6 | 0.53 | 0.08 | 7.50 | 2.55 | 2.03 | 2.50 | 2.03 | 3.00 | 2.50 | 3.03 | 0.58 | 0.58 | 0.10 | 4.00 | 1.55 | 7.50 |
| 0153 | Neoptilota spp. | 6 | 0.50 | 0.03 | 2.03 | - | 0.05 | - | 1.03 | 0.03 | - | 0.05 | 0.05 | 0.03 | 0.10 | 1.03 | 0.05 |  |
| 0041 | Nereocystis luetkeana | 6 | - | - | - | 1.00 | - | - |  |  |  | 0.03 | 0.05 | - | - | 0.05 | 0.03 | 0.03 |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0096 | Opuntiella californica | 6 | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - |  |
| 0184 | Osmundea spp. | 6 | 1.00 | 0.50 | 3.05 | 1.00 | 2.03 | 2.53 | 3.00 | 2.05 | 2.53 | 4.50 | 0.03 | 2.55 | 2.50 | 3.03 | 0.58 | 2.03 |
| 0199 | Phaeophyta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. | 6 | - | - |  | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - |
| 0135 | Phyllospadix spp. | 6 | 12.50 | 6.00 | 10.00 | 6.00 | 7.00 | 2.03 | 3.03 | 7.00 | 3.55 | 3.53 | 3.03 | 6.50 | 1.50 | 4.03 | 7.03 | 6.03 |
| 0203 | Pikea robusta | 6 |  | - | - | - | - | - |  | - | - | - | - | - |  | 0.03 | - |  |
| 0117 | Plocamium pacificum | 6 | - | - | - | - | - | - |  | - | - | - | - | - |  |  |  |  |
| 0118 | Polyneura latissima | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | 0.03 | 0.50 |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - |  | - | - | - | - |  | - |  | .- |  |
| 0220 | Prionitis australis | 6 | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. | 6 | 1.00 | 1.03 | 3.50 | 1.53 | 2.05 | 0.50 | 0.03 | 0.05 | 0.55 | 0.05 | 0.53 | 2.03 | 1.05 | 0.53 | 0.05 | 0.50 |
| 0221 | Ptercladiella caloglossoides | 6 | 0.03 | 1.53 | 3.03 | - | 1.00 | 1.05 | 2.05 | 1.55 | 0.55 | 0.08 | 0.08 | 0.58 | 0.55 | 0.55 | 0.08 | 0.55 |
| 1115 | Pterochondria woodii var. woodii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea | 6 | - | - | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | - |
| 0042 | Pterygophora californica | 6 | 1.50 | 1.05 | - | 0.08 | 0.58 | 1.58 | 0.10 | 0.58 | 0.58 | 1.03 | 1.05 | 2.53 | 1.05 | 0.08 | 0.10 | 0.10 |
| 0187 | Pugetia firma | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0219 | Rhodophyta (juv. blades) | 6 | - | 0.50 | - | - | 0.08 | - | - | - | - | 1.50 | - | - | - | 0.03 | - | - |
| 0122 | Rhodoptilum plumosum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0159 | Rhodymenia spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.08 | - | 0.03 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | 1.53 | 2.55 | - | 3.00 | 1.53 | 2.53 | 1.03 | 0.05 | 1.53 | 1.55 | 0.58 | 0.03 | 1.05 | 0.08 | 2.05 |
| 1326 | Sargassum muticum | 6 | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum | 6 | 0.03 | - | - | - | - | - | - | - | - | 0.55 | 0.58 | - | - | 0.05 | 1.00 |  |
| 0014 | Ulva spp. | 6 | 3.50 | - | 3.50 | 0.05 | 0.03 | 0.05 | 0.05 | - | - | 0.08 | 0.05 | 0.08 | - | 0.08 | 0.05 | 0.08 |
| 0057 | coralline crust | 6 | 21.50 | 39.00 | 40.50 | 67.00 | 40.00 | 28.50 | 16.50 | 27.50 | 38.50 | 23.50 | 21.00 | 41.50 | 36.00 | 40.50 | 26.00 | 37.50 |
| 1300 | filamentous red algae complex | 6 | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.50 | - | 0.03 |
| 0167 | juv. articulated coralline algae | 6 | - | 2.00 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0059 | non-coralline crust | 6 | - | 6.00 | 3.55 | 0.50 | 4.53 | 1.50 | 0.03 | 1.03 | 2.50 | 3.50 | 0.10 | 3.53 | 2.53 | 0.55 | 0.05 | 0.58 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | 26 | 28 | 30 | 31 | 32 | 37 | 38 | 39 | 40 | 41 | 43 | 44 | 45 | 47 | 49 | 50 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code |  | ! | 14-Jul-81 | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 4-May-83 | 18-Jul-83 | 15-Sep-83 | 29-Nov-83 | 18-Jan-84 | 7-May-84 | 17-Jul-84 | 25-Sep-84 | 2-Jan-85 | 17-Apr-85 | 11-Jul-85 | 10-Sep-85 |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 44.50 | 48.50 | 43.50 | 46.50 | 53.50 | 26.50 | 31.50 | 34.00 | 27.50 | 29.50 | 42.00 | 41.50 | 34.50 | 34.50 | 40.50 | 36.00 | 33.00 |
| 0185 | Callithamnion spp.Pleonosporium spp. |  | - | - | 0.03 | - | - | - | - | - |  | 0.03 | - | - | - |  | - | - |  |
| 0064 | Callophyllis flabellulata |  | 0.03 | 0.03 | 0.08 | 0.05 | 0.03 | 0.03 | - | 0.05 | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.08 | - | - | 0.05 |
| 0112 | Callophyllis spp. |  | 1.53 | 0.05 | 2.53 | 3.03 | 2.50 | 0.08 | 0.03 | 2.00 | 0.50 | 0.10 | 0.58 | 0.03 | 0.03 | 1.03 | 0.05 | 0.03 | 0.08 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - |  |  | - | - | 㖪 | - | - |  |  | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |  | 0.03 |  |
| 0125 | Chondracanthus corymbiferus |  | 19.50 | 20.50 | 14.50 | 17.00 | 20.50 | 11.50 | 24.50 | 24.50 | 15.00 | 11.00 | 13.00 | 16.50 | 11.50 | 11.00 | 14.00 | 20.00 | 14.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0146 | Colpomenia spp. |  | - | $\cdots$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0055 | Corallina chilensis |  | 8.03 | 9.50 | 11.50 | 11.00 | 10.00 | 9.50 | 6.03 | 6.00 | 6.00 | 5.50 | 8.50 | 6.53 | 3.53 | 10.50 | 7.03 | 2.08 | 9.00 |
| 0056 | Corallina vancouveriensis |  |  | - | - |  |  |  |  |  | - | - | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | 51.50 | 39.00 | 25.00 | 38.50 | 43.50 | 11.50 | 36.00 | 41.00 | 29.00 | 25.00 | 39.00 | 48.50 | 35.00 | 33.50 | 41.00 | 37.50 | 28.00 |
| 0115 | Cryptopleura violacea |  | 3.50 |  | 0.03 | 0.55 | 0.03 | - | 3.53 | 3.00 | 1.05 | 1.53 | 8.50 | 7.50 | 4.50 | 0.05 | 2.03 | 1.05 |  |
| 0036 | Cystoseira osmundacea |  | 0.53 | 0.53 | 0.53 | 1.50 | 1.50 | 0.53 | 0.03 | 0.03 | 0.05 | 1.05 | 0.03 | 0.50 | 0.50 | 0.05 | 1.53 | 2.50 |  |
| 1189 | Delesseria decipiens |  | - | - | - | . | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | 1.50 | - | - | 0.03 | - | 0.03 | 6.00 | 8.50 | - | - | - | 0.03 | - | - | - | . |  |
| 0030 | Dictyoneurum californicum |  | - | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | , | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | 1.00 | 0.03 | - | - | . | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | 0.03 | 0.03 | - | 0.53 | 0.05 | 0.50 | 0.03 | 1.53 | 0.50 | 0.50 | - | - | - | - | - | 0.03 |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.05 | 1.03 | 0.08 | 1.53 | 0.08 | 0.03 | 0.05 | 0.05 | 0.08 | 0.03 | 0.55 | 1.03 | 0.05 | 0.58 | 0.58 | 0.10 |  |
| 0193 | Fauchea laciniata |  |  |  | - |  |  |  |  | - |  |  | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | 0.05 | 0.05 | - | 0.08 | 0.50 | 0.05 | 0.50 | 0.53 | 0.03 | 0.03 | 0.53 | 1.03 | 0.53 | 1.03 | 0.03 | 0.05 |  |
| 0073 | Gelidium coulteri |  | 㖪 |  | - | , |  |  |  |  | . | . |  |  | . 5 | . | , | 0.05 |  |
| 0074 | Gelidium pusillum |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | - | 0.50 | - | 0.08 | 1.03 | 0.50 | - | - | 0.03 | 0.50 | 0.50 | 0.03 | - | - | - | - |  |
| 0206 | Gelidium spp. |  | - | - | - |  | - | - | - | - | - | - | - | - | . | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | $0 \cdot$ | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | $\bigcirc$ | 0.03 | - | 0.05 | - | - | - | - | - |  | - | - | 0.08 | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | 0.03 | 0.03 | - | - | 1.53 | 8.50 | - | - | - | - | 0.03 | - | - | 0.55 | 0.03 |  |
| 0212 | Hymenena spp. |  | - | - | - | - | $\bigcirc$ | - | - | - | - | - | - |  | - | - |  | - |  |
| 0035 | Laminaria setchellii |  | 0.10 | 1.55 | 0.10 | 0.08 | 0.10 | 0.10 | 0.10 | 0.03 | 0.58 | 0.10 | 0.55 | 0.10 | 0.08 | 0.58 | 1.05 | 0.10 |  |
| 0233 | Laminariales |  | - | - | - | - | - | - | 0.05 | 0.03 | 0.03 | - | 0.05 |  | - |  | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ! | 14-Jul-81 | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 4-May-83 | 18-Jul-83 | 15-Sep-83 | 29-Nov-83 | 18-Jan-84 | 7-May-84 | 17.Jul-84 | 25-Sep-84 | 2-Jan-85 | 17-Apr-85 | 11-Jul-85 | 10-Sep-85 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  |  |  | - |  | - |  | - |  | - |  |  |  |  |  |  |  |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | $\cdot$ | - | - | - | - |  | - | - | - | - |  | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.05 | - | 0.03 | 0.08 | 0.05 | - | 0.55 | - | 0.03 | - | 0.08 |  | - | - | 0.10 | - | 0.05 |
| 3383 | Mazzeella splendens |  | 10.50 | 7.00 | 3.00 | 11.50 | 20.00 | 2.00 | 17.50 | 22.00 | 8.50 | 6.50 | 8.00 | 13.03 | 9.50 | 4.00 | 15.0 | 20.50 | 8.50 |
| 1014 | Melobesia mediocris |  | 0.08 | 0.08 | 0.10 | 0.10 | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.08 | 0.03 | 0.08 |  | 0.05 | 0.03 |  | 0.03 |
| 1242 | Membranoptera/Branchioglossum spp. |  |  |  |  |  |  | 0.03 |  |  |  |  | - |  |  |  |  |  |  |
| 0095 | Microcladia coulteri |  | 3.00 | 0.53 | 0.58 | 6.00 | 4.50 | 0.05 | 3.03 | 4.03 | 0.58 | 0.05 | 10.00 | 1.08 | 1.55 | 0.58 | 2.03 | 0.10 | 3.00 |
| 0153 | Neootilota spp. |  |  | 1.03 | 0.53 | 0.50 | 0.58 | 0.05 | 0.53 | 0.03 | 0.05 | - | 0.53 | 2.00 | 0.03 |  | 0.50 | 0.50 | 0.03 |
| 0041 | Nereocystis luetkeana |  | - | 0.05 |  | 0.05 | 0.03 |  | 0.05 | 0.53 | - |  | 0.03 |  |  |  |  |  |  |
| 1154 | Nienburgia andersoniana |  |  | - |  |  |  |  | - | - | - | - |  |  |  |  |  |  |  |
| 0096 | Opuntiella californica |  |  | - | - | - |  | 0.03 | - | - | - | - | - |  | 0.03 | 0.05 |  | - | 0.03 |
| 0184 | Osmundea spp. |  | 2.03 | 2.53 | 1.05 | 3.50 | 6.53 | 4.03 | 2.03 | 1.50 | 0.58 | 0.58 | 2.50 | 3.00 | 1.08 | 1.55 | 1.55 | 2.53 | 5.50 |
| 0199 | Phaeophyta |  | - | - | - | - | - | 0.08 | - | - | - |  |  |  |  |  |  |  |  |
| 1144 | Phycodrys spp. |  | - | - | - | - |  |  | - | - | - | - |  |  |  |  |  |  |  |
| 0135 | Phyllospadix spp. |  | 4.50 | 6.03 | 12.00 | 4.53 | 9.00 | 3.03 | 2.03 | 2.00 | 2.53 | 1.03 | 1.53 | 2.53 | 0.50 | 2.05 | 0.08 | 0.05 | 0.53 |
| 0203 | Pikea robusta |  | - | - | - | - |  | - |  | - |  |  | - |  |  |  |  |  |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - |  | - | - | - | - | - | - |  |  |  |  |
| 0118 | Polyneura latissima |  | - | 0.05 | 0.03 | - | - | 0.03 |  | 0.05 | - | - | 1.03 | 0.03 | 0.03 |  |  |  |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - |  |  |  | - |  | - | - |  | - |  |  |
| 0220 | Prionitis australis |  | 0.03 | - | - | - | - | - | - | - |  | 0.50 | 0.03 | - | - | - | - |  | 0.03 |
| 0106 | Prionitis spp. |  | 0.55 | 0.55 | 1.03 | 0.53 | 2.00 | 2.00 | 0.08 | 2.03 | 1.50 | 1.03 | 3.03 | 2.53 | 2.03 | 1.00 | 2.53 | 1.50 | 3.03 |
| 0221 | Ptercladiella caloglossoides |  | 0.10 | 0.55 | 1.05 | 0.08 | 0.10 | 0.03 | 0.55 | 0.05 | 0.08 | - | 0.08 | 0.05 | 0.08 | 0.05 | 0.05 | 1.08 | 0.05 |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - |  | - |  | - | - | - | - | - | - | - |  |  |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | 0.03 |  | - | - | - | - | - | - | - | - |  |  |
| 0042 | Pterygophora californica |  | 0.10 | 0.58 | 0.58 | 0.10 | 0.10 | 0.55 | 0.10 | 4.50 | 1.55 | 2.05 | 3.03 | 1.55 | 4.50 | 2.58 | 1.55 | - 0.10 | 5.53 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - |  | 0.03 | - | - | - | - |  |  |  |  | 0.03 |
| 0219 | Rhodophyta (uuv. blades) |  | - | - | - | - | - | 0.10 | - | - | - | 0.08 | 0.08 | - | - |  | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | 0.03 | - |  | - | - | - | - | - | - | - | - |  |  |  |
| 0159 | Rhodymenia spp. |  | - | - | 0.03 | 0.05 | 0.05 | 0.08 | 0.55 | 0.50 | 1.03 | 0.05 | 0.55 | 0.55 | 0.08 | 0.10 | 0.05 | 0.08 | 0.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | 1.05 | 0.03 | 1.05 | 2.50 | 0.53 | 0.08 | 1.53 | 0.08 | 0.05 | 0.08 | 2.03 | 1.00 | 0.05 | 1.00 | 1.55 | 0.53 | 0.08 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - |  |  | - | - | - | - | - |  |  |  |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | 0.10 | 0.05 | - | - | - | 0.03 | 0.03 |  | 0.05 | - |  |
| 0110 | Smithora naiadum |  | 2.50 | 0.08 | - | - | 0.08 | - |  |  | - | - | - | - | - | - |  | - |  |
| 0014 | Ulva spp. |  | 0.05 | 0.55 | 0.08 | 0.05 | 0.08 | 0.05 | 1.58 | 0.10 | 0.03 | - | 0.10 | 0.05 | 0.08 | 0.03 | 0.10 | 0.10 | 0.08 |
| 0057 | coralline crust |  | 29.00 | 44.00 | 52.50 | 51.00 | 23.00 | 58.00 | 31.00 | 56.50 | 54.50 | 60.50 | 49.50 | 39.00 | 53.00 | 58.00 | 29.50 | 42.50 | 54.00 |
| 1300 | filamentous red algae complex |  | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0167 | juv. articulated coralline algae |  | - | - | - | - | - | - |  | - | - | - | - | - | - |  | - |  |  |
| 0059 | non-coralline crust |  | 0.05 | 0.10 | 3.50 | 2.53 | 0.10 | 3.50 | 3.50 | 2.03 | 2.03 | 3.00 | 1.50 | 2.00 | 6.00 | 10.00 | 1.53 | 2.55 | 7.50 |



| Species Code (spcode) | Species | : | 6-Nov-85 | 28-Jan-86 | 9-Apr-86 | 25-Jul-86 | 12-Sep-86 | 21-Jan-87 | 12-May-87 | 15-Jul. 87 | 29-Sep-87 | 17-Nov-87 | 26-Apr-88 | 8-Jul-88 | 9-Sep-88 | 8-Feb-89 | 18-Apr-89 | 10-Aug-89 | 19-Oct-89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  | - | - |  | - |  | - |  |  | - | - |  | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.50 | 0.03 | - | 2.05 | 0.58 | 0.08 | 0.08 | 1.05 | 0.58 | 1.03 | 0.53 | 0.55 | 0.55 | 0.55 | 0.08 | 3.03 | 0.03 |
| 3383 | Mazzaella splendens |  | 3.00 | 1.00 | 0.53 | 16.00 | 10.00 | 1.55 | 5.50 | 8.50 | 4.05 | - | 1.08 | 4.00 | 5.50 |  | 1.50 | 2.55 | 0.03 |
| 1014 | Melobesia mediocris |  | - | - | - | - | 0.03 | - | - | - | - | - |  |  | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.10 | - | 0.03 | 0.08 | 0.08 | 0.08 | 0.58 | 16.50 | 1.05 | - | 0.10 | 0.05 | 2.05 | 1.08 | 3.50 | 12.50 | 0.55 |
| 0153 | Neootilota spp. |  | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.50 | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | 析 | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | 0.05 | - | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.05 | - | - | - | 5 | - | - | - |  |
| 0184 | Osmundea spp. |  | 3.00 | 0.55 | 0.53 | 2.55 | 0.10 | 0.10 | 4.00 | 4.00 | 2.55 | 1.50 | 4.50 | 6.00 | 5.50 | 9.50 | 7.00 | 22.50 | 12.00 |
| 0199 | Phaeophyta |  |  |  | - | - | - | - | - | - | . | - | - |  |  | - | - | - |  |
| 1144 | Phycodrys spp. |  |  |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0135 | Phylospadix spp. |  | 0.10 | 0.05 | 0.03 | 0.53 | 0.05 | 0.53 | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - |  | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - |  | - |  |
| 0118 | Polyneura latissima |  | 0.03 | 0.03 | - | - | - |  | 0.05 | 0.03 | - | - | - | - | - | - | 0.03 | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0220 | Prionitis australis |  | - |  | - | 0.03 | 0.50 | - | 0.03 | - | - | - | - | - | 0.03 | - |  | - |  |
| 0106 | Prionitis spp. |  | 3.05 | 3.03 | 3.03 | 5.50 | 2.50 | 6.00 | 6.50 | 7.50 | 10.50 | 11.50 | 10.00 | 5.50 | 7.50 | 11.50 | 5.50 | 22.50 | 21.00 |
| 0221 | Ptercladiella caloglossoides |  | 0.50 | 0.03 | 0.08 | 0.10 | 1.05 | 0.05 | 0.08 | 0.10 | 0.58 | 0.10 | 2.53 | 1.58 | 0.08 | 1.53 | 0.55 | - | 0.05 |
| 1115 | Pterochondria woodii var. woodii |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | 2.03 | 0.10 | 1.03 | 0.08 | 0.10 | 0.03 | 0.05 | - | - | - | - | - |  | - |  | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | 0.05 | 0.03 | - | - | 0.03 | - | - | 0.05 | 0.05 | 0.05 | - | 0.05 |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - |  | - | - | - | - | 0.50 | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - |  | - | 5 | ${ }^{-}$ | $\bigcirc$ | - | - | - | 5 | $\stackrel{-}{-}$ | - | - | $\stackrel{-}{-}$ |  |
| 0159 | Rhodymenia spp. |  | 0.03 | 0.08 | 0.03 | 0.05 | 0.55 | 0.55 | 0.08 | 0.55 | 0.10 | 0.55 | 0.53 | 1.55 | 0.58 | 0.50 | 1.05 | 4.50 | 7.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.10 | 0.08 | 0.55 | 3.53 | 0.05 | 0.55 | 4.00 | 0.53 | 1.53 | - | 0.55 | 0.03 | 1.03 | 2.00 | 2.53 | 4.00 | 0.53 |
| 1326 | Sargassum muticum |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | 0.08 | 0.53 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | - | - | 0.05 | 0.05 | 0.03 | - | 0.03 | 0.05 | - | - | 0.03 | - | 0.08 | 0.10 | 0.08 |  |
| 0057 | coralline crust |  | 43.00 | 37.00 | 52.00 | 34.50 | 26.00 | 42.00 | 39.50 | 62.00 | 41.50 | 52.50 | 45.00 | 56.50 | 56.50 | 52.50 | 54.50 | 34.50 | 54.50 |
| 1300 | filamentous red algae complex |  | 0.03 | - | - | 0.08 | 0.10 | - | - | - | 0.05 | - | . | - | 0.05 | - | - | - |  |
| 0167 | juv. articulated coralline algae |  |  | - | - |  | - |  | - | 0 | - | . | $\bigcirc$ | 5 |  | - | - | , |  |
| 0059 | non-coralline crust |  | 4.50 | 7.00 | 9.50 | 5.00 | 1.08 | 8.00 | 2.03 | 8.00 | 4.50 | 10.50 | 8.00 | 11.50 | 6.00 | 8.00 | 12.00 | 10.00 | 10.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

| Species |  | ¢ | $\begin{array}{r} 73 \\ \text { 12-Feb-90 } \end{array}$ | $\begin{array}{r} 74 \\ \text { 2-May-90 } \end{array}$ | $\begin{array}{r} 75 \\ \text { 18-Jul-90 } \end{array}$ | $\begin{array}{r} 76 \\ 25-\text { Oct-90 } \end{array}$ | $\begin{array}{r} 77 \\ 22-\text { Feb-91 } \end{array}$ | $\begin{array}{r} 78 \\ \text { 17-May-91 } \end{array}$ | $\begin{array}{r} 79 \\ \text { 4-Sep-91 } \end{array}$ | $\begin{array}{r} 80 \\ 24-0 c t-91 \end{array}$ | $\begin{array}{r} 81 \\ \text { 11-Mar-92 } \end{array}$ | $\begin{array}{r} 82 \\ \text { 28-May-92 } \end{array}$ | $\begin{array}{r} 83 \\ \text { 25-Aug-92 } \end{array}$ | $\begin{array}{r} 84 \\ \text { 6-Nov-92 } \end{array}$ | $\begin{array}{r} 85 \\ \text { 10-Mar-93 } \end{array}$ | $\begin{array}{r} 86 \\ \text { 9-Jun-93 } \end{array}$ | $\begin{array}{r} 87 \\ 25-\text { Aug- } 93 \end{array}$ | $\begin{array}{r} 88 \\ \text { 20-Oct-93 } \end{array}$ | $\begin{array}{r} 89 \\ \text { 29-Mar-94 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | 0.53 | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.50 | 0.03 | - | 0.05 | - | 0.03 | 0.03 | 0.03 | - | 1.00 | 0.05 | 0.03 | 0.53 | 0.53 | 0.50 | 0.58 | 0.03 |
| 1303 | Antithamnion/Pterothamnion spp.complex |  |  | - | - | - | - | - | - | 0.05 | - | 0.08 | - | - | - | 0.10 |  |  | 0.08 |
| 0245 | Bryopsis spp. |  | 0.03 | - | - | - |  | 0.03 | - | 0.03 | - |  | - | - | - |  | - |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 20.50 | 30.00 | 34.00 | 29.50 | 23.00 | 32.50 | 30.00 | 30.00 | 22.00 | 29.50 | 23.50 | 18.00 | 19.00 | 23.00 | 25.00 | 19.50 | 24.00 |
| 0185 | Callithamnion spp.PPleonosporium spp. |  |  | - |  |  |  | - | - | - | - | - |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.05 | - | 0.53 | 0.03 | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - |  |  |
| 0112 | Callophyllis spp. |  | 0.53 | 0.08 | 1.03 | - | 0.03 | 0.50 | 2.53 | 0.53 | - | 1.00 | 0.03 | - | - | 0.50 | - | - |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0077 | Chondracanthus canaliculatus |  | - | 0.05 | 0.50 | 0.05 | 0.03 | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - | - | 0.03 |
| 0125 | Chondracanthus corymbiferus |  | 9.50 | 19.50 | 30.50 | 15.00 | 9.50 | 19.50 | 24.00 | 6.50 | 8.00 | 16.00 | 11.00 | 4.00 | 3.50 | 12.50 | 13.00 | 5.00 | 6.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  | 0.50 | 0.50 |  | - | 0.05 | 0.08 | - | 0.05 | 2.53 | 2.55 | 1.03 | 1.00 | 0.50 |
| 1302 | Chrysophyta |  | 1.03 | 0.03 | - | 4.03 | 5.53 | 0.58 | - | 0.05 | 1.05 | - | - | - | 3.00 | 0.05 | 0.03 | - | 6.53 |
| 0010 | Cladophora spp. |  |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | 0.03 | - | - | - | 0.05 | - | - | 0.03 | 0.08 | 0.03 | 0.05 |
| 0055 | Corallina chilensis |  | 0.05 | 1.05 | 2.53 | 2.50 | 2.03 | 2.53 | 1.03 | 3.53 | 0.55 | 0.05 | 1.05 | 0.10 | 1.53 | 1.05 | 1.50 | - | 0.55 |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - |  |  | - |  |  | - |  |  |  |  |  |
| 0052 | Cryptopleura ruprechtiana |  | - | - | 0.53 | - | - | - | 0.50 | - | - | 0.50 | - | - |  |  |  |  |  |
| 0115 | Cryptopleura violacea |  | 42.00 | 68.50 | 49.00 | 35.50 | 55.00 | 59.00 | 37.00 | 35.50 | 50.50 | 65.50 | 49.00 | 12.00 | 32.00 | 53.50 | 54.00 | 25.50 | 47.50 |
| 0036 | Cystoseira osmundacea |  | 0.03 | - | 0.03 | 0.08 | 0.03 | 0.08 | 0.03 | 0.05 | 0.05 | 0.03 | - | 0.03 | 0.03 |  | 0.03 | 1.00 | 0.05 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - |  |  | - | - |  |  |  |  | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | 0.03 | 1.53 | - | - | 0.03 | 0.53 | - | - | - | - | - |  | 0.53 | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  |  | - | - | - | - | - |  |  | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.08 | 0.58 | 2.03 | 2.00 | 1.53 | 2.53 | 0.58 | 1.55 | 10.00 | 9.50 | 12.00 | 9.50 | 14.50 | 28.50 | 23.50 | 13.00 | 26.50 |
| 0193 | Fauchea laciniata |  |  |  |  |  |  | - |  | - |  | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | 1.55 | 0.53 | 3.53 | 1.05 | 0.03 | 1.03 | 2.03 | 0.55 | 0.55 | - | - | - | 0.03 | 0.55 | - | 0.50 | 0.05 |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0074 | Gelidium pusillum |  |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.55 | - | - |  |
| 0075 | Gelidium robustum |  | 1.03 | 1.03 | 0.53 | 2.53 | 3.05 | 2.05 | 1.03 | 4.50 | 4.03 | 2.53 | 6.55 | 5.00 | 5.00 | 8.50 | 4.53 | 5.50 | 9.50 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | 0.08 | - | - | 0.03 |
| 0109 | Grateloupia californica |  | - | - | - | - | - | 0.05 | - | - | - | - | - | - | - |  | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | 0.10 | 2.03 | 0.03 | 0.03 | 1.00 | 0.03 | - | 0.05 | 0.08 | - | - | - | 0.03 | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - |  |  | - |  | - | - | - | - | - | - | - | 0.50 | - |  |
| 0035 | Laminaria setchellii |  | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | - | - | - | - | - | - |  | 0.03 | - | - | - | - | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | : | 12-Feb-90 | 2-May-90 | 18-Jul-90 | 25-Oct-90 | 22-Feb-91 | 17-May-91 | 4-Sep-91 | 24-Oct-91 | 11-Mar-92 | 28-May-92 | 25-Aug-92 | 6-Nov-92 | 10-Mar-93 | 9-Jun-93 | 25-Aug-93 | 20-Oct-93 | 29-Mar-94 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella afinis |  |  |  |  | - | - | - | - | - | - | - | - | - | - |  |  | 1.00 |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0230 | Mazzaella rosea |  | 0.08 | 0.10 | 1.50 | 0.10 | 0.08 | 2.05 | 1.05 | 0.08 | 0.08 | 1.53 | 3.03 | 3.03 | 0.10 | 0.08 | 0.10 | - | 0.08 |
| 3383 | Mazzaella splendens |  | - | 1.03 | 0.50 | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | 2.03 | 18.00 | 3.00 | 0.10 | 13.00 | 1.05 | 0.58 | 0.05 | 0.05 | - | - | - | 0.03 | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - - | - | - | - |  |  |  |
| 1154 | Nienburgia andersoniana |  | - | 1.00 | - | 0.03 | 0.53 | 0.03 | - | 1.00 | 3.03 | 6.00 | 0.08 | 0.53 | 5.53 | 10.00 | 6.00 | 0.53 | 7.53 |
| 0096 | Opuntiella californica |  | - | - | ${ }^{-}$ | - | - | - | - |  | 0.03 | - | - | - | - | - | ${ }^{-}$ |  |  |
| 0184 | Osmundea spp. |  | 3.05 | 6.50 | 8.53 | 11.00 | 3.03 | 2.53 | 20.50 | 12.50 | 2.55 | 4.00 | 1.00 | 0.03 | 0.03 | 1.03 | 0.05 | 1.00 | 0.03 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |  |
| 1144 | Phycodrys spp. |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0118 | Polyneura latissima |  | 0.05 | - | - | - | - | 0.53 | - | - | - | - | - | - | - | 0.50 | - | - |  |
| 0099 | Porphyra spp. |  |  | $0 \cdot$ | 5 | - | - | - | - | - | - | - | - | $\bigcirc$ | $\bigcirc$ | - | $0 \cdot$ | - |  |
| 0220 | Prionitis australis |  | 0.03 | 0.03 | 0.50 | - | 0.05 | 0.03 | 0.53 | - | - | 1.00 | - | 0.05 | 0.03 | 0.03 | 0.03 | - |  |
| 0106 | Prionitis spp. |  | 23.50 | 7.50 | 21.50 | 27.00 | 16.50 | 15.50 | 23.50 | 22.00 | 12.50 | 14.00 | 8.50 | 26.00 | 7.00 | 12.00 | 14.00 | 7.50 | 6.00 |
| 0221 | Ptercladiella caloglossoides |  | 0.55 | 0.05 | 0.10 | 0.08 | - | - | - | 0.03 | 0.05 | 0.05 | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | 0.03 |  |  | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | 0.03 | 0.08 | 0.03 | - | - | 0.05 | 0.08 | 0.03 | - | 0.08 | 2.03 | 1.55 | 0.03 | 0.03 | 2.03 |
| 0042 | Pterygophora californica |  | - | - |  | - | - | - | - | . - | $\bigcirc$ | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | 0.03 | - | - | - | - | 0.05 | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | $\bigcirc$ | - | - | 5 | - | - | - | 5 | - | $\stackrel{-}{-}$ | 5 | $\stackrel{-}{-}$ | 5 | 0 | - | - |  |
| 0159 | Rhodymenia spp. |  | 3.00 | 4.53 | 2.50 | 2.50 | 1.58 | 5.50 | 1.03 | 5.50 | 4.53 | 3.50 | 4.50 | 2.50 | 4.03 | 9.00 | 1.05 | 1.50 | 8.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 | 0.55 | 0.55 | 0.05 | 0.03 | 0.55 | - | 0.05 | 0.03 | - |  | - | - | 0.53 | - | - | 0.05 |
| 1326 | Sargassum muticum |  |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  |  |  | - |  | - | - | - | - | - | - | $\bigcirc$ | $\stackrel{-}{-}$ | - |  | - | $\square$ |  |
| 0014 | Ulva spp. |  | 0.03 | 0.10 | 1.03 | 0.08 | 0.08 | 0.08 | 0.08 | 0.10 | 0.08 | 0.08 | 0.05 | 0.10 | 0.08 | 0.55 | 0.55 | 0.08 | 1.03 |
| 0057 | coralline crust |  | 37.50 | 48.50 | 52.50 | 44.50 | 38.00 | 46.00 | 36.50 | 61.50 | 49.50 | 59.50 | 48.50 | 52.50 | 42.00 | 42.00 | 38.00 | 57.00 | 52.50 |
| 1300 | filamentous red algae complex |  | - | 0.50 | 3.00 | 0.03 | 0.55 | - | 0.08 | 0.08 | 0.08 | 0.08 | 0.53 | 1.55 | 3.53 | 6.03 | 1.55 | 2.50 | 3.50 |
| 0167 | juv. articulated coralline algae |  | - |  |  |  |  | - |  | $\cdots$ | - |  | - | - | - | - | - |  |  |
| 0059 | non-coralline crust |  | 4.53 | 6.00 | 4.03 | 7.50 | 4.00 | 5.50 | 2.55 | 6.00 | 2.53 | 6.00 | 3.00 | 6.50 | 5.00 | 3.03 | 1.53 | 7.50 | 4.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Points



| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | : | 2.Jun-94 | 12-Aug-94 | 9-Nov-94 | 29-Mar-95 | 21-Jun-95 | 7-Mar-96 | 1-Nov-96 | 17-Mar-97 | 15-Oct-97 | 12-May-98 | 1-Oct-98 | 11-Mar-99 | 1-Jun-99 | 20-Aug-99 | 27-Oct-99 | 14-Apr-00 | 29-Jun-00 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  |  |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 1.08 | - | 0.05 | - | 2.50 | 0.10 | 1.00 | 0.10 | 0.10 | 0.08 | - | 0.03 | - | - | 0.10 | 0.03 |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.03 | 0.05 | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 1154 | Nienburgia andersoniana |  |  | 1.03 | 5.50 | 6.00 | 4.53 | 4.50 | 0.55 | 1.00 | 3.03 | - | 0.53 | 0.53 | 0.03 | 0.03 | 0.05 | 0.53 |  |
| 0096 | Opuntiella californica |  | $\stackrel{-}{-}$ | - | - | - | - | - | - |  | - | - | - | - | - |  |  |  |  |
| 0184 | Osmundea spp. |  | 0.50 | - | 0.55 | - | 0.53 | 1.50 | 4.00 | 1.03 | 0.55 | - | - | - | - | 0.03 | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0220 | Prionitis australis |  | - | 0.50 | - | - | - | - | 1.00 | - | - | - | - | 1.50 | - | 0.53 | 0.50 | - |  |
| 0106 | Prionitis spp. |  | 9.50 | 22.50 | 16.00 | 6.50 | 3.00 | 4.00 | 8.50 | 3.00 | 5.00 | 2.05 | 3.03 | 7.50 | 6.50 | 4.53 | 5.00 | 3.50 | 5.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | : | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | 0.03 | 0.05 | 1.00 | 0.53 | 0.53 | 0.05 | 0.53 | - | - | 0.05 | - | 3.50 | 0.10 | 1.03 | 2.53 |
| 0042 | Pterygophora californica |  | - | - | - - | - | - | - | - | - - | - | - | 0.03 | 0.05 | 0.03 | - | - | - |  |
| 0187 | Pugetia firma . |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 5.00 | 12.50 | 1.53 | 6.50 | 5.50 | 3.50 | 6.50 | 1.00 | 2.00 | 1.03 | 0.58 | 4.50 | 2.00 | 2.00 | 1.05 | 5.00 | 1.55 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 |  | - | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | - | - | - | - | 0.03 | 0.03 | 0.03 |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | 0.03 | - | 0.03 | 0.03 | 0.08 | - | 0.55 | - | 0.55 | 0.58 | 2.05 | 0.08 |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - |  |
| 0110 | Smithora naiadum |  | - |  | - | - | - | - | - |  | - | - | - | - | - | - |  | - |  |
| 0014 | Ulva spp. |  | 0.10 | 0.03 | 0.08 | - | 0.08 | 0.05 | 0.08 | 0.03 | 0.55 | 0.58 | - | 0.08 | - | - | 0.05 | 0.10 |  |
| 0057 | coralline crust |  | 38.00 | 42.50 | 39.00 | 50.00 | 33.50 | 39.50 | 44.00 | 27.00 | 45.50 | 41.00 | 49.00 | 44.00 | 41.50 | 46.50 | 47.00 | 43.50 | 71.00 |
| 1300 | filamentous red algae complex |  | 1.53 | 1.55 | 0.58 | 3.53 | 9.00 | 4.00 | 0.05 | 1.50 | 2.00 | 15.50 | - | - | - | - | 0.05 | 0.10 | 0.55 |
| 0167 | juv. articulated coralline algae |  |  |  |  |  |  |  |  |  | - |  | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 2.00 | 0.08 | 3.00 | 4.55 | 1.08 | 2.53 | 2.50 | 1.58 | 5.00 | 1.03 | 1.55 | 4.50 | 2.03 | 2.05 | 1.55 | 0.08 | 2.00 |



| Species Code (spcode) | Species | ؛ | 7-Sep-00 | 2-Nov-00 | 23-Mar-01 | 1-Jun-01 | 28-Aug-01 | 21-Jan-02 | 27-Mar-02 | 24-May-02 | 16-Aug-02 | 25-Oct-02 | 7-Mar-03 | 2-May-03 | 7-Aug-03 | 7-Jan-04 | 30-Mar-04 | 26-May-04 | 23-Aug-04 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  | - | - | - |  | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | 0.08 | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - | 0.05 | 0.03 |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | 1.05 | - | - | - | - | 0.50 | - | - | - | - | - | 0.03 | - | 0.05 | 0.50 | - | 0.03 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | 0.05 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | 1.03 | 1.00 | 0.05 | - | 0.50 | - | - | - | - | 1.00 | - | - |  |
| 0106 | Prionitis spp. |  | 4.00 | 5.50 | 5.50 | 4.00 | 8.00 | 3.50 | 0.53 | 3.03 | 2.50 | 0.55 | 0.50 | 0.05 | 2.50 | 4.00 | 2.50 | 3.50 | 9.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - |  | - | - |  | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | 1.05 | 1.03 | 0.08 | 4.50 | 1.53 | 0.50 | 0.03 | 0.58 | 0.50 | 0.03 | 0.55 | 4.00 | 0.05 | - | 0.03 |
| 0042 | Pterygophora californica |  | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 1.05 | 3.50 | 0.03 | - | 4.00 | 4.50 | 0.50 | 2.03 | 0.05 | 3.03 | 1.50 | 1.53 | 3.50 | 2.00 | 0.05 | 0.03 |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | 0.03 | - | - | - | - | - | - | 0.03 | 0.05 | - | - | - | 0.03 |
| 1326 | Sargassum muticum |  | - | 0.58 | 0.55 | 2.03 | 0.58 | 5.00 | 4.50 | 3.00 | 0.03 | 2.00 | 1.00 | 0.50 | 8.00 | 20.50 | 9.00 | 7.00 | 9.53 |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | 0.05 | 0.10 | 0.10 | 0.03 | 0.10 | 3.50 | - | 0.08 | 0.03 | 0.03 | 0.10 | 0.08 | 0.05 | 0.53 | 0.05 |
| 0057 | coralline crust |  | 42.50 | 28.50 | 59.50 | 71.00 | 81.00 | 75.00 | 76.00 | 36.00 | 37.50 | 71.50 | 41.00 | 63.50 | 74.50 | 74.00 | 45.50 | 24.00 | 45.00 |
| 1300 | filamentous red algae complex |  |  | - | 9.00 | 2.03 | 0.08 | 0.10 | 0.58 | 0.05 | 0.03 | 0.08 | 3.03 | 0.03 | 0.53 | - | 1.55 | - |  |
| 0167 | juv. articulated coralline algae |  | - | - | - |  |  | - | - | - | - |  |  | - | - | - ${ }^{-}$ | - | $\stackrel{-}{-}$ |  |
| 0059 | non-coralline crust |  | 3.00 | 0.58 | - | 1.03 | 0.05 | 2.00 | - | 1.00 | 1.58 | 0.53 | 2.53 | 4.00 | 0.50 | 1.50 | 2.03 | 1.50 | 2.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

Spe
Code
(spcode) Species

| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  |  | - |  | - | - | - | - | - |  |  |  |  |  |  |  |
| 1549 | Acrosorium ciliolatum | 12.50 | 0.10 | 0.08 | 1.08 | 12.00 | 22.00 | 11.50 | 6.00 | 20.00 | 30.00 | 5.00 | 9.50 | 5.00 | 20.50 | 0.05 | 3.03 | 6.00 |
| 0126 | Ahnfeltiopsis leptophylla | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis | 0.03 | - | 0.03 | 1.03 | - | 0.03 | - | 0.03 | - | 0.05 | 1.00 | 2.00 | 0.53 | 0.03 | 0.05 | - | 0.03 |
| 1303 | Antithamnion/Pterothamnion spp.-complex | - | - | - | 0.03 | - | 0.03 | - |  | 0.03 | - | - | 0.05 | - | 0.05 | - | 0.03 | 0.08 |
| 0245 | Bryopsis spp. | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex | 22.00 | 14.50 | 16.50 | 17.50 | 6.00 | 9.00 | 12.50 | 5.50 | 11.00 | 9.50 | 7.50 | 17.00 | 8.50 | 16.50 | 15.00 | 10.00 | 11.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. | - | - | - | - | - | - | - |  | - | - | - | - | . |  |  | , |  |
| 0064 | Callophyllis flabelluata | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - | - | - |  |
| 0112 | Callophyllis spp. | $\stackrel{-}{-}$ | - | $\bigcirc$ | - | 0.50 | 5 | $\bigcirc$ | 0.50 | 0.05 | - | 0.03 | 0.05 |  |  | - | - |  |
| 0239 | Chlorophyta (filamentous) | 0.05 | - | 0.03 | - | - | 0.03 | 0.03 | 0.08 | 0.05 | 2.05 | 0.03 | 0.03 | 0.05 | 0.03 | 1.55 | 0.03 | 0.05 |
| 0077 | Chondracanthus canaliculatus | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus | 0.05 | 0.05 | 0.08 | 1.50 | 0.53 | 0.03 | 1.03 | 0.10 | 0.05 | 0.05 | 0.53 | 1.50 | 1.53 | 0.08 | 3.50 | 1.53 | 0.08 |
| 1305 | Chondracanthus harveyanus/spinosus | - | - | - | - | 0.05 | 0.03 |  |  |  | - | - | - |  | - | 0.03 | - |  |
| 1302 | Chrysophyta | 0.05 | 23.00 | 21.50 | 36.50 | 1.53 | 10.00 | 33.00 | 37.00 | 24.00 | - | 7.50 | 0.03 | - | - | - | 0.03 |  |
| 0010 | Cladophora spp. | - | - |  | - |  | - | - | - | - | - | - | - | - |  | - |  |  |
| 1137 | Codium fragile subsp. Californicum | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 | 0.05 |
| 0146 | Colpomenia spp. | 0.03 | 0.08 | 6.00 | 12.00 | 0.55 | 1.53 | 3.53 | - | 0.08 | 2.55 | 2.50 | 2.03 | 0.03 | 0.08 | 2.55 | 0.03 | 0.03 |
| 0055 | Corallina chilensis | 0.08 | - | 0.08 | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | 0.53 | - | - | - | 0.03 | - | - | 0.03 |  |
| 0056 | Corallina vancouveriensis | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |  |
| 0052 | Cryptopleura ruprechtiana | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 0115 | Cryptopleura violacea | - | 4.00 | 5.50 | 6.00 | 8.50 | 1.50 | 15.50 | 0.03 | 0.05 | 0.55 | 12.50 | 0.03 | - | 0.05 | 0.53 | - | 0.03 |
| 0036 | Cystoseira osmundacea | 3.50 | 5.53 | 6.00 | 9.50 | 5.00 | 7.50 | 11.50 | 13.00 | 5.50 | 5.00 | 12.50 | 12.50 | 7.00 | 4.00 | 12.00 | 11.00 | 10.00 |
| 1189 | Delesseria decipiens | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata | - | - | 0.05 | - | - | - | - | - | - | - | 0.03 | 0.53 | - | - | 2.00 | 0.50 |  |
| 0030 | Dictyoneurum californicum | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |  |
| 0190 | Dictyota binghamiae | - | - | - | 0.05 | - | 1.08 | - | - | - | 0.08 | - | 0.03 | - | 0.58 |  | - |  |
| 0238 | Ectocarpales | - | - | - | - | - | - | - | - | - | 8.50 | 28.00 | 1.03 | 4.53 | 11.50 | 0.08 | 4.50 | 11.00 |
| 0031 | Egregia menziesii | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | . |  |
| 0071 | Erythrophylum delesserioides | - | - | - | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex | 3.53 | 2.55 | 2.05 | 0.55 | 5.00 | 6.50 | 6.00 | 4.00 | 2.03 | 2.03 | 6.53 | 2.50 | 1.55 | 3.03 | 2.55 | 1.50 | 1.03 |
| 0193 | Fauchea laciniata | - | - | - | - | - | - | - | , | - | - |  | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum | - | - | - | 0.50 | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | 0.03 |
| 0073 | Gelidium coulteri | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0074 | Gelidium pusillum | - | - | - | - | $\stackrel{-}{-}$ | - | - | $\stackrel{-}{-}$ | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 0.53 | 0.03 | 0.03 | 1.00 | 0.50 | 0.05 | 0.05 | 0.50 | 1.50 | 2.53 | 1.55 | 2.50 | 0.05 | 1.50 | 2.00 | 1.50 | 1.03 |
| 0206 | Gelidium spp. |  | - |  | . |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - |  | - | - | - | . | - | - | - | - | . | - | - | . | . |  |
| 0109 | Grateloupia californica | - | - |  | - | - | - | - | - | - | - | - | - | - | . | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | - | - | - | $\bigcirc$ |  | - | $0 \cdot$ | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex | - | 0.05 | 2.05 | 0.05 | 0.03 | - | 0.08 | - | - | 0.08 | 3.55 | 0.53 | 0.03 | - | 1.03 | 0.03 |  |
| 0212 | Hymenena spp. | - | - |  | - | - | - | - | - | - | - | 05 | 0 | - | - | . | - |  |
| 0035 | Laminaria setchellii | - | - | - | - | - | - | - | - | - | - | 0.05 | 0.03 | - | - | 0.03 | 0.03 |  |
| 0233 | Laminariales | 05 | - | - | 0 | 03 | 0 | 05 | 0 | $\stackrel{-}{-}$ | 0 | - | 58 | 10 | 10 | 5 | - |  |
| 1640 | Macrocystis pyrifera | 0.05 | - | - | 0.03 | 0.03 | 0.08 | 1.05 | 0.03 | 0.53 | 0.08 | 0.53 | 0.58 | 0.10 | 0.10 | 1.55 | 3.00 | 3.03 |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - |  | - |  | - |  | - | - | - |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | $\mathfrak{}$ | 4-Feb-05 | 25-Apr-05 | 15-Jun-05 | 11-Aug-05 | 28-Nov-05 | 24-Feb-06 | 23-May-06 | 18-Aug-06 | 31-Oct-06 | 7-Mar-07 | 10-May-07 | 3-Aug-07 | 30-Oct-07 | 27-Feb-08 | 29-May-08 | 5-Aug-08 | 30-Oct-08 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  | - | - | - | - | - | - |  | - |  | - | - | - | - | - | - |  |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | $\bigcirc$ |
| 0230 | Mazzaella rosea |  | - | - | 0.03 | 0.08 | 2.03 | 0.03 | 0.03 | - | - | - | 0.05 | 0.03 | 0.08 | - | - | - | 0.03 |
| 3383 | Mazzaella splendens. |  | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - | - | - |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | 2.00 | - | - | - | 3.50 | - | 0.50 | - | 0.03 | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ |  |
| 0184 | Osmundea spp. |  | - | - | 0.05 | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - | 0.03 |  |
| 0199 | Phaeoohyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | - | - | - | - | - | - |  | - | ${ }^{-}$ | $\stackrel{-}{-}$ | ${ }^{-}$ |  |
| 0106 | Prionitis spp. |  | 4.00 | 0.08 | 4.53 | 10.00 | 5.03 | 4.00 | 5.03 | 9.50 | 9.00 | 6.53 | 11.50 | 6.00 | 11.00 | 5.50 | 9.50 | 11.00 | 11.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - |  | - | - | - | - | - | - |  |  | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 1.55 | - | - | 0.55 | - | 0.55 | 0.03 | - | 0.03 | - | - | 0.03 | - | - | - | 0.50 | 0.05 |
| 0042 | Pterygophora californica |  | - | - | ... - |  | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (uvv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptium plumosum |  | - | - | - | - | - | - | - | $0 \cdot$ | $0 \cdot$ | $0{ }^{-}$ | $0 \cdot$ | $\bigcirc$ | $\bigcirc$ | - | - | $\bigcirc$ |  |
| 0159 | Rhodymenia spp. |  | - | 0.03 | - | 0.03 | - | 0.03 | - | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 | 0.05 | - | 2.00 | 0.03 | 0.05 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | 0.03 | - | $\bigcirc$ | 0.03 | - | - | ${ }^{-}$ | 0.05 |  | - | 0.03 | $00^{-}$ | - | $\bigcirc$ |  |
| 1326 | Sargassum muticum |  | 4.00 | 7.50 | 8.50 | 15.00 | 8.00 | 3.03 | 8.00 | 1.05 | 3.53 | 3.50 | 8.00 | 1.03 | 4.00 | 6.00 | 4.50 | 0.05 | 1.03 |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.08 | 0.08 | 0.10 | 0.10 | 0.03 | 0.08 | 0.03 | 0.05 | 0.03 | 0.08 | 0.58 | 0.08 | 0.03 | 0.03 | - |  |
| 0057 | coralline crust |  | 50.50 | 29.50 | 42.00 | 25.50 | 44.00 | 32.00 | 35.00 | 46.00 | 40.00 | 32.50 | 29.50 | 50.00 | 49.00 | 41.00 | 47.50 | 52.00 | 44.50 |
| 1300 | filamentous red algae complex |  | - | 23.50 | 3.00 | - | 0.10 | 20.50 | 0.55 | 1.05 | 0.05 | 23.50 | 1.05 | 11.00 | 0.03 | 3.05 | 0.55 | 3.00 | 1.50 |
| 0167 | juv. articulated coralline algae |  | - | - | - | - |  |  |  | - | - | - | - | - |  |  | - | - |  |
| 0059 | non-coralline crust |  | 6.00 | 1.58 | 0.55 | 0.58 | 5.53 | 1.55 | 0.03 | 2.03 | 4.00 | 0.03 | 0.08 | 3.00 | 4.03 | 2.00 | 1.03 | 3.00 | 1.50 |


| Species | Species | ! | 14416-Jan-09 | $\begin{array}{r} 145 \\ \text { 22-May-09 } \end{array}$ | $\begin{array}{r} 146 \\ \text { 12-Aug-09 } \end{array}$ | $\begin{array}{r} 147 \\ \text { 9-Oct-09 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 1-Feb-10 } \end{array}$ | $\begin{array}{r} 149 \\ \text { 13-May-10 } \end{array}$ | $\begin{array}{r} 150 \\ \text { 3-Aug-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 15-Oct-10 } \end{array}$ | $\begin{array}{r} 152 \\ 7 \text { Feb-11 } \end{array}$ | $\begin{array}{r} 153 \\ \text { 22-Apr-11 } \end{array}$ | $\begin{array}{r} 154 \\ 5-A u g-11 \end{array}$ | $\begin{array}{r} 155 \\ \text { 18-Oct-11 } \end{array}$ | $\begin{array}{r} 156 \\ 22 \text {-Feb-12 } \end{array}$ | $\begin{array}{r} 157 \\ \text { 17-May-12 } \end{array}$ | $\begin{array}{r} 158 \\ \text { 13-Aug-12 } \end{array}$ | 15915-Nov-12 | $\begin{array}{r} 160 \\ \text { 1-Feb-13 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Code (spcode) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  |
| 1549 | Acrosorium ciliolatum |  | 9.50 | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | 0.05 | 0.05 | 0.05 | - | - | . | - |  | - | - | - | . | - | - |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | 0.05 | - | 0.03 | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 9.50 | 11.50 | 5.50 | 6.50 | 2.53 | 0.58 | 0.08 | 0.08 | 0.10 | 0.10 | 0.10 | 0.08 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | 0.08 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0064 | Callophyllis flabeilulata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0112 | Callophyllis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0239 | Chlorophyta (filamentous) |  | 0.05 | 0.03 | 0.05 | 0.55 | - | - | - | - | - | - | 9.03 | - | - | - | - | 0.03 |  |
| 0077 | Chondracanthus canaliculatus |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 0.03 | 0.05 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | 0.03 | 1.53 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1137 | Codium fragile subsp. Californicum |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | 0.03 | 0.05 | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | - | - | - | - | - | . - | - | - | - | - | - | - | - | - | - | - |  |
| 0115 | Cryptopleura violacea |  | 1.05 | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0036 | Cystoseira osmundacea |  | 6.00 | 5.00 | 0.08 | 0.05 | 0.03 | - | - | - | - | - | - | 1.03 | - | - | - | - |  |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - ${ }^{-}$ | - | $\bigcirc$ | ${ }^{-}$ | $0^{-}$ | - | - | $0{ }^{-}$ | - | $\bigcirc$ | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | 19.50 | 4.53 | 3.03 | 1.50 | 0.05 | - | - | 0.03 | - | 0.05 | 18.53 | 18.00 | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophylum delesserioides |  | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1304 | Farlowia/Pikea spp.-complex |  | 3.00 | 4.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0074 | Gelidium pusillum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 1.00 | 1.00 | 0.53 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - | - | - | - | - | - - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | 1.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | ! | 16-Jan-09 | 22-May-09 | 12-Aug-09 | 9-Oct-09 | 1-Feb-10 | 13-May-10 | 3-Aug-10 | 15-0ct-10 | 7-Feb-11 | 22-Apr-11 | 5-Aug-11 | 18-Oct-11 | 22-Feb-12 | 17-May-12 | 13-Aug-12 | 15-Nov-12 | 1-Feb-13 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0199 | Pheeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | 11.00 | 2.00 | 0.05 | 0.50 | - | - | - | - | - | - | - | 0.05 | - | - | - | - |  |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (iuv. blades) |  | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 0.53 | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | , | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | 5.00 | 0.03 | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | 0.05 | - |  | - | - | - |  | - | - | - | 1.03 | - | - | - | - |  |
| 0057 | coralline crust |  | 38.50 | 51.50 | 43.00 | 44.00 | 44.00 | 13.50 | 40.00 | 24.50 | 42.50 | 43.00 | 35.00 | 38.00 | 46.50 | 23.00 | 12.53 | 50.00 | 51.50 |
| 1300 | flamentous red algae complex |  | 6.00 | 0.55 | 0.03 | 0.05 |  |  |  |  |  | - | - | - | - | - | - | - |  |
| 0167 | juv. articulated coralline algae |  |  |  |  |  |  |  |  |  |  | - |  | ${ }_{0}-$ | 5 | - |  | - |  |
| 0059 | non-coralline crust |  | 0.05 | 1.03 | 4.00 | 5.53 | 4.53 | 4.55 | 1.53 | 0.10 | 0.10 | 0.58 | 0.08 | 0.53 | 1.55 | 1.08 | 0.58 | 0.55 | 1.05 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species | Species |  |  | $162$ |  | 164 |  |  | $\begin{array}{r} 167 \\ \text { 6-Nov-14 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ! | 23-Apr-13 | 23-Jul-13 | 18-Oct-13 | 7-Jan-14 | 2-May-14 | 28-Jul-14 |  |
| Code |  |  |  |  |  |  |  |  |  |
| (spcode) |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - |  |  |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 0.10 | 0.10 | 0.10 | 0.10 | 0.08 | 0.10 | 0.10 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | - | - | - | - | - | - |  |
| 0064 | Callophyllis flabellulata |  | - | - | - | - | - | - |  |
| 0112 | Callophyllis spp. |  | - | - | - | - | - | - |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | 0.05 | - | 0.03 | 0.03 | 0.53 |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | - | - | - | - | - | - |  |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | 12.50 |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | - | - | - | - | - | - |  |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | - | - | - | - | - | - |  |
| 0115 | Cryptopleura violacea |  | - | - | - | - | - | - |  |
| 0036 | Cystoseira osmundacea |  | - | - | - | - | - | - |  |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | - | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | 0.05 | - | 0.55 |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - |  |
| 0071 | Erythrophylum delesserioides |  | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | - | - | - | - | - | - |  |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - |  |
| 0074 | Gelidium pusillum |  | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | - | - | - | - | - | - |  |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | - | - | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ؛ | 23-Apr-13 | 23-Jul-13 | 18-Oct-13 | 7-Jan-14 | 2-May-14 | 28-Jul-14 | 6-Nov-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0102 | Mazzaella affinis |  | - | - | - | - | - | - |  |
| 0081 | Mazzaella leptorhynchos |  | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - | - | - |  | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - |  |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - |  | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | - | - | - | - | - | - |  |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | - | - | - | - | - | - |  |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - |  |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 45.00 | 54.50 | 50.50 | 38.00 | 52.00 | 48.50 | 49.00 |
| 1300 | filamentous red algae complex |  | - | - | - | - | - | - | 0.03 |
| 0167 | juv. articulated coralline algae |  | - | - | - | - | - | - |  |
| 0059 | non-coralline crust |  | 1.50 | 0.08 | 1.05 | 3.03 | 3.00 | 1.53 | 0.05 |

## Subtidal Line Contact - Survey Invertebrate Abundance (\% Cover for 7 m squared). - North Diablo Cove NDC 3.3 m

## Sampling code: 6 = Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | Survey: | $\begin{array}{r} 2 \\ 27-S e p-76 \end{array}$ | 18-Mar-77 | 4 | 5 | 7 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 17 | 19 | 21 | 25 | 26 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey Date: |  |  | 23-Jun-77 | 6-Oct-77 | 10-May-78 | 26-Jun-78 | 1-Sep-78 | 17-Nov-78 | 16-Feb-79 | 16-May-79 | 22-Aug-79 | 15-Nov-79 | 29-Jan-80 | 27-May-80 | 12-Sep-80 | 13-May-81 | 14-Jul-81 |
|  |  | Sampling Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0699 | Didemnum/Trididemnum spp. | 6 | - | - | - | - | - | - | - | - | . - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0389 | Pista spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . - | - |  |
| 0480 | tunicates, compound/social | 6 | - | - | - | - | - | - | - | - | - | - | - - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abu

| Sampling code: 6 = Coverage Based on \# of Col |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  |  | 28 | 30 | 31 | 32 | 37 | 38 | 39 | 40 | 41 | 43 | 44 | 45 | 47 | 49 | 50 | 51 | 52 | 53 |
|  |  | ! | 3-Nov-81 | 23-Mar-82 | 11-May-82 | 21-Jul-82 | 4-May-83 | 18-Jul-83 | 15-Sep-83 | 29-Nov-83 | 18-Jan-84 | 7-May-84 | 17-Jul-84 | 25-Sep-84 | 2-Jan-85 | 17-Apr-85 | 11-Jul-85 | 10-Sep-85 | 6-Nov-85 | 28-Jan-86 |
| Code (spcode) |  | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | 1.50 | 3.50 | 3.50 |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0318 | Serpulorbis squamigerus |  | - - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |

## Subtidal Line Contact - Survey Invertebrate Abu

## Sampling code: $6=$ Coverage Based on \# of Col

## Species

 (spcode) Species
0394 Balas
0699 Didemnum/Trididemnum spp.
0735 Dhidernum/Tridide IIfm spp
0389 Phragmatopoma califor
0492 Porifera (encrusting)
0318 Serpulorbis squamigerus
0318 Serpulorbis squamigerus
0480 tunicates, compound/social
0.50

| - | - | - | - | - | - |
| ---: | ---: | :--- | :--- | :--- | :--- |
| - | - | - | - | - | - |
| - | 0.50 | - | - | - | - |
| 0.50 | - | - | - | 0.50 | - |
| - | - | - | - | - | - |
| 0.50 | - | - | - | - | - |
| - | - | - | - | - | - |

## Subtidal Line Contact - Survey Invertebrate Abu

## Sampling code: $6=$ Coverage Based on \# of Coı

Species
Code
$\begin{array}{rrrrrrrr}76 & 77 & 78 & 79 & 80 & 81 & 82 & 83 \\ \leqslant & \text { 25-Oct-90 } & \text { 22-Feb-91 } & \text { 17-May-91 } & \text { 4-Sep-91 } & \text { 24-Oct-91 } & \text { 11-Mar-92 } & \text { 28-May-92 }\end{array}$ 25-Aug-92
$\begin{array}{rr}84 & 85 \\ \text { ov-92. } & \text { 10-Mar-93 }\end{array}$
$\begin{array}{rrrrr}86 & 87 & 88 & 89 & 90 \\ \text { 2-Jun-93 } & \text { 25-Aug-93 } & \text { 20-Oct-93 } & \text { 29-Mar-94 } & \text { 2-Jun-94 }\end{array}$
$\begin{array}{rr}90 & 91 \\ \text { 12-Aug-94 }\end{array}$
$\begin{array}{r}92 \\ \hline\end{array}$
$\begin{array}{r}93 \\ \hline \text { ar-95 }\end{array}$
(spcode) Species
$\begin{array}{ll}0394 & \text { Balanus spp. } \\ 0699 & \text { Didemnum/Trididemnum spp }\end{array}$
0699 Didemnum/Trididemnum sp
0735 Phragmatopoma californica
0492 Porifera (encrusting)
$\begin{array}{ll}0318 & \text { Porifera (encrusting) } \\ 0310 \text { Sis squamigerus }\end{array}$
0318 Serpulorbis squamigerus
0480 tunicates, compound/social

## Subtidal Line Contact - Survey Invertebrate Abu

## Sampling code: $6=$ Coverage Based on \# of Col



## Subtidal Line Contact - Survey Invertebrate Abu

| Sampling code: $6=$ Coverage Based on \# of Col |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  |  | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 |
|  |  | ! | 21-Jan-02 | 27-Mar-02 | 24-May-02 | 16-Aug-02 | 25-Oct-02 | 7-Mar-03 | 2-May-03 | 7-Aug-03 | 7-Jan-04 | 30-Mar-04 | 26-May-04 | 23-Aug-04 | 4-Feb-05 | 25-Apr-05 | 15-Jun-05 | 11-Aug-05 | 28-Nov-05 | 24-Feb-06 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | 2.00 | 1.50 | 1.50 | - | 0.50 | 0.50 | - | - | 1.00 | - | - | - | - | - | - | - |  |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abu

## Sampling code: $6=$ Coverage Based on \# of Col

Species
Code

(spcode) Species
$\begin{array}{ll}0394 & \text { Balanus spp. } \\ 0699 & \text { Didemnum/Trididemnum spp }\end{array}$
0735 Dhinumu/ rididemnum spp
$\begin{array}{ll}0389 & \text { Phragmatopoma californica } \\ 0389\end{array}$
0492 Porifera (encrusting)
0492 Porifera (encrusting)
$\begin{array}{ll}0318 & \text { Serpulorbis squamiger } \\ 0507 & \text { bryozoa (encrusting) }\end{array}$
0480 tunicates, compound/social

| Subtidal Line Contact - Survey Invertebrate Abu |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of Coı |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 151 $15-O c t-10$ | 152 | [ $\begin{array}{r}153 \\ \text { 22-Apr-11 }\end{array}$ | [ $\begin{array}{r}154 \\ \text { 5-Aug-11 }\end{array}$ | 155 18-Oct-11 | [ $\begin{array}{r}156 \\ \text { 22-Feb-12 }\end{array}$ | $\begin{array}{r} 157 \\ \text { 17-Mav-12 } \end{array}$ | $\begin{array}{r} 158 \\ \text { 13-Auq-12 } \end{array}$ | $\begin{array}{r} 159 \\ \text { 15-Nov-12 } \end{array}$ | 160 1-Feb-13 | $\begin{array}{r} 161 \\ \text { 23-Abr-13 } \end{array}$ | $\begin{array}{r} 162 \\ \text { 23-Jul-13 } \end{array}$ | $\begin{array}{r} 163 \\ \text { 18-Oct-13 } \end{array}$ | $\begin{array}{r} 164 \\ \text { 7-Jan-14 } \end{array}$ | $\begin{array}{r} 165 \\ \text { 2-Mav-14 } \end{array}$ | $\begin{array}{r} 166 \\ \text { 28-Jul-14 } \end{array}$ | $\begin{array}{r} 167 \\ \text { 6-Nov-14 } \end{array}$ |
| Species Code |  | ! | 15-Oct-10 | 7-Feb-11 | 22-Apr-11 | 5-Aug-11 | 18-Oct-11 | 22-Feb-12 | 17-May-12 | 13-Aug-12 | 15-Nov-12 | 1-Feb-13 | 23-Apr-13 | 23-Jul-13 | 18-Oct-13 | 7-Jan-14 | 2-May-14 | 28-Jul-14 | 6-Nov-14 |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | . 0.50 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Sampling code: 6= Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 6 | 7 | 8 | 9 | 11 | 13 | 14 | 15 | 16 | 17 | 19 | 21 | 25 |  |
| Species |  | Survey Date: | 4-Nov-76 | 17-Mar-77 | 30-Mar-78 | 31-May-78 | 10-Jul-78 | 7-Sep-78 | 3-Jan-79 | 5-Apr-79 | 9.Jul-79 | 14-Sep-79 | 14-Nov-79 | 30-Jan-80 | 28-May-80 | 18-Sep-80 | 21-May-81 | 16-Jul-81 |
| $\begin{aligned} & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | Sampling Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1549 | - Acrosorium ciliolatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | 0.05 | - | - | - | - | 0.50 | - | 0.50 | - | - | - | 0.03 | 1.00 |
| 0047 | Amplisiphonia pacifica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. | 6 | - | , - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex | 6 | 44.50 | 44.00 | 30.50 | 35.50 | 41.00 | 46.50 | 39.00 | 37.50 | 51.00 | 47.50 | 38.00 | 39.50 | 39.00 | 44.00 | 43.00 | 44.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. | 6 | - | - | - | - | - | - |  |  | - | - | - | - |  |  | - |  |
| 0064 | Callophyllis flabelulata | 6 | - | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.10 | 0.55 | 1.03 | 0.08 | 0.08 | 0.08 | 0.05 | 0.08 | 0.10 |
| 0112 | Callophyllis spp. | 6 | 3.03 | 4.50 | 1.58 | 3.53 | 3.03 | 2.55 | 1.03 | 1.50 | 5.00 | 3.00 | 2.03 | 0.08 | 7.50 | 1.55 | 2.03 | 3.50 |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0125 | Chondracanthus corymbiferus | 6 | 4.00 | 5.00 | 4.50 | 10.00 | 6.03 | 3.50 | 5.00 | 6.50 | 5.00 | 7.00 | 4.50 | 2.53 | 8.00 | 7.50 | 7.00 | 12.00 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | 0.03 | - | - | - | - | - | - |  | - |  | - | - | - | - | - |  |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - |  |
| 1137 | Codium fragile subsp. Californicum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - | - | - | 0.10 | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. | 6 | - | - | - | - | - | - | - | - | - | $\stackrel{-}{ }$ | - | - | - | - | - |  |
| 0055 | Corallina chilensis | 6 | - | ${ }^{-}$ | 0.50 | 0.03 | $\square^{\circ}$ | 1.00 | ${ }^{-}$ | ${ }^{-}$ | 1.00 | 0.50 | 1.00 | 0.03 | 0.03 | 1.00 | 0.05 | 0.03 |
| 0052 | Cryptopleura ruprechtiana | 6 | - | 24.50 | 20.50 | 30.00 | 40.00 | 40.00 | 30.50 | 33.50 | 36.00 | 36.50 | 31.00 | 20.50 | 38.50 | 50.00 | 43.00 | 44.50 |
| 0115 | Cryptopleura violacea | 6 | - | - | - | - |  | 0.50 | 0.50 | 0.03 | 1.00 | 0.03 | 0.50 | - | - | - | - |  |
| 0036 | Cystoseira osmundacea | 6 | 6.50 | 5.03 | 4.50 | 3.03 | 2.53 | 3.53 | 3.00 | 3.50 | 1.00 | 6.50 | 3.50 | 6.53 | 10.00 | 4.00 | 7.50 | 9.00 |
| 0235 | Delesseriaceae (juv.) | 6 | 26.50 | - | 1.50 | - | - | - | - | 1.05 | - | - | - | - | - | $\bigcirc$ | - |  |
| 1830 | Desmarestia ligulata | 6 | - | 0 | - | 0 | 0.50 | - | 5. | $\bigcirc$ | 5 | 7.5 | - | $0 \cdot$ | 0.03 | 0.03 |  |  |
| 0030 | Dictyoneurum californicum | 6 | 6.50 | 5.00 | 5.00 | 8.00 | 9.00 | 4.00 | 5.50 | 9.00 | 5.50 | 7.50 | 4.53 | 4.03 | 7.50 | 7.53 | 7.50 | 6.50 |
| 0190 | Dictyota binghamiae | 6 | - | 0.03 | - | 0.53 | - | - | - | 0.03 |  | - | - | - | - | - | - |  |
| 0238 | Ectocarpales | 6 | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii | 6 | - | - | - | 0.03 | 0.03 | - | 0.03 | 0.03 | - | - | - | - | - | - | - |  |
| 3326 | Endarachne/Petalonia-complex | 6 | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ |  |
| 0071 | Erythrophyllum delesserioides | 6 | 0.03 | - | - | 0.50 | 0.03 | 0.03 | - | - | 0.03 | - | 0.53 | - | 0.08 | 0.08 | 0.03 |  |
| 1304 | Farlowia/Pikea spp.-complex | 6 | 0.03 | 0.03 | 0.03 | 0.08 | 0.03 | 0.05 | 0.53 | 0.03 | 0.53 | - | 0.05 | 0.10 | 0.05 | 0.55 | 0.50 | 0.03 |
| 0193 | Fauchea laciniata | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0142 | Fryeella gardneri | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum | 6 | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 6 | - | 0.05 | - | - | - | - | - | - | - | - | - | 0.03 | 0.05 | 0.03 | 0.05 | 0.50 |
| 0206 | Gelidium spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | - | - | - | 0.03 | - | - | 0.03 | 0.03 | - | - | - | 0.05 | 0.03 | 0.08 |  |
| 0152 | Halymenia/Schizymenia spp.complex | 6 | - | - | - | - | 0.50 | - | - | - |  | - | - | - | 0.50 | - | - |  |
| 0212 | Hymenena spp. | 6 | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii | 6 | 1.00 | - | 1.08 | 0.55 | 4.03 | 2.55 | 2.03 | 1.03 | 1.00 | 0.53 | 2.05 | 1.53 | 1.05 | 0.05 | 1.05 | 1.03 |
| 0233 | Laminariales | 6 | - | - | 0.05 | - | - | - | - | 0.03 | 0.03 | - | - | - | 0.03 | - | - |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - |  |
| 0133 | Maripelta rotata | 6 | - | - | - | - | 0.50 | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0090 | Mazzaella oregona | 6 | - | - | - | - | 0.03 | - |  | - | - | - | - | - | - |  | - |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | Survey Date: Sampling Code | 4-Nov-76 | 17-Mar-77 | 30-Mar-78 | 31-May-78 | 10-Jul-78 | 7-Sep-78 | 3-Jan-79 | 5-Apr-79 | 9-Jul-79 | 14-Sep-79 | 14-Nov-79 | 30-Jan-80 | 28-May-80 | 18-Sep-80 | 21-May-81 | 16-Jul-81 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 3383 | Mazzaella splendens | 6 | 1.50 | 0.03 | - | 1.03 | 0.08 | 0.50 | 1.03 | 0.53 | 1.53 | 0.58 | 0.58 | - | 1.05 | 0.58 | 0.03 | 0.03 |
| 1242 | Membranoptera/Branchioglossum spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | 0.03 |  |
| 0095 | Microcladia coulteri | 6 | 0.50 | 0.58 | - | 0.58 | 0.08 | 0.58 | 0.05 | 1.05 | 0.53 | 0.58 | 0.08 | 0.05 | 0.55 | 0.10 | 3.00 | 0.55 |
| 0153 | Neootilota spp. | 6 | 0.03 | - | - | 0.03 | - | 0.50 | - | - | 0.05 | - | - | 0.03 | 0.03 | 0.03 |  |  |
| 0041 | Nereocystis luetkeana | 6 | 0.50 | - | - | 0.03 | 0.05 | 0.03 | - | 0.03 | - | - |  | - | 0.03 | 0.03 |  |  |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 0096 | Opuntiella californica | 6 | 0.53 | 0.05 | - | . | - | - | 0.03 | 1.00 | - | 0.03 | 0.53 | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 |
| 0184 | Osmundea spp. | 6 | 0.03 | 0.05 | 0.03 | - | 1.03 | 0.50 | 1.05 | 0.55 | 0.03 | 0.50 | 0.08 | 0.10 | 0.55 | 1.05 | 0.55 | 0.08 |
| 0199 | Phaeophyta | 6 |  | . |  | - |  |  | , | - | - | - |  | - | - | . | - |  |
| 1144 | Phycodrys spp. | 6 | - | . | - | 0.05 | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - |  |
| 0135 | Phyllospadix spp. | 6 | 1.00 | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta | 6 |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium paciicum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima | 6 | - | 0.53 | 0.53 | 3.50 | 3.00 | 2.53 | 0.53 | 1.05 | 1.50 | 0.53 | 0.03 | 0.03 | 3.03 | 0.58 | 2.50 | 0.55 |
| 0220 | Prionitis australis | 6 | 1.53 | 2.00 | 1.05 | - | - | 1.00 |  | - | - | - | - |  | - | - | 0.03 | 0.05 |
| 0106 | Prionitis spp. | 6 | 0.50 | 0.03 | 3.00 | 2.03 | 0.55 | 1.03 | 1.03 | 0.58 | 2.00 | 2.05 | 1.03 | 0.55 | 2.03 | 1.05 | 0.53 | 1.00 |
| 0221 | Ptercladiella caloglossoides | 6 | 0.50 | 4.50 | 1.00 | - | 1.03 | 1.03 | 0.53 | 0.05 | 0.10 | 0.05 | 0.08 | 0.03 | 0.10 | 0.08 | - | 0.03 |
| 1115 | Pterochondria woodii var. woodii | 6 | - | - |  | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0192 | Pterosiphonia dendroidea | 6 | 1.00 | 0.10 | - | 0.50 | 0.03 | - | - | 0.08 | - | - | 0.03 | - | - | - | - |  |
| 0042 | Pterygophora californica | 6 | 1.03 | . | 1.05 | 0.58 | 0.55 | 3.00 | 2.50 | 1.05 | 3.05 | 2.53 | 2.03 | 3.03 | 1.05 | 1.55 | 1.03 | 0.10 |
| 0187 | Pugetia firma | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) | 6 | 1.00 | 0.50 | 0.50 | 1.55 | 0.03 | - | 0.50 | 0.03 | 0.55 | 0.50 | 0.50 | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum | 6 | - | 0.03 |  |  |  | - | - | - | - | - | , | - | - | - | - |  |
| 0159 | Rhodymenia spp. | 6 | - | 5.03 | 3.55 | 3.50 | 0.55 | - | 2.05 | 3.55 | 1.03 | 0.50 | 0.03 | 3.05 | 2.08 | 0.05 | 2.53 | 2.53 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | 0.53 | 0.03 | 0.05 | 0.05 | 0.03 | 0.03 | 0.53 | 0.05 | 0.03 | 0.05 | 0.05 | 0.03 | - | - | 0.03 |
| 1326 | Sargassum muticum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa | 6 | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - |  |
| 0014 | Ulva spp. | 6 | 1.50 | - | - | 0.53 | 0.08 | 0.10 | 0.08 | 0.03 | - | - | 0.03 | - | 0.05 | 0.05 | - |  |
| 0057 | coralline crust | 6 | 43.50 | 51.50 | 53.50 | 47.00 | 61.50 | 59.00 | 53.00 | 48.50 | 49.00 | 53.50 | 60.50 | 54.50 | 47.00 | 52.00 | 45.00 | 46.50 |
| 1300 | filamentous red algae complex | 6 | 6.00 | 3.53 | 0.03 | 0.53 | 1.00 | 0.03 | 2.50 | 0.10 | 0.50 | - | 0.03 | - | 0.08 | - | 0.05 | 0.05 |
| 0059 | non-coralline crust | 6 | 1.50 | 2.00 | 1.55 | 1.53 | 0.03 | 0.55 | 2.53 | 0.03 | 1.00 | 0.58 | 1.03 | 0.10 | 0.10 | 0.58 | 0.05 | 0.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Point

|  |  |  | 28 |  |  |  | 33 |  |  | 39 |  | 41 | 43 |  | 45 | 47 | 48 | 49 | 50 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | ¢ | 21-Oct-81 | 22-Mar-82 | 13-May-82 | 9.Jul-82 | 24-Sep-82 | 4-May-83 | 11-Jul-83 | 16-Sep-83 | 9-Nov-83 | 24-Jan-84 | 18-May-84 | 13-Jul-84 | 19-Sep-84 | 3-Jan-85 | 8-Mar-85 | 7-May-85 | 28-Jun-85 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - |  | - |  | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | - | - | - | 0.03 | - | - |  | - |  | - | 1.00 | - |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - |  | - | - |  |  |  | - | - | - |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - | - | - | - | - |  | - |  | - |  | - |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - |  |  | - | - |  | - | - | - | - | - | - | - |
| 0049 | Calliarthron/Bossiella spp.complex |  | 42.00 | 38.00 | 35.50 | 41.50 | 48.00 | 31.00 | 34.00 | 39.50 | 23.50 | 33.50 | 32.00 | 39.00 | 37.50 | 28.00 | 42.00 | 41.00 | 41.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |  |  |  |  |  |  |  | - |  |  | - | - | - | - |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.58 | 0.08 | 1.05 | 0.05 | 1.53 | 0.05 | 0.05 | 0.03 | 0.05 | 0.10 | 0.08 | 0.10 | 0.08 | 0.08 | 1.05 | 0.55 | 0.05 |
| 0112 | Callophyllis spp. |  | 1.03 | 0.55 | 8.00 | 9.50 | 9.00 | 0.55 | 3.53 | 4.50 | 3.50 | 2.03 | 1.05 | 4.50 | 3.50 | 1.03 | 1.05 | 5.00 | 2.03 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - |  |  | . | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0125 | Chondracanthus corymbiferus |  | 7.00 | 6.50 | 7.00 | 11.00 | 8.00 | 3.55 | 12.00 | 10.00 | 7.50 | 5.00 | 7.00 | 12.00 | 11.00 | 9.00 | 8.00 | 10.50 | 14.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | 0.03 |  |  | - | . | . | - | - | 0.03 | 0.03 | . | - | - | - | - |  |
| 1302 | Chrysophyta |  |  | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | . | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | 0.08 | - | - | - | - | - |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |  |
| 0055 | Corallina chilensis |  | 0.05 | 0.50 | 0.03 | 0.05 | - | 0.03 | 0.53 | 0.03 | 0.08 | 0.05 | 0.05 | 0.55 | 0.03 | 0.05 | 0.50 | 0.53 | - |
| 0052 | Cryptopleura ruprechtiana |  | 36.00 | 29.50 | 47.00 | 49.00 | 44.00 | 13.50 | 42.50 | 50.50 | 36.00 | 30.00 | 46.00 | 52.50 | 51.00 | 37.50 | 35.00 | 43.50 | 50.00 |
| 0115 | Cryptopleura violacea |  |  |  | - |  | - |  | 0.03 | 0.53 | 0.05 | 0.05 | 0.58 | 1.50 | 0.03 | 0.03 | 0.03 | 0.58 | 0.03 |
| 0036 | Cystoseira osmundacea |  | 5.53 | 8.50 | 8.50 | 15.00 | 6.50 | 2.00 | 5.50 | 8.00 | 7.00 | 6.03 | 7.50 | 6.00 | 9.50 | 8.00 | 11.00 | 5.00 | 16.50 |
| 0235 | Delesseriaceae (juv.) |  |  | - | - |  | - | - |  |  |  | - | - | . | . | - | . | - |  |
| 1830 | Desmarestia ligulata |  |  | - | - |  | - | - | 4.00 | 4.50 | 1.50 | - | 0.05 | 1.00 | - | - | - | 0.03 |  |
| 0030 | Dictyoneurum californicum |  | 5.50 | 5.50 | 5.03 | 5.50 | 6.03 | 3.53 | 5.50 | 8.03 | 6.00 | 4.53 | 7.00 | 6.00 | 5.50 | 2.50 | 4.50 | 8.00 | 5.00 |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | 0.03 | - | - | - | 0.50 | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3326. | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - |
| 0071 | Erythrophylum delesserioides |  | $\cdot$ | - | 0.50 | - | 0.05 | 0.03 | 0.50 | 0.03 | 0.03 | - | 0.55 | 0.03 | 0.50 | - | - | 0.03 | 0.03 |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.03 | 0.10 | 0.08 | 0.03 | 0.03 | 0.03 | 0.53 | 0.03 | 0.03 | - | 0.03 | 0.03 | 0.08 | 0.05 | 0.08 | 0.08 | 0.55 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - |  | - |  | - | - | - | . | - |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0075 | Gelidium robustum |  | 0.03 | - | - | 0.03 | - | 0.03 | - | 0.03 | 0.08 | 0.03 | - | 0.03 | 0.05 | 0.03 | 0.53 | 0.50 | - |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  | - | - |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | 0.03 | - | - | 0.03 | - | 0.03 | - | - | 0.05 | - | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.10 | 0.05 |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | - | - | 0.05 | 0.50 | - | 0.03 | - | - | - | 0.03 | - | 0.03 | 0.03 | - |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - | - |
| 0035 | Laminaria setchellii |  | 0.53 | 0.58 | 0.58 | 0.08 | 1.55 | 1.05 | 0.10 | 0.58 | 0.10 | 0.10 | 0.10 | 2.00 | 0.58 | 0.10 | 0.58 | 2.55 | 0.10 |
| 0233 | Laminariales |  | - | - | - | - | - | - | 0.03 | 0.03 | - | - | 0.03 | 0.03 | - |  |  | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0090 | Mazzaella oregona |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |


| Species Code (spcode) | Species | ! | 21-Oct-81 | 22-Mar-82 | 13-May-82 | 9-Jul-82 | 24-Sep-82 | 4-May-83 | 11-Jul-83 | 16-Sep-83 | 9-Nov-83 | 24-Jan-84 | 18-May-84 | 13-Jul-84 | 19-Sep-84 | 3-Jan-85 | 8-Mar-85 | 7-May-85 | 28-Jun-85 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  |  |  |  |  |  |  | 1.05 |  | 0.10 | 0.08 | 0.03 | - |  |  |  | 0.03 |  |
| 3383 | Mazzaella splendens |  | 0.58 | - | 0.53 | 0.08 | 2.00 | 0.03 | 1.00 | 1.08 | 1.03 | 0.08 | 3.50 | 2.53 | 3.03 | 0.55 |  | 1.03 | 0.55 |
| 1242 | Membranoptera/Branchioglossum spp. |  |  | - |  | - | - | - | - | - |  |  |  |  |  | 0.03 | 0.03 | 0.03 | - |
| 0095 | Microcladia coulteri |  | 0.10 | 0.08 | 1.03 | 0.55 | 0.08 | - | 1.53 | 0.10 | 0.08 | 0.10 | 0.10 | 2.55 | 1.05 | 0.08 | 0.10 | 1.05 | 0.05 |
| 0153 | Neoptilota spp. |  | 0.03 | 0.53 | 0.03 | 0.05 | 0.03 | 0.03 | - | 0.03 | 0.03 |  |  | 0.03 | 0.53 |  | 0.05 | 0.05 |  |
| 0041 | Nereocystis luetkeana |  | 0.03 | - | - | 0.03 | - | - | 0.05 | - |  | - | - | - | - | - |  | - |  |
| 1154 | Nienburgia andersoniana |  |  | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - |  |
| 0096 | Opuntiella californica |  | 1.03 | 1.03 | 0.05 | 0.03 | 0.05 | 0.03 | 0.03 | - | 0.53 | 0.03 | 0.50 | 0.53 | 0.03 | 0.03 | 0.05 | 1.00 | 0.03 |
| 0184 | Osmundea spp. |  | 0.05 | 0.08 | 0.05 | 0.03 | 1.00 | - | 0.53 | - | 0.03 | 0.05 | 0.05 | 0.55 | 1.00 | 0.10 | 1.05 | 0.58 | 1.03 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - |  | - |  | 0.03 | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima |  | 0.03 | 2.00 | 1.03 | 0.08 | 1.03 | 0.10 | 4.50 | 3.53 | 1.05 | 0.03 | 3.03 | 3.05 | 0.58 | - | 0.53 | 2.53 | 0.03 |
| 0220 | Prionitis australis |  | 1.50 | 0.55 | 1.00 | 0.05 | 1.00 | 1.50 | 0.53 | 0.53 |  | 0.05 | 0.53 | 0.50 | 0.03 | 0.03 | - | 1.00 | 0.03 |
| 0106 | Prionitis spp. |  | 1.53 | 0.55 | 0.05 |  | 1.55 | 1.00 | 0.03 | 0.58 | 1.08 | 0.55 | 1.05 | 3.50 | 1.00 | 0.08 | 2.03 | 3.05 | 2.03 |
| 0221 | Ptercladiella caloglossoides |  | 0.03 | - | - | 0.05 | - | - | 0.03 | 0.03 |  |  |  | 0.05 | 0.05 | - | 0.05 | 0.03 |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | 0.03 | - | - | - | - | - | - |  | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - |  | - | - | - | - | - |  | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | 3.50 | 1.08 | 1.53 | 0.10 | 2.03 | 0.58 | 2.53 | 1.05 | 0.10 | 0.58 | 0.10 | 6.03 | 4.50 | 2.03 | 2.58 | 2.53 | 0.58 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | 0.03 |  |  |  |  | - | - |  |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | 0.03 | 1.50 | - | - | - | - |  | 0.03 | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | 0.03 | - | $\checkmark$ | - | - | - | - | - | - | - | - |  | - | - | - | - |
| 0159 | Rhodymenia spp. |  | 1.53 | 2.00 | 5.03 | 6.50 | 2.03 | 1.55 | 6.05 | 5.53 | 3.55 | 1.53 | 5.53 | 3.05 | 4.03 | 4.50 | 2.55 | 4.05 | 5.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 | 0.05 | 0.05 | - | 0.03 | 0.03 | 0.53 | 0.03 | 0.03 | 0.05 | 0.08 | 0.03 | 0.05 | 0.05 | 0.03 | 1.03 |
| 1326 | Sargassum muticum |  | - |  | - | - | - | - | - | - | - | - | - | - | - - | - | - | - | - |
| 0155 | Scinaia confusa |  |  |  | - | - | - | - | 1.58 | 0.08 | 0.08 | - | 0.03 | - | - | - | - | - | - |
| 0014 | Ulva spp. |  | 0.08 | - | - | 0.03 | - | - | 1.05 | 0.58 | 1.03 | - | - | 0.10 | 0.10 | 0.05 | 0.03 | 0.08 | - |
| 0057 | coralline crust |  | 60.00 | 51.50 | 44.00 | 52.00 | 56.00 | 46.50 | 38.50 | 39.00 | 44.00 | 59.00 | 54.00 | 54.50 | 58.50 | 55.50 | 58.50 | 53.00 | 28.50 |
| 1300 | filamentous red algae complex |  | - | 0.03 |  | 0.03 | 0.05 |  | 3.05 | 0.05 | 0.08 | 0.05 | 0.05 | 0.58 | 0.03 | - | 0.03 | 0.03 |  |
| 0059 | non-coralline crust |  | 1.03 | 0.08 | 0.03 | 0.08 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | - | 1.53 | 1.05 | 0.08 | 2.00 | 1.53 | 1.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

| Sampling code: 6 = Coverage Based on \# of Contact Point |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 51 | 52 | 55 | 56 | 57 | 58 | 61 | 62 | 63 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| Species |  | ¢ | 5-Sep-85 | 5-Nov-85 | 9-Apr-86 | 15-Jul-86 | 22-Sep-86 | 17-Nov-86 | 29-Apr-87 | 20-Jul-87 | 29-Sep-87 | 12-Feb-90 | 20-Apr-90 | 2-Jul-90 | 4-Oct-90 | 8-Jan-91 | 7-May-91 | 4-Sep-91 | 30-Oct-91 |
| Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\frac{\text { (spcode) }}{0013}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  | - | - | - |  |
| 0981 | Ahnfettiopsis linearis |  | - | 0.05 | 0.05 | 0.53 | 1.03 | 0.05 | - | 0.03 | 1.03 | 0.53 | 0.03 | 0.53 | 0.58 | 0.03 | 0.05 | 3.00 | 0.05 |
| 0047 | Amplisiphonia pacifica |  | 0.03 |  |  |  |  | - |  |  |  |  |  |  |  | - |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | 0.03 | - | - | - | - | - |  | - | - | - |  | 0.10 |  | 0.03 | 0.10 |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 38.50 | 33.00 | 31.50 | 38.00 | 38.00 | 30.50 | 48.00 | 36.00 | 35.50 | 36.00 | 34.50 | 42.00 | 34.50 | 28.50 | 36.00 | 44.00 | 30.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.03 |
| 0064 | Callophyllis flabelluata |  | 0.08 | 0.08 | 0.10 | 0.53 | 0.08 | 0.05 | 1.53 | 0.08 | 0.08 | 0.08 | 0.05 | 0.03 | - | - | 0.05 | 0.55 | 0.05 |
| 0112 | Callophyllis spp. |  | 4.50 | 0.58 | 0.53 | 4.50 | 0.08 | 0.08 | 1.50 | 2.53 | 0.10 | 1.03 | 3.00 | 6.00 | 0.55 | 2.50 | 0.53 | 1.03 |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 9.00 | 9.50 | 4.03 | 24.00 | 17.00 | 6.50 | 16.50 | 24.00 | 10.00 | 7.00 | 13.50 | 27.50 | 17.50 | 11.00 | 13.00 | 23.50 | 15.50 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | 0.50 | 0.03 | - | - | 0.53 | - | - | - | - | 0.50 | - |  | 0.53 | 0.50 |  |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 |  | 0.08 | 0.08 |  | 0.03 |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |
| 0146 | Colpomenia spp. |  | - | - | - | - | 0.05 | - | 0.03 | - |  |  |  | 0.03 | - | - | - | - | 0.03 |
| 0055 | Corallina chilensis |  | 0.50 | 0.05 | 0.53 | 0.08 | 0.53 | 0.03 | 0.53 | 0.03 | 0.53 | 0.03 | 0.50 | - | - | 0.08 | 0.03 | 0.03 |  |
| 0052 | Cryptopleura ruprechtiana |  | 46.50 | 40.00 | 15.00 | 44.50 | 46.00 | 32.00 | 43.50 | 51.00 | 38.00 | 13.50 | 23.00 | 25.00 | 19.00 | 1.50 | 9.00 | 25.50 | 12.00 |
| 0115 | Cryptopleura violacea |  | 0.03 | 0.03 | 0.03 | 5.50 | 7.50 | 1.55 | 17.50 | 5.53 | 16.00 | 26.00 | 49.50 | 26.00 | 10.00 | 38.00 | 52.50 | 6.50 | 8.00 |
| 0036 | Cystoseira osmundacea |  | 10.00 | 6.00 | 3.53 | 4.50 | 5.50 | 9.00 | 4.50 | 7.00 | 8.00 | 0.05 | 1.03 | 0.53 | 0.05 | 0.08 | 0.10 | 1.58 | 0.08 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | $\bigcirc$ | - | - |  | - |  | - | $\bigcirc$ | - | $\bigcirc$ | - | $\bigcirc$ | - |  |
| 1830 | Desmarestia ligulata |  |  | $5^{-}$ | $0 \cdot$ | 0.03 |  | - |  | - | - | - | 0.10 | 7.00 | 0.03 | - | 0.03 | 1.55 |  |
| 0030 | Dictyoneurum californicum |  | 5.50 | 2.50 | 0.03 | 1.50 | 1.00 | 0.03 | 0. | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | 0.03 | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 |
| 3326 | Endarachne/Petalonia-complex |  | $\bigcirc$ | - | - | $\bigcirc$ | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | 0.03 | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - | $\cdots$ |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.08 | 0.10 | 0.55 | 1.05 | 2.50 | 0.55 | 1.55 | 2.00 | 2.53 | 1.55 | 1.05 | 1.05 | 1.00 | 2.05 | 2.05 | 7.00 | 8.00 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |  |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | $\bigcirc$ | $\bigcirc$ | $0 \cdot$ |  | - | - | - | $\stackrel{-}{-}$ | - | - | - |
| 0075 | Gelidium robustum |  | - | - | 0.08 | - | 0.05 | 0.03 | 0.03 | 0.05 | 0.08 | 1.05 | 0.55 | 0.58 | 0.58 | 2.00 | 1.55 | 1.55 | 2.03 |
| 0206 | Gelidium spp. |  | - | - | - | - |  | - |  | - |  |  |  | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | 0.03 | - | 0.03 | - | - | - | 0.03 | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - |  | - |  | - | - | - | - | - | - | - | - | - | - |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | 0.03 | 0.03 | 0.05 | - | 0.05 | $\bigcirc$ | - | - | - | 0.03 | - | - | - | - | - |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | 0.05 | - | 2.00 | 0.03 | - | 1.50 | 0.05 | - | 0.03 | 1.03 | 0.08 | - | 0.03 | 0.53 | 0.03 | 0.03 |
| 0212 | Hymenena spp. |  | 0.50 | - | - | - | - | $\stackrel{-}{-}$ | - | - | - |  | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 0.10 | 0.58 | 0.58 | 0.53 | 0.05 | 0.03 | 0.03 | - | - | - | - | 0.03 | - | - | - | 0.03 | 0.03 |
| 0233 | Laminariales |  | - | - | - | - | 0.50 | - | - | - | 0.03 | - | 0.03 | 0.03 | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | ؛ | 5-Sep-85 | 5-Nov-85 | 9-Apr-86 | 15-Jul-86 | 22-Sep-86 | 17-Nov-86 | 29-Apr-87 | 20-Jul-87 | 29-Sep-87 | 12-Feb-90 | 20-Apr-90 | 2-Jul-90 | 4.Oct-90 | 8-Jan-91 | 7-May-91 | 4-Sep-91 | 30-Oct-91 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  |  |  |  | 0.58 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 | 0.03 | 0.03 |  | 0.05 | 0.03 | 0.50 |
| 3383 | Mazzaella splendens |  | 1.03 | 1.03 | 0.08 | 6.00 | 1.00 | 0.58 | 3.00 | 4.50 | 1.03 | - | 1.00 | 0.05 | 0.03 | - |  | 1.00 | 0.03 |
| 1242 | Membranoptera/Branchioglossum spp. |  |  |  | 0.03 |  |  | - |  | - |  | - |  | - |  |  |  |  |  |
| 0095 | Microcladia coulteri |  | 0.10 | 0.58 | 0.03 | 1.53 | 0.10 | 0.08 | 0.55 | 0.58 | 2.03 | 0.55 | 5.00 | 0.10 | 0.10 | 0.08 | 3.03 | 5.00 | 3.50 |
| 0153 | Neoptilota spp. |  | 0.10 | 0.03 | 0.50 | 0.03 | - | - | - |  |  |  |  |  |  |  |  |  |  |
| 0041 | Nereocystis luetkeana |  | . | - | - | - | - | - | - | - |  | - | - |  |  |  |  |  | - |
| 1154 | Nienburgia andersoniana |  | $-$ | - | - | $-$ | - | - | - | - |  | - |  | 0.03 | - | 1.00 |  | - | 0.53 |
| 0096 | Opuntiella californica |  | 0.03 | 0.08 | - | 0.05 | 0.05 | 0.03 | 0.03 | 0.53 | 0.05 |  | 0.50 | 0.03 | 0.05 |  |  | 0.05 | 0.05 |
| 0184 | Osmundea spp. |  | 0.10 | 1.05 | 0.58 | 2.50 | 3.03 | 0.08 | 2.55 | 2.50 | 1.55 | 3.53 | 7.00 | 7.00 | 6.03 | 2.53 | 1.53 | 7.50 | 12.00 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | 0.50 | 0.03 | - | 0.03 | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |
| 0118 | Polyneura latissima |  | - | 0.05 | 0.10 | 0.58 | - | 0.03 | 1.53 | 0.05 | - | - | 0.55 | 0.05 | - | - | 0.53 | - | - |
| 0220 | Prionitis australis |  | 0.03 | 0.03 |  |  | - |  |  | 1.50 | - | - | 0.50 | 0.55 | 1.00 | - | 1.53 | 2.00 | 2.00 |
| 0106 | Prionitis spp. |  | 0.05 | 2.55 | 2.50 | 4.00 | 5.50 | 3.00 | 6.50 | 3.00 | 7.50 | 16.50 | 10.50 | 15.50 | 18.00 | 17.00 | 9.50 | 16.00 | 16.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - |  | 0.03 | 0.03 | 0.05 | 0.05 | 0.08 | 0.03 | 0.03 | 0.08 | 0.05 | - | 0.03 | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - |  |  |  |  |  |  |  |  |  |  |  | - |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | 0.03 | - | - | - | 0.03 | 0.03 | 0.03 | - | 0.05 | - | - | 0.05 | - | 0.05 |  |
| 0042 | Pterygophora californica |  | 4.03 | 0.10 | 0.10 | 1.08 | 1.05 | 0.05 | 0.08 | 0.03 | 0.03 | - | 0.50 | - |  | - | - | - |  |
| 0187 | Pugetia firma |  |  | - | - | - | - | - |  | 0.03 |  |  |  |  |  | - | - | 0.03 |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - |  |  | - |  |  | - | - |  |  | - |
| 0122 | Rhodoptilum plumosum |  | - | - | - | $\cdot$ | - | - |  |  |  | - |  | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 2.55 | 2.08 | 5.53 | 10.00 | 6.50 | 6.50 | 6.03 | 6.50 | 7.50 | 9.03 | 9.50 | 12.50 | 9.50 | 7.50 | 8.00 | 17.50 | 11.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.05 | 0.10 | 0.55 | 0.08 | 0.08 | 1.53 | 0.55 |  | 0.03 | 1.55 | 0.05 | 0.03 | 0.05 | - | 0.05 | 0.55 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | 0.05 | 0.05 | - | - | - | - | 0.03 | - | 0.03 | - | - | - | - | - |
| 0014 | Ulva spp. |  | 0.05 | 0.05 | - | 0.03 | - | 0.03 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | 0.10 | 0.05 | 0.10 | 0.03 | 0.08 | 0.03 |
| 0057 | coralline crust |  | 40.00 | 45.50 | 47.00 | 57.50 | 62.00 | 51.50 | 62.50 | 52.00 | 59.00 | 60.50 | 56.00 | 46.00 | 47.50 | 54.00 | 36.50 | 45.00 | 59.50 |
| 1300 | filamentous red algae complex |  | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 | 0.03 | 0.03 |  | 0.03 | 0.05 | 0.10 | 1.08 | 0.08 | 0.03 | 0.10 | 1.05 |
| 0059 | non-coralline crust |  | 0.03 | 0.10 | 0.10 | 2.50 | 2.50 | 1.05 | 1.50 | 0.10 | 2.53 | 2.53 | 2.53 |  | 0.55 | 2.50 | 0.50 | 1.55 | 2.50 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

Sampling code: $6=$ Coverage Based on \# of Contact Point


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | : | 1-Apr-92 | 15-Jun-92 | 31-Aug-92 | 20-Oct-92 | 15-Mar-93 | 25-May-93 | 27-Aug-93 | 20-Oct-93 | 21-Mar-94 | 20-May-94 | 4-Aug-94 | 21-0ct-94 | 6-Apr-95 | 21-Jun-95 | 25-Mar-96 | 18-Mar-97 | 13-Oct-97 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  | 0.03 | 0.08 | 0.03 | 0.03 | - | 0.08 | 0.03 | 0.50 | - | 0.03 | 0.03 | - | 0.50 | 0.50 | - | 0.08 | 1.03 |
| 3383 | Mazzaella splendens |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | 0.08 | 0.05 | - | - | - | 0.05 | 0.05 | - | - | 0.08 | 0.03 | - | 0.03 | - | 0.03 |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1154 | Nienburgia andersoniana |  | 0.03 | 0.50 | 0.03 | 0.03 | 2.55 | 4.00 | 2.00 | 6.50 | 1.00 | 0.50 | 3.50 | 2.50 | 0.53 | 1.03 | 0.58 | - | 3.50 |
| 0096 | Opuntiella californica |  |  |  | - |  | - |  | - |  |  | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | 0.08 | 0.05 | 0.03 | 3.00 | 0.08 | 0.55 | - | 0.08 | 0.03 | - | - | 0.05 | - | 0.05 | 3.03 | 0.05 | 0.03 |
| 0199 | Phaeophyta |  | - | - | - |  | - |  | - |  |  | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima |  | - | 0.03 | - | - | - | 0.05 | - | - | - | 0.03 | - | - | - | 0.03 | - | 0.05 |  |
| 0220 | Prionitis australis |  | - | 2.00 | 3.50 | 2.50 | 0.50 | 1.03 | 0.53 | - | 0.50 | 0.50 | 1.50 | 0.53 | 1.53 | 2.00 | - | 0.03 | 0.53 |
| 0106 | Prionitis spp. |  | 13.50 | 9.50 | 16.00 | 11.50 | 13.00 | 9.00 | 17.00 | 13.50 | 11.00 | 9.50 | 13.50 | 15.50 | 9.50 | 4.50 | 8.00 | 1.05 | 7.00 |
| 0221 | Ptercladiella caloglossoides |  | - | 0.05 | , | - | 6.00 | 相 | - | - | - | , | - | . | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea |  | 0.05 | - | 0.03 | 0.05 | 0.10 | 0.55 | 0.05 | 0.08 | 1.53 | - | - | - | 1.05 | 0.03 | 4.00 | 0.08 | 0.53 |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | $\because$ | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 8.53 | 17.00 | 10.00 | 15.00 | 9.00 | 14.50 | 12.50 | 10.00 | 8.00 | 9.50 | 11.00 | 5.00 | 4.03 | 11.00 | 5.03 | 5.50 | 4.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 | - | - | - | - | 0.03 | - | 0.03 | 0.03 | - | - | - | - | - | - | - | 0.05 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | 0.50 | 0.05 | 0.50 | 0.03 | - | 0.05 | - | 0.03 |  |
| 0155 | Scinaia confusa |  |  | 0.03 | - | - | - | 0.03 | - | - | 0.03 | , | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.05 | 0.08 | 0.58 | 0.05 | 0.03 | 0.10 | 0.55 | 0.05 | 0.08 | - | 0.05 | 0.08 | - | 0.05 | 0.03 | - | 0.03 |
| 0057 | coralline crust |  | 40.00 | 45.00 | 43.50 | 42.50 | 52.00 | 29.50 | 31.00 | 41.50 | 46.00 | 38.00 | 35.50 | 28.50 | 41.00 | 38.50 | 46.50 | 32.00 | 31.00 |
| 1300 | filamentous red algae complex |  | 1.55 | 0.05 | 0.55 | 0.05 | 1.55 | 4.53 | 1.00 | 0.08 | 2.55 | 5.03 | 2.05 | 2.00 | 0.53 | 6.00 | - | 2.50 | 5.03 |
| 0059 | non-coralline crust |  | 0.55 | 1.03 | 1.03 | 2.50 | 0.55 | 0.03 | 0.08 | 0.55 | 1.53 | 0.10 | 0.03 | 0.08 | 1.08 | 1.53 | - | 0.08 | 0.10 |

## Subtidal Line Contact - Survey Algal and Substrate Abunc

Sampling code: $6=$ Coverage Based on \# of Contact Point


| Species Code (spcode) | Species | s | 11-May-98 | 7-0ct-98 | 17-Mar-99 | 4-Jun-99 | 20-Aug-99 | 3-Nov-99 | 1-May-00 | 7-Jul-00 | 15-Sep-00 | 6-Nov-00 | 24-Mar-01 | 15-Jun-01 | 30-Aug-01 | 14-Dec-01 | 19-Mar-02 | 13-Jun-02 | 23-Aug-02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  | 0.03 |  | 0.03 | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - |  |  |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | 0.55 |  |
| 0153 | Neootilota spp. |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | 0.53 | 1.03 | 0.05 | - | 0.05 | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | 0.03 | 1.05 | 0.03 | - | - | - |  | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | 0.03 | - | 0.03 | - | - | - | 0.03 | - | - | - | 0.03 | - | - | - | 0.05 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | 0.05 | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | 0.03 | 0.50 | 0.53 | 1.50 | 0.53 | 0.05 | - | - | 1.03 | 1.00 | 4.50 | 2.50 | 1.03 | - | 1.03 | 4.03 | 0.50 |
| 0106 | Prionitis spp. |  | 7.50 | 4.00 | 9.50 | 8.00 | 9.00 | 8.50 | 3.00 | 4.00 | 5.00 | 2.03 | - | 0.50 | 3.00 | 7.00 | 1.03 | 5.53 | 5.50 |
| 0221 | Ptercladiella caloglossoides |  | . - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 1.03 | - | 0.55 | 0.03 | 0.55 | 0.08 | 1.55 | 1.03 | 0.08 | 1.00 | 0.58 | 0.58 | 0.08 | 2.53 | 4.03 | - | 1.53 |
| 0042 | Pterygophora californica |  | . | 0.03 | 0.08 | 0.05 | 0.03 | 0.03 | - | - | - | - | - |  |  | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | . | . | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 8.50 | 1.05 | 6.00 | 2.50 | 4.00 | 2.03 | 5.00 | 0.03 | 4.00 | 3.50 | 6.50 | 3.50 | 4.50 | 3.53 | 5.50 | 4.50 | 4.50 |
| 0104 | Sarcodiotheca gaudichaudii |  |  | - |  | . | - | - | 0.03 | - | , | - |  | - | - | - | - |  |  |
| 1326 | Sargassum muticum |  | 0.03 | - | 0.03 | - | - | 0.03 | 0.08 | 1.00 | . | - | 0.03 | - | - | - | - | 0.03 | 0.03 |
| 0155 | Scinaia confusa |  |  | - |  | - | - | - | - | - | - - | - | - | 0.03 | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.10 | - |  | - | - | - | 0.03 | - | - | - | 0.05 | 0.08 | - | - | 0.08 | - |  |
| 0057 | coralline crust |  | 32.50 | 24.00 | 39.50 | 35.50 | 33.00 | 27.50 | 34.00 | 55.50 | 27.50 | 17.50 | 67.50 | 76.00 | 75.50 | 34.00 | 78.50 | 44.50 | 43.00 |
| 1300 | filamentous red algae complex |  | 5.50 | 0.03 |  | 2.05 |  | 0.08 | 2.03 | 0.10 | 0.08 | - | 0.50 | 0.08 | 0.08 | - | 0.10 | - | 0.08 |
| 0059 | non-coralline crust |  | 0.55 | 0.08 | 0.53 | 0.05 | 0.08 | 0.10 | 1.03 | 1.00 | 0.08 | 0.05 | 1.00 | 1.00 | 0.10 | 1.05 | 1.50 | 0.58 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Point

| Species Code (spcode) | Species | ! | $\begin{array}{r} 119 \\ 26 \text {-Dec-02 } \end{array}$ | $\begin{array}{r} 120 \\ 7 \text {-Mar-03 } \end{array}$ | $\begin{array}{r} 121 \\ \text { 1-May-03 } \end{array}$ | $\begin{array}{r} 122 \\ 20-A u g-03 \end{array}$ | $\begin{array}{r} 123 \\ 6-\mathrm{Nov}-03 \end{array}$ | $\begin{array}{r} 124 \\ \text { 10-Feb-04 } \end{array}$ | $\begin{array}{r} 125 \\ \text { 24-May-04 } \end{array}$ | $\begin{array}{r} 126 \\ \text { 2-Sep-04 } \end{array}$ | $\begin{array}{r} 127 \\ \text { 4-Feb-05 } \end{array}$ | $\begin{array}{r} 128 \\ \text { 5-Apr-05 } \end{array}$ | $\begin{array}{r} 129 \\ \text { 1-Jun-05 } \end{array}$ | $\begin{array}{r} 130 \\ \text { 28-Jul-05 } \end{array}$ | $\begin{array}{r} 131 \\ \text { 23-Nov-05 } \end{array}$ | $\begin{array}{r} 132 \\ 23-\mathrm{Feb}-06 \end{array}$ | $\begin{array}{r} 133 \\ \text { 18-May-06 } \end{array}$ | $\begin{array}{r} 134 \\ \text { 15-Aug-06 } \end{array}$ | $\begin{array}{r} 135 \\ \text { 30-Oct-06 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  |  |  | - | - | - |  |  |  |  |  | - |  | 0.03 | - | - |  |
| 1549 | Acrosorium ciliolatum |  | 3.53 | 17.00 | 5.50 | 0.55 | 6.50 | 10.00 | 0.05 | 7.03 | 10.50 | 27.00 | 8.50 | - | 3.03 | 20.00 | 18.00 | 14.00 | 19.00 |
| 0126 | Ahnfeltiopsis leptophylla |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.05 | 0.03 | 0.03 | - | 2.50 | 0.05 | 1.03 | 0.05 | 0.03 | 0.55 | 1.05 | 1.50 | 0.03 | 0.55 | 0.03 | 0.08 | 0.03 |
| 0047 | Amplisiphonia pacifica |  |  |  |  | - |  | - | - |  | - | - |  |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | 0.05 | - | - | - |  | 1.03 | 0.05 | 0.03 | - | - | - |  | 0.03 | - | 0.05 | 0.03 |
| 0245 | Bryopsis spp. |  | - |  |  | - | - | - | - | - | - | - |  |  | - | 0.05 |  |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 24.50 | 18.00 | 24.50 | 22.50 | 31.00 | - | 35.00 | 38.50 | 29.50 | 31.00 | 33.50 | 27.50 | 16.50 | 23.00 | 33.00 | 31.00 | 29.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | - |  | - | - | - | - |  |  | - |  |  |  | - | - |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.03 | 0.05 | 1.00 | 0.10 | 0.08 | 0.03 | 0.53 | 0.03 | - | 0.08 | 0.08 | - | 0.03 | 0.10 | 0.58 | 1.03 | 0.08 |
| 0112 | Callophyllis spp. |  | - | 2.53 | - | 0.03 | 0.03 | 0.05 | 6.50 | 1.03 | - | 0.03 | 0.03 | 0.50 | 0.03 | 0.05 |  | 0.03 | 0.08 |
| 0239 | Chlorophyta (filamentous) |  | - |  | - | - | 0.03 | - | - | . | 0.03 | 0.03 | 0.05 | 0.03 |  | 0.03 |  | 0.03 |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - |
| 0125 | Chondracanthus corymbiferus |  | 1.03 | 3.50 | 4.50 | 5.50 | 6.50 | 2.50 | 9.00 | 6.00 | 0.55 | 1.53 | 7.50 | 4.53 | 1.08 | 3.53 | 5.50 | 7.00 | 5.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | 0.50 | - | - | - | - | 0.05 | 0.03 | - | 0.03 | 0.53 |  | 1.53 | 1.50 |  | 0.50 | 0.53 |
| 1302 | Chrysoohyta |  | - | 10.00 | - | - | - | - | 15.50 | - | - | 17.50 | 13.00 | 8.50 | 0.50 | 3.03 | 10.50 |  |  |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - | - | - |  | - | - |  |  |  | - | - | - | - |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - |
| 0146 | Colpomenia spp. |  | - | 0.05 | - | - | - | 0.05 | 0.05 | - | - | - | 0.10 | 0.10 | - | 0.03 | 0.10 | - - | - |
| 0055 | Corallina chilensis |  | - | - | - | - | 0.03 | 15.50 | - |  | 0.03 | 0.05 |  | 0.03 | - | - | 0.03 | - | - |
| 0052 | Cryptopleura ruprechtiana |  | - | - | 0.50 | - | 0.50 | - | - | 0.53 | - | - | - | - | - | - | 0.03 | - | - |
| 0115 | Cryptopleura violacea |  | 0.03 | 10.50 | 18.50 | 5.00 | 8.50 | 8.00 | 16.50 | 3.50 | 0.03 | 1.53 | 15.50 | 8.50 | 2.50 | 6.00 | 17.50 | 7.03 | 2.00 |
| 0036 | Cystoseira osmundacea |  | 0.58 | 1.53 | 5.00 | 4.03 | 6.53 | 4.50 | 8.03 | 5.50 | 4.03 | 2.05 | 4.53 | 8.50 | 4.03 | 5.00 | 7.50 | 10.00 | 7.53 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - | - | . |  | - | - | 1.50 |
| 1830 | Desmarestia ligulata |  | - | 0.05 | 32.00 | 2.03 | - | - | 11.50 | 15.50 | - | - | 2.03 | 5.00 | - | 0.08 | 0.03 | 0.53 |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 3326 | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 9.00 | 12.50 | 11.00 | 8.00 | 9.00 | 9.00 | 27.00 | 16.00 | 10.00 | 15.00 | 14.50 | 12.00 | 8.00 | 9.00 | 9.50 | 11.00 | 15.50 |
| 0193 | Faucheal laciniata |  | - | - | - | - |  | - | - | - | . | - | - | - | - |  |  |  |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0072 | Gastroclonium subarticulatum |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 2.50 | 1.50 | 0.03 | 0.53 | 1.55 | 1.55 | 1.00 | 0.03 | 0.05 | 1.05 | 0.05 | 2.00 | 0.55 | 1.03 | 0.53 | 2.03 | 1.00 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - |  | - |
| 0109 | Grateloupia californica |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |  | - |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | 0.08 | 0.05 | - | 0.03 | - | 1.03 | - | - | - | 0.10 | 0.03 | - | - | 0.05 | 0.05 | 0.03 |
| 0212 | Hymenena spp. |  | - |  | - | - |  | - | - | - | - | - | - | - | - | - |  |  |  |
| 0035 | Laminaria setchellii |  | 0.03 | 0.05 | - | 0.50 | 0.03 | - | - | 0.03 | 0.03 | - | - | - | - | - | 0.05 | 0.03 |  |
| 0233 | Laminariales |  | - | - | - | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - |  |  |  |
| 1640 | Macrocystis pyrifera |  | 1.55 | 1.53 | 1.00 | 2.03 | 4.03 | 3.50 | 1.03 | 2.55 | 0.05 | 0.03 | 0.58 | 1.05 | 1.05 | 1.05 | 0.55 | 4.00 | 1.55 |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0090 | Mazzaella oregona |  |  |  |  | - | - | - | - | - |  | - |  |  |  | - |  |  |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | s | 26-Dec-02 | 7-Mar-03 | 1-May-03 | 20-Aug-03 | 6-Nov-03 | 10-Feb-04 | 24-May-04 | 2-Sep-04 | 4-Feb-05 | 5-Apr-05 | 1.Jun-05 | 28-Jul-05 | 23-Nov-05 | 23-Feb-06 | 18-May-06 | 15-Aug-06 | 30-Oct-06 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  | - | - | - | - |  |  | 0.03 | - | - | - | 0.03 | - | 0.03 | - | 0.03 | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |
| 1154 | Nienburgia andersoniana |  | 0.08 | 0.03 | - | - | 0.55 | 0.55 | - | 0.50 | - | - | - | - | - | - | - | 0.03 | - |
| 0096 | Opuntiella californica |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |
| 0184 | Osmundea spp. |  | - | - | - | 0.05 |  | 0.03 | 0.03 | 0.03 | - | - | - | 0.03 | - | 0.03 | - | - | 0.05 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - - | - | $\stackrel{-}{-}$ | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | 0.50 | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | 0.03 | - | - | - | 0.50 | - | - | - | - | - |  | - | - | - |  |
| 0220 | Prionitis australis |  | - | 0.08 | - | 1.50 | 1.03 | 1.00 | 1.03 | 0.03 | 0.03 | 1.53 | 0.53 | - | 1.00 | 0.03 | 1.00 | 1.00 | 0.03 |
| 0106 | Prionitis spp. |  | 2.50 | 7.00 | 1.03 | 2.53 | 5.50 | 3.00 | 4.53 | 3.53 | 5.50 | 1.50 | 5.03 | 3.00 | 5.00 | 5.50 | 3.03 | 4.00 | 6.00 |
| 0221 | Ptercladiella caloglossoides |  |  | - | - | - |  | - | - | - | - | - | - | - | - |  | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - |  | . | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | 1.05 | - | 0.10 | 1.08 | 1.08 | 0.50 | 0.03 | 0.55 | - | - | 0.03 | - | 0.53 | - | $0 \cdot$ |  |
| 0042 | Pterygophora californica |  | - | - | . | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0187 | Pugetia firma |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0219 | Rhodophyta Jiuv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - |  | - | - |  | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 0.55 | 10.50 | 4.00 | 2.53 | 3.50 | 3.00 | 4.50 | 2.00 | 0.50 | 3.03 | 4.03 | 1.53 | 7.50 | 7.00 | 6.00 | 3.50 | 3.50 |
| 0104 | Sarcodiotheca gaudichaudii |  |  |  |  | - | - | - | . | 0.03 | - | - |  | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - | 0.03 | - | - | - | . | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - |  | - | - | $\bigcirc$ | 0.03 | - | - | - | - | - |  | - |  | - | - |  |
| 0014 | Ulva spp. |  | - | 0.03 | 0.03 | - | 0.03 |  | - | 0.03 | 0.03 | - | 0.05 | 0.05 | 0.03 | 0.08 | 0.03 | 0.03 | 0.05 |
| 0057 | coralline crust |  | 35.50 | 27.00 | 16.00 | 71.00 | 49.50 | 76.50 | 21.50 | 30.50 | 39.50 | 22.50 | 28.50 | 19.00 | 29.50 | 27.50 | 29.50 | 25.50 | 28.00 |
| 1300 | filamentous red algae complex |  | 0.05 | 4.00 | 6.00 | - | 0.05 | 0.58 | - |  |  | 11.00 | 2.00 | 2.03 | 1.53 | 12.00 | 10.00 | 2.53 | 1.03 |
| 0059 | non-coralline crust |  | 4.00 | 0.08 | 0.58 | 0.50 | 2.50 | 1.00 | - | 0.10 | 3.00 | 0.05 | 0.03 | 1.05 | 3.53 | 1.03 | 0.05 | 0.05 | 1.53 |

## Subtidal Line Contact - Survey Algal and Substrate Abunc

## Sampling code: 6 = Coverage Based on \# of Contact Poinf

| Species Code (spcode) | Species | ! | $\begin{array}{r} 136 \\ \text { 6-Feb-07 } \end{array}$ | $\begin{array}{r} 137 \\ \text { 7-May-07 } \end{array}$ | $\begin{array}{r} 138 \\ \text { 1-Aug-07 } \end{array}$ | $\begin{array}{r} 139 \\ \text { 9-Nov-07 } \end{array}$ | $\begin{array}{r} 140 \\ \text { 1-Apr-08 } \end{array}$ | $\begin{array}{r} 141 \\ \text { 2-Jun-08 } \end{array}$ | $\begin{array}{r} 142 \\ \text { 7-Aug-08 } \end{array}$ | $\begin{array}{r} 143 \\ \text { 17-Nov-08 } \end{array}$ | $\begin{array}{r} 144 \\ 3-F e b-09 \end{array}$ | $\begin{array}{r} 145 \\ \text { 29-May-09 } \end{array}$ | $\begin{array}{r} 146 \\ \text { 26-Aug-09 } \end{array}$ | $\begin{array}{r} 147 \\ 30-\text { Oct-09 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 11-Feb-10 } \end{array}$ | $\begin{array}{r} 149 \\ \text { 25-May-10 } \end{array}$ | $\begin{array}{r} 150 \\ 23 \text {-Aug-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 19-Oct-10 } \end{array}$ | $\begin{array}{r} 152 \\ \text { 11-Jan-11 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - |  |  | - |  |  |  |  |  |  |  |  |  |
| 1549 | Acrosorium ciliolatum |  | 25.50 | 16.00 | 4.53 | 16.50 | 33.00 | - | 7.50 | 14.00 | 26.50 | 3.53 | 10.00 | 10.50 | 10.50 | 12.00 | 7.50 | 4.53 | 15.00 |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.55 | 0.08 | 1.00 | 0.05 | 0.50 | 1.55 | 0.50 | 0.53 | 1.08 | 0.10 | 2.50 | 1.55 | 0.05 | 1.05 | 4.00 | 0.03 | 0.53 |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - |  | - |  |  |  |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | 0.03 | - | - | 0.05 | 5.00 | - | - | 0.10 | 0.08 | - | 0.03 | 0.08 |  | 0.05 | 0.03 | 0.03 | 0.05 |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | 0.03 | - | - |  |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 23.00 | 27.00 | 16.50 | 32.00 | 21.00 | 20.50 | 30.00 | 21.00 | 22.00 | 21.50 | 34.50 | 29.50 | 17.50 | 17.50 | 29.50 | 20.50 | 23.50 |
| 0185 | Callithamnion spp.PPleonosporium spp. |  | - | - | - |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabellulata |  | 0.05 | 1.55 | - | 0.05 | 0.05 | 0.50 | 0.08 | 0.03 |  | - | 0.05 | 0.53 | - | 0.05 | 0.50 | 0.03 | - |
| 0112 | Callophyllis spp. |  | 1.00 |  | 0.03 | 0.05 | 0.50 |  | 0.03 | - | 0.03 | - |  |  | - |  |  |  | - |
| 0239 | Chlorophyta (filamentous) |  | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.08 | 0.08 | 1.55 | 0.08 | 0.03 | 1.00 | 0.53 | 4.00 | 0.08 | 0.05 | 1.08 | 3.53 |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - |  | . | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 3.53 | 4.00 | 3.50 | 5.50 | 2.50 | 8.50 | 12.00 | 7.50 | 3.50 | 3.50 | 3.50 | 2.50 | 0.05 | 0.55 | 4.53 | 4.00 | 0.10 |
| 1305 | Chondracanthus harveyanus/spinosus |  | 0.03 | 1.53 | - | 0.50 | 0.05 | 0.50 | - | - | 0.03 | - | 0.50 | 0.50 | - | - | 0.03 | - |  |
| 1302 | Chrysophyta |  | 7.50 | 0.03 | -- |  | 0.03 | - | - | 0.50 | - | - | 1.50 | - | - | - | 1.53 |  | 0.03 |
| 1137 | Codium fragile subsp. Californicum |  | . | - | - |  | - | - | - | - | 0.03 | - | . | - | - |  |  |  |  |
| 0025 | Coilodesme californica |  |  | - | - |  | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0146 | Colpomenia spp. |  | 0.05 | 0.08 | - | - | 0.03 | 0.05 | 0.03 | - | 0.03 | 0.05 | - | - | - |  | 0.03 |  | 0.03 |
| 0055 | Corallina chilensis |  | - | - | - | - | - | 0.03 | - | - | 0.03 | - | 0.03 | - | - |  | 0.03 |  |  |
| 0052 | Cryptopleura ruprechtiana |  | - | - | - |  | 5.50 | 0.53 | - | - | - | 0.03 |  | - |  | 0.03 | 0.53 | 0.03 | 0.05 |
| 0115 | Cryptopleura violacea |  | 1.00 | 17.50 | 7.00 | - | 2.00 |  |  | 0.05 | 0.05 | - | 1.53 | 0.55 | - | 1.53 | 14.00 | 8.00 |  |
| 0036 | Cystoseira osmundacea |  | 5.50 | 10.03 | 12.50 | 10.00 | 8.53 | 10.03 | 12.03 | 8.50 | 10.50 | 13.00 | 14.50 | 9.50 | 5.05 | 6.53 | 5.53 | 2.53 | 1.03 |
| 0235 | Delesseriaceae (juv.) |  |  |  | - | - | - |  |  |  |  | - |  |  | - | - |  | - |  |
| 1830 | Desmarestia ligulata |  | 0.05 | 0.08 | - | - | 0.53 | 1.50 | 2.53 | - | - | - | - | - | - | 6.00 | 13.00 | 1.08 |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - |  | - |  | 0.03 | - | - | - | - | - | - | - | - | - |  | - |  |
| 0238 | Ectocarpales |  | - | 7.50 | - | 0.05 | 1.08 | - | - | - | 14.00 | 2.55 | 12.50 | 0.53 | - | 8.00 | 3.03 | 0.55 |  |
| 0031 | Egregia menziesii |  | - |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 3326 | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 1304 | Farlowia/Pikea spp.-complex |  | 10.50 | 14.00 | 6.00 | 4.50 | 4.50 | 3.50 | 2.53 | 3.53 | 8.50 | 2.50 | 3.05 | 3.50 | 2.55 | 5.50 | 1.53 | 1.55 | 5.50 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | 0.03 | - | - |  |  |  | . | - | 0.53 | 1.03 | 0.03 |  |
| 0142 | Fryeella gardneri |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - |  | - | - | - | - |  | - |  | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 2.03 | 3.50 | 2.00 | 2.05 | 2.03 | 2.00 | 5.50 | 2.05 | 3.53 | 1.50 | 3.00 | 3.53 | 0.58 | 1.53 | 2.00 | 1.05 | 1.03 |
| 0206 | Gelidium spp. |  | - |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 1224 | Gloiosiphonia californica |  | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | 0.55 | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | 0.03 | - | - | 0.53 | 1.00 | 0.53 | - | - | - | 0.05 | - | - | 0.05 | 0.03 | - | - |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | - | 0.03 | 0.08 | 0.03 | 0.05 | 0.08 | 0.08 | - | 0.03 | 0.03 | - | - | - | - | - | 0.08 | - |
| 0233 | Laminariales |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.08 |  | - |  |
| 1640 | Macrocystis pyrifera |  | 0.58 | 1.55 | 4.03 | 1.53 | 3.00 | 2.55 | 2.50 | 0.55 | 0.55 | 0.55 | 1.53 | 0.08 | 0.03 | 0.55 | 0.03 | 0.53 | 0.03 |
| 0133 | Maripelta rotata |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |  |
| 0090 | Mazzaella oregona |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | ! | 6-Feb-07 | 7-May-07 | 1-Aug-07 | 9-Nov-07 | 1-Apr-08 | 2-Jun-08 | 7-Aug-08 | 17-Nov-08 | 3-Feb-09 | 29-May-09 | 26-Aug-09 | 30-Oct-09 | 11-Feb-10 | 25-May-10 | 23-Aug-10 | 19-Oct-10 | 11-Jan-11 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  | - | - | 0.03 | - | 0.03 | - |  | - | 0.03 | - | - | - | - | - | - |  |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $0 \cdot$ | - |
| 0095 | Microcladia coulteri |  | - | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | 0.05 | 0.03 | - |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - |
| 1154 | Nienburgia andersoniana |  | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | 0.03 | - | - | $0 \cdot$ | - | - | - | - | - | - | - |
| 0184 | Osmundea spp. |  | - | - | 0.03 | - | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | . | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | 1.00 | - | - | - | 0.03 | - | - | 0.03 | 0.03 | - | - | 0.03 | - | - |
| 0118 | Polyneura latissima |  | - | - | - |  | 0.03 | 0.50 |  | - | - | - | - | - | - | - |  | - | - |
| 0220 | Prionitis australis |  | 0.50 | 1.50 | 0.03 | 0.03 |  | 1.00 | 0.50 | 0.50 | - | 0.50 | 0.50 | 1.00 | - | - | - | - | - |
| 0106 | Prionitis spp. |  | 7.00 | 1.03 | 3.03 | 11.00 | 6.50 | 7.00 | 5.50 | 5.03 | 7.00 | 8.00 | 9.00 | 8.50 | 7.00 | 5.00 | 5.00 | 6.00 | 4.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.50 | 0.03 | - | - | 0.50 | 0.50 | - | - | 0.03 |  | 0.50 | 0.05 | 0.03 | - | $\cdots$ | - |  |
| 0042 | Pterygophora californica |  | - | - | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 | 0.05 | 0.05 | - | 0.03 | 0.08 | 0.58 | 0.08 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0159 | Rhodymenia spp. |  | 3.03 | 8.00 | 2.53 | 3.53 | 5.00 | 9.03 | 2.50 | 0.05 | 3.50 | 1.50 | 4.00 | 1.50 | 1.03 | 6.00 | 3.05 | 4.00 | 0.55 |
| 0104 | Sarcodiotheca gaudichaudii |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 | 0.03 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | $\therefore$ | - | - | - | - | - |
| 0155 | Scinaia confusa |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0014 | Ulva spp. |  | - | 0.05 | 0.03 | - | 0.03 | - | 0.03 | - | - | - | 0.03 | 0.03 | - | 0.05 | 0.03 | - | 0.03 |
| 0057 | coralline crust |  | 34.50 | 36.00 | 38.00 | 33.50 | 8.00 | 37.50 | 27.50 | 42.50 | 25.00 | 45.00 | 40.00 | 41.50 | 44.50 | 33.50 | 38.00 | 45.50 | 39.50 |
| 1300 | filamentous red algae complex |  | 7.50 | 4.05 | 0.50 | 2.05 | 3.50 | 1.03 | 10.00 | 0.50 | 3.00 | 5.50 | 0.08 | 6.00 | 0.53 | 17.50 | 1.03 | 4.55 | 5.53 |
| 0059 | non-coralline crust |  | 1.03 | 0.05 | 0.03 | 1.05 | 2.03 | 0.10 | 0.03 | 1.53 | 0.53 | 0.05 | - | 3.03 | 3.50 | 0.05 | 0.03 | 2.50 | 4.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Poin

| Species Code (spcode) | Species | ! | $\begin{array}{r} 153 \\ \text { 15-Apr-11 } \end{array}$ | $\begin{array}{r} 154 \\ \text { 12-Aug-11 } \end{array}$ | $\begin{array}{r} 155 \\ \text { 17-Oct-11 } \end{array}$ | $\begin{array}{r} 156 \\ 21-\mathrm{Feb}-12 \end{array}$ | $\begin{array}{r} 157 \\ 4-\mathrm{May}-12 \end{array}$ | $\begin{array}{r} 158 \\ \text { 14-Aug-12 } \end{array}$ | $\begin{array}{r} 159 \\ \text { 13-Nov-12 } \end{array}$ | $\begin{array}{r} 160 \\ \text { 12-Mar-13 } \end{array}$ | $\begin{array}{r} 161 \\ 25-\text { Apr-13 } \end{array}$ | $\begin{array}{r} 162 \\ 16-A u g-13 \end{array}$ | $\begin{array}{r} 163 \\ 24-O c t-13 \end{array}$ | $\begin{array}{r} 164 \\ 5-\mathrm{Feb}-14 \end{array}$ | $\begin{array}{r} 165 \\ 9-M a y-14 \end{array}$ | $\begin{array}{r} 166 \\ \text { 16-Jul-14 } \end{array}$ | $\begin{array}{r} 167 \\ \text { 11-Nov-14 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  | - | - | - | - | - | - |  |  |  | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | 23.50 | 6.00 | 8.00 | 11.50 | 24.50 | 3.00 | 5.00 | 19.50 | 10.00 | 9.50 | 10.00 | 16.50 | 14.50 | 25.00 | 22.50 |
| 0126 | Ahnfeltiopsis leptophylla |  |  | - |  |  |  | - | - | - | - |  |  |  |  | - |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.05 | 0.05 | 2.03 | 0.03 | 2.03 | 0.55 | 0.05 | 0.05 | 0.08 | 0.58 | 1.00 | - | 0.08 | 0.08 | 0.05 |
| 0047 | Amplisiphonia pacifica |  | - | - | - |  |  | - | - | - | - |  | - |  |  |  | . |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.05 | - | - | 0.03 | 0.50 | - | - | - | - |  | - | - | - | - | - |
| 0245 | Bryopsis spp. |  | - | - | - | - |  | - | - | - | - | - | - | - | - |  | - |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 15.50 | 26.50 | 25.50 | 24.00 | 28.00 | 19.50 | 33.00 | 20.50 | 28.00 | 37.50 | 31.00 | 23.00 | 30.00 | 28.50 | 22.00 |
| 0185 | Callithamnion spp.PPleonosporium spp. |  | - | - | - | - |  | - | - | - | - | 0.03 | 0.03 | - |  |  |  |
| 0064 | Callophyllis flabellulata |  | 0.03 | 0.05 | - | 0.03 | 0.05 | 0.03 | - | 0.03 | - | 0.03 | - |  | - |  |  |
| 0112 | Callophyllis spp. |  | - | 0.50 | $\cdot$ |  | 0.03 |  | 0.03 | - | - |  | - |  | - | - | - |
| 0239 | Chlorophyta (filamentous) |  | - | 2.50 | 4.05 | 3.00 |  | 1.03 | 3.53 | 0.05 | 1.53 | 2.50 | 0.53 | 3.55 | 0.03 | 5.03 | 3.55 |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 0.53 | 4.50 | 3.00 | 0.03 | 2.05 | 4.00 | 3.53 | 0.08 | 6.03 | 8.00 | 5.53 | 0.03 | 5.00 | 8.00 | 4.50 |
| 1305 | Chondracanthus harveyanus/spinosus |  | 0.03 | - | - | - | - | - | - | 0.03 | 0.03 | - | 0.03 | - | 0.03 | 2.00 | 2.00 |
| 1302 | Chrysophyta |  | - | 0.08 | - | - | - | 0.03 | - | - | - | 0.03 | 0.03 | - | 1.03 | - | 0.03 |
| 1137 | Codium fragile subsp. Californicum |  | - | - | - | - | - |  | - | - | - | - | . | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | - | 0.03 | 0.05 | - | - | 0.05 | 0.05 |  | - |
| 0055 | Corallina chilensis |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |
| 0052 | Cryptopleura ruprechtiana |  | 0.03 | 0.05 | 0.03 | - | - |  | 0.03 | - | 0.05 | 1.53 | 0.53 |  | 0.05 | 4.50 | - |
| 0115 | Cryptopleura violacea |  | 3.50 | 11.00 | 5.00 | - | 12.00 | 11.00 | 2.03 | 5.00 | 9.50 | 13.00 | 0.05 | 2.50 | 10.00 | 25.00 | 7.50 |
| 0036 | Cystoseira osmundacea |  | 5.00 | 4.50 | 5.00 | 4.03 | 6.03 | 5.00 | 5.03 | 4.03 | 6.53 | 6.00 | 3.55 | 1.08 | 0.55 | 4.00 | 0.53 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - |  | - | . | - | - |  |
| 1830 | Desmarestia ligulata |  | 0.08 | 22.00 | 7.00 | - | 0.08 | 26.50 | 0.50 | 0.05 | 1.05 | 5.00 | 0.03 | - | 6.55 | 5.03 | - |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - |  | - |  |  |  | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - |  |  | 0.03 | - | - | - | - | - |  | - | - |
| 0238 | Ectocarpales |  | 11.00 | 0.50 | 0.03 | 6.00 | 6.00 | - | 0.50 | 7.50 | 14.50 | 4.00 | - | - | 10.00 | 4.03 | - |
| 0031 | Egregia menziesii |  | - | - |  |  |  | - | - | - | - | - | - | - | - | - | - |
| 3326 | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0071 | Erythrophyllum delesserioides |  | $\checkmark$ | - | - | - | - | - | - | - | - | - | - |  | - | - | - |
| 1304 | Farlowia/Pikea spp.-complex |  | 6.50 | 4.50 | 10.00 | 6.00 | 10.00 | 7.00 | 11.50 | 8.50 | 12.00 | 9.50 | 9.00 | 11.00 | 11.50 | 7.50 | 11.00 |
| 0193 | Fauchea laciniata |  |  | - | - | 0.03 | 0.03 | 0.03 | - | - | - | 0.05 |  | 0.03 | - | - | . |
| 0142 | Fryeella gardneri |  | 0.03 | - | - | - |  |  | - | - | 0.10 | - | - | - | - | 0.05 | - |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0075 | Gelidium robustum |  | 0.53 | 0.05 | 1.00 | 0.05 | 0.55 | 0.53 | 0.03 | 0.53 | 0.03 | 0.08 | - | 0.55 | 2.03 | 0.55 | 0.53 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0152 | Halymenia/Schizymenia spp.complex |  | 0.05 | 0.03 | - | - | - | - | - | 0.03 | 0.03 | 0.10 | - | - | 0.05 | 1.05 | - |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0035 | Laminaria setchellii |  | 0.03 | - | - | 0.03 | - | $=$ | - | - | - | 0.03 | 0.05 | - | 0.03 | - | - |
| 0233 | Laminariales |  | 0.03 | - | - | - | 0.05 | - | - | 0.03 | 0.03 | 0.05 | 0.03 | - | 0.03 | 0.03 | - |
| 1640 | Macrocystis pyrifera |  | 0.08 | 0.10 | 0.55 | 0.05 | 0.10 | 1.50 | 1.05 | 0.55 | 0.55 | 4.03 | 0.08 | 0.55 | 0.05 | 0.58 | 0.05 |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0090 | Mazzaella oregona |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | ؛ | 15-Apr-11 | 12-Aug-11 | 17-0ct-11 | 21-Feb-12 | 4-May-12 | 14-Aug-12 | 13-Nov-12 | 12-Mar-13 | 25-Apr-13 | 16-Aug-13 | 24-Oct-13 | 5-Feb-14 | 9-May-14 | 16-Jul-14 | 11-Nov-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 0095 | Microcladia coulteri |  | - | 0.05 | - | - | 0.03 | - | 0.05 | - | - | 0.03 | - | - | - | 0.03 |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | $\therefore$ | - | - | - | 0.05 | - | - | - | - | - |
| 1154 | Nienburgia andersoniana |  | . | - | - | - | - | - | - | 0.03 | - | - | . | - | - | 0.53 | - |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | 0.03 | 0.03 | - | - | - | 0.05 |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 | - | - |
| 0220 | Prionitis australis |  | - | - | 0.03 | - | - | - | - | - | 0.03 |  | 0.03 | - | - | - | - |
| 0106 | Prionitis spp. |  | 5.03 | 5.50 | 5.50 | 2.00 | 5.00 | 3.50 | 8.50 | 3.50 | 7.53 | 6.00 | 11.00 | 3.50 | 5.00 | 7.00 | 11.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | 0.03 | - | - | - | - | - | - | 0.53 | 1.00 | - | $\bigcirc$ | - |
| 0042 | Pterygophora californica |  | 0.05 | 0.08 | 0.10 | 0.08 | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | 0.05 | 0:03 | - | 0.03 | 0.03 |
| 0187 | Pugetia firma |  | - | - |  | - | - | - - | - | - | - |  | . - | - | - | - | . |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | 0.10 | - | - | - |
| 0122 | Rhodoptilum plumosum |  | ${ }^{-}$ | - | - | - | $\stackrel{-}{-}$ | $\stackrel{\circ}{*}$ | ${ }^{-}$ | - | - | 5 | - | $\bigcirc$ | - | 5 | 50 |
| 0159 | Rhodymenia spp. |  | 5.00 | 5.50 | 3.50 | 2.05 | 5.50 | 2.00 | 6.03 | 2.50 | 5.00 | 5.00 | 3.03 | 5.05 | 4.05 | 1.53 | 5.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 1326 | Sargassum muticum |  | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | 0.05 |
| 0155 | Scinaia confusa |  |  | - | $\cdots \quad-$ | - | - | - | $-$ | - - | - | - | - | - | - | - | - |
| 0014 | Ulva spp. |  | 0.03 | 0.03 | 0.03 | - | 0.03 |  | 0.03 | - | - | 0.03 | - | - | - | - | - |
| 0057 | coralline crust |  | 32.00 | 51.00 | 43.50 | 45.50 | 31.50 | 41.50 | 45.50 | 48.00 | 38.00 | 46.00 | 53.50 | 51.00 | 37.00 | 39.00 | 47.50 |
| 1300 | filamentous red algae complex |  | 3.00 | 0.03 | 8.50 | 3.03 | 5.53 | 2.58 | 8.03 | 5.00 | 17.50 | 1.00 | 5.03 | 0.08 | 23.00 | 4.03 | 2.05 |
| 0059 | non-coralline crust |  | 1.00 | - | 1.03 | 0.50 | - | 0.08 | 0.05 | - | - | 0.50 | 0.05 | 3.03 | 0.50 | 0.03 | 0.05 |

## Subtidal Line Contact - Survey Invertebrate Abundance (\% Cover for 7 m squared) - North Diablo Cove NDC $4-4 \mathrm{~m}$

| Sampling code: 6 = Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 6 | 7 | 8 | 9 | 11 | 13 | 14 | 15 | 16 | 17 | 19 | 21 | 25 |  |
| Species Code |  | Survey Date: Sampling | 4-Nov-76 | 17-Mar-77 | 30-Mar-78 | 31-May-78 | 10-Jul-78 | 7-Sep-78 | 3-Jan-79 | 5-Apr-79 | 9 9-Jul-79 | 14-Sep-79 | 14-Nov-79 | 30-Jan-80 | 28-May-80 | 18-Sep-80 | 21-May-81 | 16-Jul-81 |
| (spcode) | Species | Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) | 6 | 0.50 | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0264 | Anthopleura elegantissima | 6 | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. | 6 | - - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |
| 0492 | Porifera (encrusting) | 6 | 3.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) | 6 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

## Sampling code: 6 = Coverage Based on \# of Contact PC

| Species Code (spcode) | Species |  | ${ }^{28}$ | ${ }^{30}$ | 31 | ${ }^{32}$ | ${ }^{33}$ | - ${ }^{37}$ | ${ }^{38}$ | - 39 | 40 | $\stackrel{41}{4}$ | 48934 | 44 | ${ }^{45}$ | $\begin{array}{r}47 \\ \hline \text { - } \\ \hline\end{array}$ | ${ }^{48}$ | 7. $\begin{array}{r}49\end{array}$ | 50 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ! | 21-Oct-81 | 22-Mar-82 | 13-May-82 | 9.Jul-82 | 24-Sep-82 | 4-May-83 | 11-Jul-83 | 16-Sep-83 | 9-Nov-83 | 24-Jan-84 | 18-May-84 | 13-Jul-84 | 19-Sep-84 | 3-Jan-85 | 8-Mar-85 | 7-May-85 | 28-Jun-85 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - |  | - |  | - | - | - |  | - | - |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | 3.50 | - | 1.50 | 4.00 | 4.00 | 4.00 | - | 3.50 | 9.00 | 5.50 | 5.00 | 11.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - - | - | - | - |


| Subtidal Line Contact - Survey Invertebrate Abundance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of Contact Pc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 51 | 52 | 55 | 56 | 57 | 58 | 61 | 62 | 63 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| Species |  | : | 5-Sep-85 | 5-Nov-85 | 9-Apr-86 | 15-Jul-86 | 22-Sep-86 | 17-Nov-86 | 29-Apr-87 | 20-Jul-87 | 29-Sep-87 | 12-Feb-90 | 20-Apr-90 | 2-Jul-90 | 4-0ct-90 | 8-Jan-91 | 7-May-91 | 4-Sep-91 | 30-Oct-91 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 9.50 | 10.50 | 11.50 | 4.50 | - | 7.00 | 1.50 | 0.50 | 0.50 | - | - | - | - | - | - | - | 1.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | 1.00 | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0318 | Serpulorbis squamigerus |  | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

| Sampling code: 6 = Coverage Based on \# of Contact Pc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 96 | 98 | 99 |
| Species |  | ! | 1-Apr-92 | 15-Jun-92 | 31-Aug-92 | 20-Oct-92 | 15-Mar-93 | 25-May-93 | 27-Aug-93 | 20-Oct-93 | 21-Mar-94 | 20-May-94 | 4-Aug-94 | 21-Oct-94 | 6-Apr-95 | 21-Jun-95 | 25-Mar-96 | 18-Mar-97 | 13-Oct-97 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | - | - | - | - | 1.00 |  | - | - | 1.50 | 12.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

| Sampling code: $6=$ Coverage Based on \# of Contact Pc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 101 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 |
| Species |  | ! | 11-May-98 | 7-0ct-98 | 17-Mar-99 | 4-Jun-99 | 20-Aug-99 | 3-Nov-99 | 1-May-00 | 7-Jul-00 | 15-Sep-00 | 6-Nov-00 | 24-Mar-01 | 15-Jun-01 | 30-Aug-01 | 14-Dec-01 | 19-Mar-02 | 13-Jun-02 | 23-Aug-02 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertuaria spp.(A.S.S.) |  | - | - | - | - | - | - | - | - |  |  | - |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |  |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 6.50 | 22.00 | 16.00 | 22.50 | 11.50 | 24.50 | 14.00 | 3.00 | 16.00 | 30.00 | 1.00 |  |  | 21.50 |  | 4.00 |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - |  | - | - |  | - |  | - |  |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Sampling code: $6=$ Coverage Based on \# of Contact PC |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |  | 129 | 130 | 131 | $132$ | 133 | $134$ | $\begin{array}{r} 135 \\ 30-\text { Oct-06 } \end{array}$ |
| Species Code |  | ! | 26-Dec-02 | 7-Mar-03 | 1-May-03 | 20-Aug-03 | 6-Nov-03 | 10-Feb-04 | 24-May-04 | 2-Sep-04 | 4-Feb-05 | 5-Apr-05 | 1-Jun-05 |  |  |  |  |  |  |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - |  | - | - |  | - |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 14.00 | 1.50 | 1.50 | - | 7.50 | 0.50 | - | 5 | 11.50 | 0.50 | 1.50 | - | 28.00 | 4.50 | 1.50 | 3.50 | 4.00 |
| 0492 | Porifera (encrusting) |  | 0.50 | - | - | - | - | - | - | 0.50 | . | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate Abundance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of Contact Pc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 |
| Species |  | ! | 6-Feb-07 | 7-May-07 | 1-Aug-07 | $9-\mathrm{Nov-07}$ | 1-Apr-08 | 2-Jun-08 | 7-Aug-08 | 17-Nov-08 | 3-Feb-09 | 29-May-09 | 26-Aug-09 | 30-0ct-09 | 11-Feb-10 | 25-May-10 | 23-Aug-10 | 19-Oct-10 | 11-Jan-11 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet/Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | 1.00 | 1.00 | 0.50 | 7.00 | - | - | 0.50 | 4.50 | 4.00 | - | - | 4.50 | 8.00 | 2.00 | 4.50 | 8.50 | 12.50 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | . | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | . | - | . | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

| Sampling code: 6 = Coverage Based on \# of Contact Pc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 153 | 154 | 155 | 156 | $\begin{array}{r}157 \\ \hline\end{array}$ | - 158 | 159 | 160 | 161 | - 162 | 163 | 164 $5-596$ | $165$ | $166$ | $167$ |
| Species |  | ! | 15-Apr-11 | 12-Aug-11 | 17-Oct-11 | 21-Feb-12 | 4-May-12 | 14-Aug-12 | 13-Nov-12 | 12-Mar-13 | 25-Apr-13 | 16-Aug-13 | 24-Oct-13 | 5-Feb-14 | 9-May-14 | 16-Jul-14 | 11-Nov-14 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0699 | Didemnum/Trididemnum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | 2.50 | 2.00 | 4.50 | 4.00 | - | - | 1.00 | 2.50 | - | - | 5.00 | 0.50 | - | - | 4.50 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - |  | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Algal and Substrate Abundance (\% Cover for 7 m squared) - Patton Cove SC $1-3 \mathrm{~m}$

## Sampling code: 6 = Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | $\begin{gathered} \text { Survey: } \\ \text { Survey Date: } \\ \text { Sampling } \\ \text { Code } \\ \hline \end{gathered}$ | $\begin{array}{r} 2 \\ 9-O c t-76 \end{array}$ | $\begin{array}{r} 3 \\ 28-F e b-77 \end{array}$ | $\begin{array}{r} 4 \\ \text { 27-Jun-77 } \end{array}$ | $\begin{array}{r} 7 \\ \text { 12-Apr-78 } \end{array}$ | $\begin{array}{r} 8 \\ \text { 12-Jun-78 } \end{array}$ | 30-Aug-78 ${ }^{9}$ | $\begin{array}{r} 12 \\ 5 \text {-Feb-79 } \end{array}$ | $\begin{array}{r} 13 \\ \text { 4-May-79 } \end{array}$ | $\begin{array}{r} 15 \\ \text { 13-Sep-79 } \end{array}$ | $\begin{array}{r} 16 \\ \text { 13-Nov-79 } \end{array}$ | $\begin{array}{r} 18 \\ \text { 17-Mar-80 } \end{array}$ | $\begin{array}{r} 19 \\ \text { 29-May-80 } \end{array}$ | $\begin{array}{r} 22 \\ \text { 13-Nov-80 } \end{array}$ | $\begin{array}{r} 25 \\ 20 \text {-Apr-81 } \end{array}$ | $\begin{array}{r} 26 \\ \text { 15-Jul-81 } \end{array}$ | $\begin{array}{r} 28 \\ \text { 22-Oct-81 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. | 6 | - | - | - | - | - | - | - |  | - |  |  |  |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. | 6 | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - |  | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex | 6 | 55.00 | 51.00 | 51.00 | 33.50 | 52.00 | 57.00 | 47.50 | 49.50 | 56.00 | 54.50 | 36.00 | 54.50 | 51.00 | 41.00 | 53.50 | 62.00 |
| 0064 | Callophyllis flabelluata | 6 | - | 0.55 | 0.50 | 0.08 | 0.55 | 0.03 | 0.03 | 0.05 | 0.08 | 0.10 | - | 0.08 | 0.08 | 1.05 | 0.03 | 0.10 |
| 0112 | Callophyllis spp. | 6 | 1.50 | 0.08 | 2.50 | 0.05 | 2.03 | 1.05 | 1.53 | 1.03 | 0.05 | 2.03 | 0.53 | 0.53 | 1.00 | 0.05 | 3.53 | 2.03 |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - | - |  |  | - |  |  | - |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - |  | - | - |  | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus | 6 | 14.00 | 11.00 | 21.50 | 9.50 | 21.50 | 15.50 | 20.00 | 25.00 | 21.00 | 15.50 | 11.50 | 18.00 | 24.00 | 19.50 | 19.00 | 20.00 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 |  | - | - |  | - | 0.50 | 0.03 | 1.05 | - | - | - | - | 0.05 | 0.10 | - |  |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis | 6 | 2.50 | 1.00 | 2.00 | 0.53 | 1.03 | 1.03 | 1.55 | 0.53 | 1.03 | 1.05 | 1.50 | 1.53 | 1.00 | 1.03 | 1.00 | 0.55 |
| 0056 | Corallina vancouveriensis | 6 |  |  | - |  | - |  |  |  |  | 0.50 | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana | 6 | 18.50 | 5.50 | 39.00 | 9.00 | 24.00 | 39.00 | 26.50 | 41.00 | 37.00 | 25.50 | 2.53 | 18.50 | 28.50 | 24.00 | 36.00 | 31.50 |
| 0115 | Cryptopleura violacea | 6 | 1.00 | - |  | - | 0.50 | 0.50 | 0.03 | 1.50 | - | - | - | - | - | 0.03 | - | 0.53 |
| 0036 | Cystoseira osmundacea | 6 | - | - | 1.00 | - | 0.50 | 0.03 | 0.03 | 0.50 | 0.50 | 0.03 | 0.03 | 0.03 | 0.03 | 0.50 | 1.00 | 2.00 |
| 1189 | Delesseria decipiens | 6 | - | - | - | - | .- | - | - | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) | 6 | - | 8.50 | - | - | - | - | - | - | - | - | - | - | - | - | $\cdot$ | 0.03 |
| 1830 | Desmarestia ligulata | 6 | - | - | 37.00 | - | 0.55 | 1.53 | - | - | - | - | $0 \cdot$ | 0.05 | 0.53 | 5 | 3.03 | 2.03 |
| 0030 | Dictyoneurum californicum | 6 | 8.50 | 2.55 | 5.00 | 0.50 | 2.50 | 4.00 | 3.53 | 4.50 | 1.50 | 2.50 | 0.50 | 0.05 | 0.53 | 0.53 | 1.03 | 0.05 |
| 0190 | Dictyota binghamiae | 6 | - | - | - | - | - | . | - | - | - | - | - |  | - | - | - |  |
| 0031 | Egregia menziesii | 6 | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides | 6 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | - | - |  |
| 1304 | Farlowia/Pikea spp.complex | 6 | - | 0.03 | 0.05 | 0.03 | 0.55 | 1.50 | 0.05 | 0.50 | 0.05 | 0.53 | 0.05 | 1.05 | 0.53 | 0.08 | 0.03 | 0.05 |
| 0193 | Fauchea laciniata | 6 | - | - |  | - | - |  |  |  | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 6 | - | 0.55 | - | 0.05 | 0.50 | - | 0.03 | - | - | 0.55 | - | - | - | 0.03 | 0.50 | 0.03 |
| 0206 | Gelidium spp. | 6 | - | - | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | - | - | - | $0 \cdot$ | 0.03 | - | - | - | - | - | - | - | - | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | 0.05 | - | 0.50 | - | 0.03 | - | - | - | 0.03 | - | - | 1.53 | - | 0.03 | - |  |
| 0983 | Haplogloia andersonii | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 0212 | Hymenena spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 2376 | Laminaria ephemera | 6 | $\stackrel{-}{-}$ | $\stackrel{-}{-}$ | - | $\stackrel{-}{-}$ | - | - | - |  | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii | 6 | 2.03 | 0.50 | 0.58 | 1.05 | 3.03 | 2.53 | 3.50 | 0.55 | 1.53 | 2.53 | 4.00 | 3.03 | 2.55 | 1.03 | 5.50 | 1.55 |
| 0233 | Laminariales | 6 | 0.50 | - | - | 0.08 | 0.03 | - | - | 0.50 | 0.03 | 0.03 | - | 0.03 | - | 0.05 | 0.03 |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | - | - | - | - | - | $\bigcirc$ | - | 1.00 | - | - | - | - | - | - | 0.03 |  |
| 3383 | Mazzaella splendens | 6 | 4.00 | - | 4.03 | 0.03 | 4.03 | 6.00 | 0.50 | 1.50 | 1.03 | 0.53 | - | 2.50 | 6.00 | 1.05 | 2.53 | 1.53 |
| 1014 | Melobesia mediocris | 6 |  | - | - | - | - |  | - | 0.03 | 0.08 | - | - | 0.10 | 0.05 | 0.08 | - |  |
| 1242 | Membranoptera/Branchioglossum spp. | 6 | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0094 | Microcladia borealis | 6 | - | - | $\cdots$ | $\bigcirc$ | ${ }^{-}$ | 0.05 | - |  | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri | 6 | 1.00 | 1.03 | 9.00 | 0.03 | 5.50 | 2.05 | 2.53 | 4.50 | 0.10 | 0.05 | - | 1.58 | 0.08 | 0.58 | 2.03 | 0.58 |
| 0153 | Neoptilota spp. | 6 |  | 0.03 | 0.03 |  |  |  |  | 0.03 | - | 0.05 | - |  | 0.03 | 0.03 | 1.00 |  |


| Species Code (spcode) | Species | Survey Date: Sampling Code | 9-Oct-76 | 28-Feb-77 | 27-Jun-77 | 12-Apr-78 | 12-Jun-78 | 30-Aug-78 | 5-Feb-79 | 4-May-79 | 13-Sep-79 | 13-Nov-79 | 17-Mar-80 | 29-May-80 | 13-Nov-80 | 20-Apr-81 | 15-Jul-81 | 22-0ct-81 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana | 6 | - |  |  |  | 0.10 | 0.58 | - | 0.03 | - | - | - | 0.03 | 0.03 |  | 0.08 | 0.53 |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0184 | Osmundea spp. | 6 | 3.50 | 1.05 | 2.50 | 1.05 | 0.10 | 1.00 | 1.03 | 1.03 | 1.00 | 0.58 | 0.05 | 1.03 | 1.05 | 0.55 | 1.53 | 0.53 |
| 0199 | Phaeophyta | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0135 | Phyllospadix spp. | 6 | 2.05 | 0.55 | 3.00 | 1.08 | 0.58 | 0.55 | 1.55 | 2.50 | 1.53 | 3.50 | 0.58 | 0.58 | 3.53 | 0.08 | 0.03 | 0.03 |
| 0203 | Pikea robusta | 6 | - | - | . | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum | 6 | $\bigcirc$ | - | $5 \cdot$ | - | - | - | - | $\bigcirc$ | - | - | - | 5 | - | $0 \cdot$ | - | - |
| 0118 | Polyneura latissima | 6 | 0.03 | - | 0.50 | - | - | - | - | 1.00 | - | - | - | 0.53 | - | 0.05 | - | - |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0220 | Prionitis australis | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0106 | Prionitis spp. | 6 | 0.03 | 1.55 | 0.03 | 0.55 | 0.55 | 2.00 | 1.50 | 1.05 | 0.08 | 3.00 | 0.55 | 1.03 | 0.53 | 1.05 | 1.03 | 1.05 |
| 0221 | Ptercladiella caloglossoides | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |
| 0192 | Pterosiphonia dendroidea | 6 | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | $\stackrel{-}{-}$ |  |  |  |
| 0042 | Pterygophora californica | 6 | - | - | - | - | - | 0.10 | 0.10 | 0.08 | 0.08 | 0.55 | 0.10 | 0.55 | 0.10 | 0.10 | 0.10 | 3.03 |
| 0187 | Pugetia firma | 6 | - | - | - | - |  |  |  | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) | 6 | - | - | - | 0.53 | 0.03 | - | 0.05 | 0.50 | $\cdot$ | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum | 6 | - | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | $\cdot$ |  |
| 0159 | Rhodymenia spp. | 6 | 0.05 | 1.03 | 1.00 | 0.55 | 1.05 | 1.00 | - | 0.55 | 2.03 | 0.50 | 0.08 | 0.10 | 0.08 | 0.03 | 1.08 | 0.55 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | 2.00 | 1.05 | 1.58 | 1.08 | 2.03 | 2.03 | 1.00 | 0.05 | 1.03 | 0.50 | 0.58 | 0.10 | 0.55 | 0.55 | 0.53 | 2.05 |
| 0155 | Scinaia confusa | 6 | - | - | - | - | 0.10 | - | - | - | - | - | - | 0.05 | 0.03 | - | 0.03 | 0.03 |
| 0110 | Smithora naiadum | 6 | - | - | - | - | - | - | - | - | 0.10 | - | - |  |  | - | - |  |
| 0014 | Ulva spp. | 6 | 2.50 | - | 3.03 | - | 5.50 | 2.58 | 1.50 | 3.05 | 1.05 | 0.10 | 0.05 | 3.08 | 0.58 | 1.05 | 8.00 | 4.50 |
| 0057 | coralline crust | 6 | 47.50 | 61.50 | 19.50 | 45.50 | 36.00 | 43.00 | 43.00 | 23.00 | 27.00 | 34.50 | 55.50 | 52.50 | 27.50 | 32.50 | 34:00 | 51.50 |
| 1300 | filamentous red algae complex | 6 | 0.50 | 3.50 | 0.08 | 0.50 | 2.03 | 1.00 | 0.50 | 0.05 | 0.53 | 0.55 | - | 0.55 | 0.05 | 0.03 | - |  |
| 0059 | non-coralline crust | 6 | 0.53 | 1.50 |  | 2.03 | 1.00 | 0.55 | 0.58 | 0.03 | 0.05 | 0.58 | 1.55 | 2.00 | 0.10 | 0.03 | 0.10 | 0.10 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | $\mathfrak{}$ | $\begin{array}{r} 31 \\ \text { 7-Apr-82 } \end{array}$ | $\begin{array}{r} 32 \\ \text { 2-Jul-82 } \end{array}$ | $\begin{array}{r} 33 \\ \text { 23-Sep-82 } \end{array}$ | $\begin{array}{r} 37 \\ \text { 18-May-83 } \end{array}$ | $\begin{array}{r} 38 \\ 26-J u l-83 \end{array}$ | $\begin{array}{r} 39 \\ \text { 14-Sep-83 } \end{array}$ | $\begin{array}{r} 41 \\ \text { 23-Jan-84 } \end{array}$ | $\begin{array}{r} 44 \\ \text { 12-Jul-84 } \end{array}$ | $\begin{array}{r} 45 \\ \text { 1-Oct-84 } \end{array}$ | $\begin{array}{r} 47 \\ \text { 30-Jan-85 } \end{array}$ | $\begin{array}{r} 49 \\ \text { 1-May- } 85 \end{array}$ | $\begin{array}{r} 50 \\ \text { 22-Jul-85 } \end{array}$ | $\begin{array}{r} 51 \\ 27-\operatorname{Sep}-85 \end{array}$ | $\begin{array}{r} 52 \\ \text { 18-Nov-85 } \end{array}$ | $\begin{array}{r} 55 \\ \text { 22-Apr-86 } \end{array}$ | $\begin{array}{r} 57 \\ \text { 10-Sep-86 } \end{array}$ | $\begin{array}{r} 61 \\ \text { 14-May-87 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  | - | - |  |  | - | - | - |  |  |  | - | - | - | - |  | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - |  |  | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | - | - | - | 0.03 |  | 0.08 | 0.05 | - | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.0 |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.03 | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  | - | - |  |
| 0245 | Bryopsis spp. |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 61.50 | 56.00 | 62.00 | 18.50 | 27.50 | 38.00 | 23.00 | 37.00 | 32.00 | 32.00 | 35.00 | 42.00 | 32.50 | 39.50 | 29.50 | 24.50 | 38.50 |
| 0064 | Callophyllis flabelluata |  | 1.05 | 1.55 | 0.55 | 0.03 | 0.03 | 0.03 | 0.08 | - 0.58 | 0.08 | 0.08 | 1.55 | 0.08 | 0.10 | 0.08 | 0.53 | 0.03 | 0.05 |
| 0112 | Callophyllis spp. |  | 2.53 | 4.00 | 1.55 | 0.03 | 0.05 | 0.05 | 0.05 | 0.50 | 1.00 | 0.05 | 0.50 | 2.53 | 1.58 | 2.05 | 1.03 | 2.53 | 3.50 |
| 0239 | Chlorophyta (filamentous) |  |  | - |  |  | - |  | - |  |  |  |  |  |  |  | - |  |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - |  | - |  | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 13.00 | 11.50 | 20.00 | 8.50 | 20.50 | 24.50 | 18.00 | 20.50 | 24.50 | 21.00 | 19.50 | 30.00 | 22.50 | 15.50 | 17.00 | 23.00 | 18.50 |
| 1305 | Chondracanthus harveyanus/spinosus |  | 0.50 | - | 0.03 | 0.03 | 0.03 | 0.50 | 1.05 | 3.50 | 0.50 | 0.03 | - | - | - | - |  | - |  |
| 1302 | Chrysophyta |  | - | - | - | 2.53 | - | - | - | - | - |  | - |  | - | - | 5.00 | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  |  |  | - |  | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | 2.05 | 3.03 | 1.03 | 1.03 | 4.00 | 2.03 | 0.10 | 3.00 | 0.53 | 1.05 | 1.05 | 1.05 | 0.58 | 0.58 | 1.05 | 1.50 | 0.53 |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | 19.50 | 25.00 | 42.50 | 1.00 | 11.00 | 16.00 | 10.50 | 29.50 | 25.00 | 17.50 | 18.50 | 32.00 | 27.00 | 26.50 | 17.00 | 23.50 | 24.50 |
| 0115 | Cryptopleura violacea | * | 0.53 | 0.08 | 1.50 |  | 1.03 | 0.03 | 0.03 | 6.50 | 1.55 | 0.05 | 1.50 | 2.03 | 0.05 | - | 0.50 | 2.53 | 4.50 |
| 0036 | Cystoseira osmundacea |  | 0.05 | 0.08 | 0.05 | 0.50 | 0.03 | - | 0.03 | 0.03 | 0.53 | 0.53 | 0.50 | 0.05 | 0.05 | 0.10 | 0.05 | - | 0.5 |
| 1189 | Delesseria decipiens |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0235 | Delesseriaceae (juv.) |  |  |  |  |  | - |  | - | - | - | - |  | 5 | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | 0.05 | - | 0.03 | 0.03 | 7.03 | 2.03 | - | 0.08 | 1.00 | - | 0.03 | 0.50 | - | - | 0.10 | 24.00 | 1.03 |
| 0030 | Dictyoneurum californicum |  | 1.00 | 0.05 | 1.00 |  | - |  | - | - |  | - |  | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | $\bigcirc$ | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.03 |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | $0 \cdot$ | 0.05 | 0.03 | - | 0.50 | - | - | ${ }^{-}$ | - | - | - | - |  |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.08 | 1.05 | - | 0.03 | 0.08 | 1.05 | 0.10 | 3.03 | 0.58 | 0.55 | 1.00 | 1.55 | 1.03 | 0.08 | 0.10 | 0.53 | 1.03 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  |  |  |
| 0072 | Gastroclonium subarticulatum |  |  | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.53 | 0.03 | - | 0.03 | 0.03 | 0.03 |  |
| 0075 | Gelidium robustum |  | 0.03 | 0.03 | 0.50 | - | 0.03 | - | 0.05 | - | 0.03 | - | 0.03 | 0.05 | - | 0.05 | 0.05 | 0.03 | 0.05 |
| 0206 | Gelidium spp. |  |  |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | 0.50 | - | - | 3.03 | 28.00 | - | 1.53 | - | 0.03 | - | - | - | - | - | 0.55 | - |  |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 2376 | Laminaria ephemera |  | - | - | - | - | $\stackrel{-}{\square}$ | - | - | - | - | - | - | $\cdot$ | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 5.50 | 5.03 | 3.03 | 1.50 | 0.10 | 2.53 | 1.05 | 8.00 | 3.53 | 2.55 | 3.00 | 4.00 | 10.00 | 5.50 | 6.50 | 4.53 | 6.00 |
| 0233 | Laminariales |  | 0.03 | - | - | - | 0.55 | 0.03 | - | 0.10 | - | 0.05 | 0.05 | - | - | 0.05 | 1.55 | 1.05 | 0.08 |
| 1640 | Macrocystis pyrifera |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.50 | - | - | - | 2.50 | - | 1.05 | 0.05 | - | - | - | - | - | - | - | - | 0.05 |
| 3383 | Mazzaella splendens |  | 1.00 | 1.53 | 3.03 | 2.03 | 4.00 | 17.00 | 2.53 | 13.00 | 4.53 | 0.50 | 1.58 | 4.53 | 1.08 | 2.03 | 2.00 | 7.50 | 0.53 |
| 1014 | Melobesia mediocris |  | 0.03 | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  | - | 0.03 |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |  |
| 0094 | Microcladia borealis |  | $\square$ | ${ }^{-}$ | - | - | - | $\stackrel{-}{-}$ | - | - | - | $\stackrel{-}{-}$ | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.10 | 0.10 | 1.55 | - | 1.50 | 9.50 | 0.10 | 6.00 | 0.10 | 0.10 | 1.05 | 0.10 | 0.08 | 0.10 | 0.08 | 1.05 |  |
| 0153 | Neoptilota spp. |  |  | 0.03 | 0.03 | - | - |  | - |  | - | - |  | 0.05 | 0.03 | - | 0.03 | 0.03 |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ¢ 7-Apr-82 | 2-Jul-82 | 23-Sep-82 | 18-May-83 | 26-Jul-83 | 14-Sep-83 | 23-Jan-84 | 12-Jul-84 | 1-Oct-84 | 30-Jan-85 | 1-May-85 | 22-Jul-85 | 27-Sep-85 | 18-Nov-85 | 22-Apr-86 | 10-Sep-86 | 14-May-87 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  |  | 0.03 |  | 0.08 | 0.03 | - | - | - | - | 0.03 |  | - | - | - | 0.05 | 0.10 |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |  |
| 0184 | Osmundea spp. | 1.05 | 0.58 | 1.03 | 0.05 | 0.05 | 0.03 | 0.08 | 6.50 | 11.00 | 8.00 | 16.50 | 13.50 | 20.50 | 11.00 | 3.55 | 1.05 | 2.55 |
| 0199 | Phaeophyta | - | - | - | - | - | - | - |  |  |  |  |  | - |  |  |  |  |
| 0135 | Phyllospadix spp. | 0.55 | 0.03 | - | 0.03 | 0.05 | 0.50 | 0.05 | - | - | 0.03 | 0.08 | 0.50 | 0.03 | 0.03 | 0.50 | 0.50 | 0.50 |
| 0203 | Pikea robusta | - | - | - | 0.53 | 0.03 | - | 0.03 | - | - | - | - | - | . | - | - | - |  |
| 0117 | Plocamium pacificum | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ |  |  |
| 0118 | Polyneura latissima | 0.05 | - | 0.03 | - | 0.03 | 0.53 | - | 0.58 | - | - | 0.05 | 0.03 | - | - | 0.05 | 0.55 | 0.53 |
| 0099 | Porphyra spp. | - | - | - | 0.53 | - | - | - |  | - | - | - |  | - | - |  |  |  |
| 0220 | Prionitis australis | 0.03 | - | - | - | 0.50 | - | - |  | - | - | ${ }^{-}$ | - | - | - |  |  |  |
| 0106 | Prionitis spp. | 0.55 | 0.08 | 1.50 | 0.53 | 3.00 | 2.53 | 1.05 | 2.00 | 2.00 | 2.00 | 1.00 | 1.05 | 4.50 | 1.50 | 3.03 | 0.08 | 6.00 |
| 0221 | Ptercladiella caloglossoides | - | - | - | - | - | - | 0.03 | - |  | - | - | - | - | $\bigcirc$ |  |  |  |
| 0192 | Pterosiphonia dendroidea | - | - | - | - | - | - | - | - |  |  | - | - | - | 0.03 | - | - |  |
| 0042 | Pterygophora californica | 0.08 | 1.03 | 0.05 | 0.08 | 0.58 | 2.53 | 0.10 | 7.53 | 0.10 | 2.53 | 8.50 | 3.05 | 6.03 | 6.00 | 4.00 | 8.50 | 7.00 |
| 0187 | Pugetia firma |  | - | 0.05 |  | - | 0.03 | 0.03 | 0.03 | - |  | - | - | - | - | 0.03 | . |  |
| 0219 | Rhodophyta (juv. blades) | 0.50 | - |  | 0.50 | - | 1.50 | 1.50 | - | - | - | - | - | - | - | 0.08 | - |  |
| 0122 | Rhodoptilum plumosum | - | - | - |  | 0.03 | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - |  |
| 0159 | Rhodymenia spp. | 0.55 | 1.03 | 0.55 | - | 0.58 | 1.05 | 3.03 | 1.53 | 4.53 | 1.53 | 2.03 | 2.55 | 1.55 | 0.08 | 0.08 | 4.00 | 4.03 |
| 0104 | Sarcodiotheca gaudichaudii | 1.03 | 2.03 | 0.03 | 1.55 | 1.03 | 0.58 | 0.10 | 1.55 | - | 0.55 | 0.55 | 0.05 | 0.03 | 0.03 | 2.00 | 0.05 | 1.50 |
| 0155 | Scinaia confusa | - | - | - |  | 1.05 | 0.10 | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. | 0.08 | 0.58 | 0.08 | 3.53 | 40.00 | 36.00 | 10.00 | 12.00 | 1.05 | 0.05 | 1.08 | 0.08 | 0.10 | 0.10 | 4.53 | 1.03 | 0.10 |
| 0057 | coralline crust | 49.50 | 50.00 | 26.50 | 38.00 | 45.00 | 56.50 | 53.00 | 42.50 | 43.00 | 54.00 | 45.50 | 34.00 | 37.50 | 40.50 | 41.00 | 44.50 | 47.50 |
| 1300 | filamentous red algae complex | 1.00 | - | 0.03 | 0.53 | 1.05 | 0.05 | 0.55 | 0.08 | 0.03 | 0.03 | - | - | - | - | 0.50 | $\cdots$ | 0.03 |
| 0059 | non-coralline crust | 4.00 | 0.08 | 0.08 | 0.08 | 0.05 | 3.53 | 0.58 | 2.03 | 1.58 | 0.53 | 1.05 | 0.05 | 2.05 | 1.08 | 3.03 | 0.08 | 0.55 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

|  |  |  | 62 | 64 | 65 | 66 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 78 | 79 | 80 | 81 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | ! | 30-Jul-87 | 14-Oct-87 | 10-Feb-88 | 26-May-88 | 15-Sep-88 | 27-Feb-89 | 13-Jun-89 | 6-Sep-89 | 20-Nov-89 | 20-Feb-90 | 20-Apr-90 | 17-Jul-90 | 22-Oct-90 | 7-Jun-91 | 21-Aug-91 | 25-Oct-91 | 30-Mar-92 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  |  | - |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | 0.0 |
| 0981 | Ahnfeltiopsis linearis |  | 0.50 | - | - | - | - | 0.03 | - | - | - | - |  | 0.03 | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Caliarthron/Bossiella spp.complex |  | 34.50 | 34.00 | 23.00 | 28.00 | 31.00 | 27.50 | 37.50 | 30.00 | 36.00 | 29.00 | 30.00 | 41.50 | 34.50 | 40.00 | 40.00 | 34.50 | 34.00 |
| 0064 | Callophyllis flabelluata |  | 0.03 | 0.03 | 0.08 | 1.03 | 0.08 | 0.58 | 0.10 | 0.05 | 0.08 | 0.08 | 0.10 | 0.05 | 0.10 | 0.08 | 0.10 | 0.08 | 0.05 |
| 0112 | Callophyllis spp. |  | 4.50 | 0.10 | 0.58 | 5.00 | 3.00 | 4.00 | 4.50 | 6.03 | 3.50 | 5.50 | 11.00 | 5.00 | 4.53 | 5.00 | 6.50 | 0.08 | 2.03 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0125 | Chondracanthus corymbiferus |  | 13.00 | 13.00 | 13.50 | 21.50 | 14.50 | 15.50 | 18.00 | 11.00 | 13.00 | 17.00 | 13.00 | 12.00 | 15.00 | 11.00 | 19.50 | 10.00 | 9.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - |  | - |  |  |  |  |  |  |  |  |  |  |
| 1302 | Chrysophyta |  | - | - | 1.50 | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - | - |  |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | 0.08 | 0.05 | 1.05 | 2.03 | 1.50 | 3.05 | 1.03 | 1.00 | 0.03 | 2.50 | 1.50 | 0.05 | 2.03 | 1.05 | 0.53 | 0.50 | 0.55 |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - |  |  |
| 0052 | Cryptopleura ruprechtiana |  | 41.00 | 29.00 | 11.00 | 30.50 | 34.00 | 21.00 | 25.00 | 23.50 | 27.00 | 19.00 | 29.50 | 34.50 | 31.00 | 37.50 | 30.50 | 24.50 | 21.00 |
| 0115 | Cryptopleura violacea |  | 3.53 | 1.50 | - | 1.50 | 1.50 | - |  | - | - |  | - | 1.05 |  |  |  |  |  |
| 0036 | Cystoseira osmundacea |  | 1.03 | 0.55 | 0.55 | 0.05 | - | 1.55 | 1.05 | 1.53 | 0.55 | 1.05 | 1.55 | 3.53 | 2.53 | 4.53 | 3.55 | 1.05 | 4.00 |
| 1189 | Delesseria decipiens |  |  | - | - | 0.03 | - | 0.03 |  | - |  | 0.03 | - |  |  | 0.50 |  |  | 0.03 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - |  | - |  |  | $\stackrel{\square}{-}$ | - |  | - |  | - | - | - |  |  |
| 1830 | Desmarestia ligulata |  | 0.05 | - | - | 18.00 | 14.00 | 1.53 | 5.50 | 3.00 | - | - | 1.08 | 3.00 | 0.05 | 0.03 | 1.53 | 1.50 |  |
| 0030 | Dictyoneurum californicum |  |  | - | - |  |  |  |  |  | - | - |  |  |  | - |  |  |  |
| 0190 | Dictyota binghamiae |  |  |  | - |  |  |  | - |  | - |  | - |  | - | - | - | - |  |
| 0031 | Egregia menziesii |  | 0.03 | 0.50 | - | 0.03 | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  |  | 0.03 |  | 0.05 | 1.03 |  | 0.50 | 0.03 | 0.03 |  | 0.03 | 0.03 | $0 \cdot$ | 0.03 | 0.05 | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 2.03 | 0.55 | 0.03 | 0.03 | 0.10 | 0.03 | 0.05 | - | 0.50 | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | - | 0.05 |
| 0193 | Fauchea laciniata |  |  |  |  |  |  |  |  |  |  |  |  |  | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | 0.50 | - | - | $\cdot$ | - |  | - | $\cdot$ | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |  |
| 0075 | Gelidium robustum |  | 0.53 | 0.05 | 0.03 | 0.03 | 0.05 | 0.05 | 0.55 | 0.55 | 1.05 | 0.10 | 0.58 | 0.58 | 0.08 | 1.05 | 0.05 | 1.03 | 0.55 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | 0.55 | - | 0.03 | 0.03 | - | - | - | - | - | - | 0.03 | - | - | 0.03 |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 2376 | Laminaria ephemera |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 3.00 | 4.00 | 2.50 | 2.53 | 2.00 | 4.50 | 3.53 | 4.00 | 7.00 | 4.50 | 6.00 | 1.50 | 4.03 | 2.50 | 8.00 | 4.50 | 1.53 |
| 0233 | Laminariales |  | 0.08 | - | 0.10 | 1.03 | 1.58 | 2.00 |  | 0.10 | - | 0.05 | 0.05 | 0.03 | 0.10 | 0.08 | 0.08 | - |  |
| 1640 | Macrocystis pyrifera |  |  | - | - | - | - |  |  | - | - | - |  |  |  |  | - |  |  |
| 0230 | Mazzaella rosea |  |  | - | 0.03 | 0.05 | - |  | 0.55 | - | - | 0.03 |  | - | 0.03 | 1.03 | - | - | 0.03 |
| 3383 | Mazzaella splendens |  | 4.53 | 5.00 | - | 1.53 | 2.03 | 0.03 | - | 1.00 | 0.53 | - | 0.05 | 0.50 | 0.03 | 1.58 | 1.50 | 1.50 | 0.08 |
| 1014 | Melobesia mediocris |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.08 | 0.10 | 0.08 | 3.50 | 1.03 | 1.05 | 0.55 | 1.08 | 0.58 | 0.08 | 1.55 | 0.10 | 1.53 | 0.10 | 0.55 | 0.10 | 0.10 |
| 0153 | Neoptilota spp. |  | - | 0.03 | 0.03 | 0.03 | - |  |  | - |  |  |  | - | - | 0.03 | 0.50 | - |  |


| Species Code (spcode) | Species | ! | 30-Jul-87 | 14-Oct-87 | 10-Feb-88 | 26-May-88 | 15-Sep-88 | 27-Feb-89 | 13-Jun-89 | 6-Sep-89 | 20-Nov-89 | 20-Feb-90 | 20-Apr-90 | 17-Jul-90 | 22-Oct-90 | 7-Jun-91 | 21-Aug-91 | 25-Oct-91 | 30-Mar-92 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 0.08 | 0.55 |  | 1.53 | 0.05 | 0.03 | 0.58 | - | - | - | - | - | - | 0.03 | 0.05 | 0.05 |  |
| 1154 | Nienburgia andersoniana |  |  |  | - |  |  | - |  | - | - | - | - | - | - | - |  | - | 0.03 |
| 0184 | Osmundea spp. |  | 3.00 | 4.50 | 3.00 | 6.50 | 2.00 | 3.50 | 5.50 | 1.53 | 2.50 | 1.53 | 2.00 | 1.05 | 2.53 | 2.05 | 2.50 | 2.00 | 0.08 |
| 0199 | Phaeophyta |  | - | - | - |  | - | - | - | - | 0.03 | - | - | - | - |  |  |  |  |
| 0135 | Phyllospadix spp. |  | 0.03 | - | - | 0.03 | - | - | 0.03 | - | - | - | 0.03 | - | - |  |  |  |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | 0.53 | - | - | 3.00 | 0.08 | 0.08 | 1.50 | - | 0.03 | - | 1.03 | 0.50 | - | 0.08 | - | - | 1.08 |
| 0099 | Porphyra spp. |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | $0 \cdot$ |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0106 | Prionitis spp. |  | 3.00 | 6.00 | 2.53 | 3.00 | 3.53 | 4.50 | 3.50 | 1.50 | 1.53 | 2.50 | 1.50 | 0.58 | 1.08 | 0.58 | 1.53 | 0.05 | 2.05 |
| 0221 | Ptercladiella caloglossoides |  | - | - |  | - | - | - | 0.03 | - | - | - | - | - | - |  |  |  |  |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 |  | - | - | - | - | - | - | - | 0.05 | - | 0.03 | - | - |  |  |
| 0042 | Pterygophora californica |  | 5.00 | 7.00 | 4.53 | 10.50 | 5.50 | 10.00 | 3.50 | 11.00 | 6.00 | 7.00 | 4.00 | 4.50 | 6.50 | 0.58 | 5.53 | 5.55 | 2.53 |
| 0187 | Pugetia firma |  | 2.03 | 0.03 |  | 0.05 | 0.08 | - | 0.05 | - | - | 0.03 | - | - | - | 0.08 | - |  |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | 0.53 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 9.00 | 8.00 | 0.53 | 5.50 | 8.53 | 2.00 | 4.03 | 5.03 | 4.00 | 1.53 | 4.00 | 9.50 | 5.00 | 6.03 | 9.00 | 9.00 | 3.05 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.55 | 0.03 | 0.03 | 1.03 | 0.03 | 0.58 | 1.55 | 0.55 | 0.53 | 0.03 | 0.10 | 0.03 | - | 1.03 | 0.05 . | 0.03 | 0.08 |
| 0155 | Scinaia confusa |  | - | - | - | 0.05 | - | - | - | 0.03 | - | - | - | - | - | - | 0.03 | - |  |
| 0110 | Smithora naiadum |  | - | - | - |  | - | - |  |  |  | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 2.00 | 2.03 | 0.05 | 4.00 | 2.03 | 0.58 | 1.55 | 1.53 | 0.10 | 0.08 | 0.58 | 0.08 | 1.03 | 0.05 | 0.58 | 0.05 | 0.03 |
| 0057 | coralline crust |  | 36.00 | 43.50 | 42.00 | 32.50 | 39.00 | 31.00 | 30.50 | 35.50 | 34.50 | 35.50 | 36.00 | 27.50 | 38.50 | 28.50 | 49.50 | 36.50 | 43.50 |
| 1300 | filamentous red algae complex |  | 0.05 |  | 0.03 | 0.05 | 0.08 | 0.55 | 0.03 | 0.03 | 0.03 | - | 0.05 | - | - | 0.03 | 0.05 | - | 0.05 |
| 0059 | non-coralline crust |  | 0.05 | 1.05 | 3.03 | 2.00 | 2.05 | 1.08 | 0.03 | 4.03 | 4.03 | 2.50 | 0.55 | 0.05 | 1.05 | 1.00 | 2.53 | 0.53 | 1.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

## Species

 Code
spoode)
Species

| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 0.03 | - | 0.03 | - | - | - | 0.50 | - | - | 0.53 | 0.05 | - | 0.50 | 0.53 | 0.50 | 0.03 | 0.03 |
| 1303 | Antithamnion/Pterothamnion spp.complex | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0245 | Bryopsis spp. | - |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex | 39.50 | 33.50 | 35.00 | 37.50 | 44.00 | 29.00 | 31.50 | 39.00 | 49.00 | 28.00 | 15.00 | 40.50 | 34.50 | 43.00 | 39.50 | 32.00 | 27.00 |
| 0064 | Callophyllis flabellulata | 0.58 | 0.08 | 0.58 | 0.08 | 0.55 | - | 0.05 | - | 0.05 | 0.08 | - | 0.05 | 0.50 | - | 0.05 | - |  |
| 0112 | Callophyllis spp. | 4.00 | 2.53 | 5.00 | 5.00 | 1.05 | 3.50 | 1.05 | 5.03 | 4.03 | 0.05 | 0.03 | 2.55 | 1.50 | 2.00 | 0.50 | 1.53 | 0.03 |
| 0239 | Chlorophyta (filamentous) | - | - | - | - | - | - | - | - | - | - | - |  |  | . | - | . |  |
| 0077 | Chondracanthus canaliculatus | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus | 22.50 | 25.50 | 20.50 | 19.00 | 19.50 | 17.50 | 18.00 | 24.50 | 24.50 | 21.00 | 14.00 | 26.00 | 27.00 | 25.00 | 11.50 | 23.50 | 16.50 |
| 1305 | Chondracanthus harveyanus/spinosus | - | - | - | - | - | - | 0.03 | - | 0.03 | - | 0.03 | - | - | - | . | - |  |
| 1302 | Chrysophyta | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  | - |  |
| 0055 | Corallina chilensis | 1.03 | 1.03 | 0.05 | 1.03 | 0.03 | - | 0.05 | - | 0.03 | 1.05 | 0.05 | 0.55 | 0.03 | 0.55 |  | 0.05 | 0.05 |
| 0056 | Corallina vancouveriensis | - |  | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0052 | Cryptopleura ruprechtiana | 41.00 | 39.00 | 35.00 | 55.00 | 47.50 | 18.00 | 28.00 | 53.00 | 47.50 | 37.50 | 5.50 | 18.50 | 13.00 | 24.50 | 22.00 | 8.50 | 19.50 |
| 0115 | Cryptopleura violacea | 1.00 | - | 0.03 | 0.50 | 0.03 | 0.03 | - | - | - | - |  | 1.00 | 0.50 |  |  | - | 0.50 |
| 0036 | Cystoseira osmundacea | 4.03 | 6.03 | 7.00 | 4.50 | 6.00 | 3.50 | 6.53 | 8.50 | 8.00 | 8.50 | 7.53 | 12.00 | 5.50 | 5.00 | 6.50 | 1.53 | 1.53 |
| 1189 | Delesseria decipiens | - | - | - | - | - | - | - | - | - | - | 0.03 |  | 0.50 | - | - | 0.03 |  |
| 0235 | Delesseriaceae (juv.) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata | 0.50 | - | - | 0.03 | 1.50 | 0.08 | - | 2.03 | 0.50 | - | - | 19.00 | - | 1.50 | - | 12.00 | 8.53 |
| 0030 | Dictyoneurum californicum | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | 0.03 | - | - |  |
| 0190 | Dictyota binghamiae | - | - | - | - | - | - | - | - | - |  | - |  | - | - | - | - |  |
| 0031 | Egregia menziesii | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | 0.50 |
| 0071 | Erythrophyllum delesserioides | 0.03 | - | 0.03 | - | - | - | - | 0.03 | - |  |  | 0.03 | - | - | - | - | 0.05 |
| 1304 | Farlowia/Pikea spp.-complex | 0.05 | 0.05 | 0.03 | 0.05 | 0.08 | - | 0.08 | 0.50 | - | 0.03 | 0.08 | 0.08 | 2.08 | 0.58 | 0.05 | 0.08 | 0.05 |
| 0193 | Fauchea laciniata | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum | - |  | - | - | - | - | 0.03 | - |  | 0.03 | 0.03 | - | 1.00 | 1.53 | 0.50 | 0.05 |  |
| 0075 | Gelidium robustum | 0.03 | 0.55 | 1.08 | 1.50 | 0.03 | 1.05 | 2.50 | 1.03 | 0.55 | 0.53 | 0.55 | 2.03 | 2.03 | 0.53 | 1.03 | 2.05 | 1.50 |
| 0206 | Gelidium spp. | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 0.03 | 1.00 | 0.03 | - | - | - | - | - | - | - | 0.55 | 3.00 | 1.53 | - | - | 20.50 | - |
| 0983 | Haplogloia andersonii | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0212 | Hymenena spp. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2376 | Laminaria ephemera | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0035 | Laminaria setchellii | 2.05 | 5.00 | 4.00 | 2.05 | 2.55 | 3.00 | 1.50 | 2.53 | 0.55 | 1.53 | 1.08 | 1.05 | 3.50 | 1.50 | 4.50 | 0.10 | 2.50 |
| 0233 | Laminariales | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | 0.10 | 0.08 |  | - | 9.03 | 0.05 |
| 1640 | Macrocystis pyrifera | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0230 | Mazzaella rosea | 0.03 | - | - | 0.03 | 0.03 | - | - | - | - | - | - | 4.50 | 0.03 |  | - | 2.03 | 0.03 |
| 3383 | Mazzaeila splendens | 3.00 | 5.50 | 6.03 | 1.53 | 2.53 | 1.50 | 0.10 | 1.00 | 2.50 | 0.55 | 0.03 | 14.50 | 2.50 | 5.00 | 5.00 | 12.00 | 6.50 |
| 1014 | Melobesia mediocris | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0094 | Microcladia borealis | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0095 | Microcladia coulteri | 1.58 | 3.03 | 1.08 | 0.10 | 0.10 | 0.10 | 0.58 | 4.00 | 0.08 | 1.05 | - | 4.53 | 1.05 | 1.08 | 0.58 | 0.08 | 1.55 |
| 0153 | Neoptilota spp. | - | - |  | - | 0.03 | - | - | - | - | - | - | 0.03 | 0.03 |  | - | - |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | : | 23-Jun-92 | 26-Aug-92 | 19-Nov-92 | 24-Jun-93 | 23-Sep-93 | 22-Nov-93 | 16-Feb-94 | 3-Jun-94 | 31-Aug-94 | 21-Nov-94 | 24-Apr-95 | 19-Jul-95 | 11-Apr-96 | 24-Oct-96 | 13-0ct-97 | 3-Jun-98 | 21-Sep-98 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 0.03 | - | - | 0.03 | - | 0.03 | - | 0.05 | 0.03 | - |  | 0.55 | 0.05 | 0.58 | 0.03 | 2.53 | 1.03 |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - |  | - |  |  | - | 0.03 |  |  | 0.03 | - | 0.03 | 0.03 |
| 0184 | Osmundea spp. |  | 5.53 | 3.53 | 3.53 | 5.00 | 2.55 | 2.05 | 3.50 | 5.50 | 2.53 | 4.50 | 0.58 | 2.50 | 2.53 | 3.53 | 1.03 | 0.05 | 0.53 |
| 0199 | Phaeophyta |  | - | - | - | - | - |  | - | - | - | - | - | - |  |  | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0203 | Pikea robusta |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | $\cdot$ | - | - | - | - | - | - |  |  | $\stackrel{-}{-}$ | $\bigcirc$ | - | $\stackrel{-}{-}$ |  |
| 0118 | Polyneura latissima |  | 0.58 | - | - | 1.05 | - | - | 0.05 | 1.03 | - | - | - | 0.50 | 3.50 | 0.03 | - | 2.05 | 0.50 |
| 0099 | Porphyra spp. |  | - | - | - |  | - | - | - | - | - | - | - | - | - | 0.03 | - | 15.50 | 0.05 |
| 0220 | Prionitis australis |  | - | - | 0.03 |  | - | - | ${ }^{-}$ | - | - | - | - | - |  | - | 5 | - |  |
| 0106 | Prionitis spp. |  | 0.03 | 0.05 | 0.08 | 0.50 | 0.58 | 1.05 | 2.00 | 0.53 | 0.50 | 1.50 | 0.55 | 1.00 | 0.03 | 1.05 | 0.53 | 0.55 | 4.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - |  | 0.03 | - | - | - | - | - | - | - |  | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0042 | Pterygophora californica |  | 1.05 | 6.50 | 3.53 | 1.50 | 2.05 | 2.00 | 3.50 | 0.58 | 1.03 | 5.00 | 2.03 | 1.50 | 2.50 | 4.50 | 1.03 | 0.10 | 11.50 |
| 0187 | Pugetia firma |  | - | 0.03 | 0.03 | - | - | - | - |  | - | 0.03 | - | 0.03 | - | 0.05 | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - |  | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | $\cdot$ | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 7.00 | 12.00 | 6.50 | 9.50 | 9.00 | 6.00 | 11.50 | 12.00 | 10.00 | 8.50 | 6.50 | 16.00 | 18.50 | 11.00 | 8.00 | 9.00 | 9.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | 0.05 | 0.03 | 0.53 | 0.50 | - | 0.05 | 0.53 | - | 0.05 | 0.05 | 1.05 | 0.08 | - | - | 0.55 |  |
| 0155 | Scinaia confusa |  |  |  | - | - | - | - | - | - | - | - | - | 0.05 | - | 0.03 | - | - | 0.05 |
| 0110 | Smithora naiadum |  |  | - | - | - | - | - | - - | - | - |  | $\bigcirc$ | - | - | - | - | 50 |  |
| 0014 | Ulva spp. |  | 0.05 | 0.10 | 0.10 | 0.03 | 0.55 | 0.08 | 0.05 | 0.03 | 0.05 | 0.03 | 0.05 | 0.10 | 0.53 | 0.05 | - | 5.00 | 1.53 |
| 0057 | coralline crust |  | 32.50 | 46.50 | 41.00 | 31.50 | 29.00 | 65.50 | 42.50 | 32.50 | 23.00 | 46.50 | 48.00 | 37.00 | 38.50 | 39.00 | 39.50 | 51.50 | 45.00 |
| 1300 | filamentous red algae complex |  | 0.08 | 0.03 | 0.03 | 0.03 | 0.03 | 0.08 | - | - | 0.50 | 0.05 | - | 0.03 | - | - | 0.03 | - |  |
| 0059 | non-coralline crust |  | 0.05 | 2.03 | 1.53 | 0.03 | - | 4.00 | 2.05 | 0.58 | 0.05 | 1.03 | 2.05 | 0.03 | 1.03 | 0.55 | 0.10 | 1.53 | 0.10 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ! | $\begin{array}{r} 104 \\ \text { 12-Feb-99 } \end{array}$ | $\begin{array}{r} 105 \\ \text { 12-May-99 } \end{array}$ | $\begin{array}{r} 106 \\ \text { 16-Aug-99 } \end{array}$ | $\begin{array}{r} 107 \\ \text { 19-Oct-99 } \end{array}$ | $\begin{array}{r} 108 \\ \text { 18-May-00 } \end{array}$ | $\begin{array}{r} 109 \\ \text { 11-Jul-00 } \end{array}$ | $\begin{array}{r} 110 \\ 25-\operatorname{Sep}-00 \end{array}$ | $\begin{array}{r} 111 \\ \text { 12-Dec-00 } \end{array}$ | $\begin{array}{r} 112 \\ \text { 4-Apr-01 } \end{array}$ | $\begin{array}{r} 113 \\ \text { 28-Jun-01 } \end{array}$ | $\begin{array}{r} 114 \\ \text { 3-Oct-01 } \end{array}$ | $\begin{array}{r} 115 \\ 27-\text { Nov-01 } \end{array}$ | $\begin{array}{r} 116 \\ \text { 21-Mar-02 } \end{array}$ | $\begin{array}{r} 117 \\ \text { 10-May-02 } \end{array}$ | $\begin{array}{r} 118 \\ 21 \text {-Aug-02 } \end{array}$ | $\begin{array}{r} 119 \\ \text { 3-Dec-02 } \end{array}$ | $\begin{array}{r} 120 \\ \text { 10-Mar-03 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | 0.50 | - | - | - | - | - | - | - | - |  |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | $\cdot$ | - | - | - | - | - |  | - | - | - | - | - |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.05 | 0.08 | 0.50 | - | - | - | - |  | 0.03 | - | - | - | 0.53 | - | 0.03 | 0.50 |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - | - | - |  | - |  |  | - | - | - |  |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - |  | - | - | 0.03 | 0.05 | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 21.50 | 18.50 | 15.00 | 14.50 | 10.50. | 20.00 | 9.00 | 9.50 | 10.50 | 21.00 | 14.00 | 20.50 | 13.00 | 15.00 | 20.00 | 21.00 | 17.50 |
| 0064 | Callophyllis flabelluata |  | 0.03 | 0.03 | - | - | - | - | - | - |  |  | 0.05 |  | 0.53 | 1.03 | 0.05 | - |  |
| 0112 | Callophyllis spp. |  |  | 0.03 | - | - | - | 2.03 | 0.05 | 0.50 | 1.50 | 2.53 | 2.03 | 1.50 | 2.08 | 5.00 | 0.08 | - | 0.50 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - |  |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - |  |  | - | - | - | - |  |  |  |
| 0125 | Chondracanthus corymbiferus |  | 10.50 | 12.00 | 7.50 | 9.00 | 11.00 | 11.50 | 8.50 | 10.00 | 10.50 | 7.50 | 9.00 | 8.50 | 8.00 | 10.50 | 7.50 | 7.00 | 6.50 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - | - | - |  |  | - | - | - |  |  |  |  |  |
| 1302 | Chrysophyta |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - |  | - | - | - |  |
| 0055 | Corallina chilensis |  | 0.03 | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | 0.05 |  |
| 0056 | Corallina vancouveriensis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0052 | Cryptopleura ruprechtiana |  | 16.00 | 21.00 | 17.50 | 17.50 | 8.00 | 12.00 | 10.50 | 8.50 | 5.50 | 8.50 | 12.00 | 4.50 | 0.05 | 10.53 | 1.05 | 0.03 |  |
| 0115 | Cryptopleura violacea |  |  | 0.03 |  | - |  | - | - | - | - | - |  |  |  |  |  |  |  |
| 0036 | Cystoseira osmundacea |  | 0.05 | 0.50 | 1.00 | 0.55 | 1.03 | 0.03 | 0.05 | 1.05 | 1.00 | 0.53 | 1.00 | 0.03 | 3.00 | 2.50 | 3.05 | 2.03 | 1.53 |
| 1189 | Delesseria decipiens |  |  |  | - | - | 0.03 | - . | - | - | - |  |  | - | - | - | - | - | 2.50 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | - | 5.00 | 10.50 | 8.50 | 2.50 | - | - |  | - | 0.58 | 3.50 | 0.05 | - | 1.53 |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | 0.50 | - | 0.05 | - | - | - |  |
| 0190 | Dictyota binghamiae |  |  | - | - | - | - | - | - | - | - | - |  | - | - | - |  | - |  |
| 0031 | Egregia menziesii |  | 0.03 | 0.03 | 0.05 | 0.08 | 0.50 | - | - | - | - | 0.03 |  | - | - | - | - | 0.03 |  |
| 0071 | Erythrophyllum delesserioides |  |  | 0.03 | - | 0.03 | 0.53 | - | $\stackrel{-}{\circ}$ | $\square^{-}$ | $0 \cdot$ | 0.03 | 0.53 | - | ${ }^{-}$ | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 | 0.03 | 0.08 | 0.08 | 0.05 |  | - | 1.00 | 1.08 | 0.08 | 0.53 | 0.53 |
| 0193 | Fauchea laciniata |  |  | - | - | - | - | - | - | 0.03 |  | - | - | - | - | - | - |  |  |
| 0072 | Gastroclonium subarticulatum |  | 0.03 | - | - | - | - | 0.05 | - | - | 0.03 | 0.03 | - | - | 0.03 | - | 0.03 | - |  |
| 0075 | Gelidium robustum |  | 0.03 | 0.53 | 0.03 | 1.00 | 1.03 | 2.50 | 4.50 | 2.50 | 0.55 | 4.00 | 5.50 | 1.05 | 3.50 | 1.00 | 2.03 | 2.00 | 3.00 |
| 0206 | Gelidium spp. |  | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | 0.03 |  |  |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.08 | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | - | 0.53 | - | - | - | - | 1.50 | - | - | - | - | - | - |  |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | 0.03 | - | 1.00 | - | - | - | - | - | - | - | - | - |  |
| 2376 | Laminaria ephemera |  | - | - | - | - |  | - |  | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 0.10 | 5.00 | 1.53 | 0.58 | 0.58 | 2.03 | 2.50 | 3.00 | 1.53 | 1.55 | 5.50 | 1.53 | 6.00 | 7.00 | 4.50 | 3.53 | 4.50 |
| 0233 | Laminariales |  | 0.08 | 0.05 | 0.03 | 0.10 | 0.05 | 5.50 | - | 0.03 | 0.10 | 0.10 | 0.05 | 0.10 | - | . |  | - | 0.53 |
| 1640 | Macrocystis pyrifera |  | - | - | - |  |  | 0.05 | - | 1.50 | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 1.05 | - | - | - | 0.08 | - | - | 0.03 |  | 0.03 | - | - | - | - |  | - |  |
| 3383 | Mazzaella splendens |  | 2.03 | 0.03 | 2.03 | 0.03 | 1.05 | 2.50 | 4.00 | - | 0.50 | 0.03 | - | 0.53 | - | - | 2.08 | 0.05 |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - |  |  | - | - | - | - |  |  |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.08 | 2.55 | 0.03 |  | - | 0.03 | 0.10 | - | 0.03 | 0.03 | 0.05 | 0.03 | 4.50 | 4.50 | 0.05 | 0.10 | 0.05 |
| 0153 | Neoptilota spp. |  |  | - | - | - | - |  | 0.05 | 0.05 | - | 0.03 | 0.03 | 0.03 | 1.50 | 1.00 |  | 0.03 | 0.03 |


| Species Code (spcode) | Species | $\leqslant$ | 12-Feb-99 | 12-May-99 | 16-Aug-99 | 19-Oct-99 | 18-May-00 | 11-Jul-00 | 25-Sep-00 | 12-Dec-00 | 4-Apr-01 | 28-Jun-01 | 3-0ct-01 | 27-Nov-01 | 21-Mar-02 | 10-May-02 | 21-Aug-02 | 3-Dec-02 | 10-Mar-03 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 0.03 | 0.05 | 0.03 | 0.03 | 0.08 | 2.53 | 2.00 | 0.53 | 0.03 | 0.05 | 0.08 | 0.03 | - | 0.08 | 0.50 | 0.03 |  |
| 1154 | Nienburgia andersoniana |  | - | - | - |  |  | - | - | - |  | 0.50 | 0.05 | - | - | - | - |  |  |
| 0184 | Osmundea spp. |  | 0.05 | 0.55 | 0.03 | 0.50 | 0.55 | 1.05 | 1.55 | 1.05 | 0.53 | 1.03 | 0.55 | 0.55 | 2.03 | 0.50 | 0.53 | 0.55 |  |
| 0199 | Phaeoohyta |  |  | - | - | - | - | - |  |  |  | - | - | - | - |  |  | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | 0.03 | 0.03 | - | - | - | 0.03 | - | - | - | 0.03 |
| 0203 | Pikea robusta |  | - | - | - | - | - |  |  | - | 0.03 | - | - | - |  |  | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - |  | - | - | - |  | - |  | - |  | - | - | - |  |
| 0118 | Polyneura latissima |  | 0.03 | 2.00 | - | - | 2.53 |  | - | - | 1.03 | 0.03 | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  |  | - | - | - | 1.05 |  | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | 0.03 | - | - | 0.03 |  | - | 4.00 | $\stackrel{-}{-}$ | - | - | 0.03 | $\stackrel{-}{-}$ | 2.50 | 1.50 | - | - | 0.53 |
| 0106 | Prionitis spp. |  | 2.03 | 1.05 | 2.05 | 1.53 | 3.00 | 2.03 | 2.50 | 2.00 | 1.03 | 1.53 | 2.00 | 1.05 | 3.00 | 0.53 | 1.05 | 1.53 | 1.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - |  |  | - | - | - |  | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | 2.50 |  | 0.03 | - | - | - ${ }^{-}$ | $\cdots$ | 0.03 |  | - | - | 0.08 |
| 0042 | Pterygophora californica |  | 3.50 | 14.50 | 11.00 | 12.50 | 3.50 | 6.50 | 12.50 | 7.50 | 5.50 | 6.50 | 7.50 | 4.00 | 8.00 | 9.50 | 5.50 | 8.50 | 1.53 |
| 0187 | Pugetia firma |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0219 | Rhodophyta (iuv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - |  | - | - | 0.03 | $5 \cdot$ | 0.03 | - | - | 170 | 0.53 |
| 0159 | Rhodymenia spp. |  | 9.50 | 15.00 | 16.00 | 14.50 | 14.50 | 13.50 | 10.50 | 14.00 | 7.00 | 22.50 | 10.00 | 15.50 | 17.00 | 13.00 | 37.00 | 17.00 | 15.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | 0.03 | . | - | 0.03 | - | - |  |  | - | - | - | 0.03 | 0.03 | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | 0.05 | - | 0.05 | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  |  | - | - | - | - | - |  | - |  | - | - | - | $\cdots$ | - | ${ }^{-}$ | - |  |
| 0014 | Ulva spp. |  | 0.08 | 0.08 | 0.03 | 0.05 | 1.03 | 0.05 | 0.10 | 0.10 | 0.08 | 0.08 | 0.10 | 0.03 | 0.10 | 0.08 | 0.08 | 0.05 | 2.53 |
| 0057 | coraline crust |  | 45.50 | 41.50 | 24.00 | 24.50 | 36.50 | 44.50 | 29.50 | 37.00 | 42.00 | 29.00 | 65.50 | 28.00 | 67.50 | 57.00 | 20.50 | 40.50 | 74.50 |
| 1300 | filamentous red algae complex |  |  |  |  | - | 0.53 |  |  | 0.03 |  | - | - | - | 0.05 | - | 0.03 | - | 1.53 |
| 0059 | non-coralline crust |  | 0.58 | 0.03 | 0.03 | - | 0.10 | 0.58 | 0.10 | 0.50 | 0.05 | 0.55 | - | 0.10 |  | - | 0.03 | 0.55 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

Sampling code: 6 = Coverage Based on \# of Contact Points


| Species Code (spcode) | Species | $\leqslant$ | 23-Jun-03 | 10-Sep-03 | 7-Jan-04 | 13-Feb-04 | 17-May-04 | 20-Aug-04 | 5-Feb-05 | 12-May-05 | 24-Jun-05 | 9-Aug-05 | 9-Dec-05 | 9-Mar-06 | 31-May-06 | 21-Aug-06 | 16-Nov-06 | 5-Mar-07 | 20-Jun-07 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 3.03 | 2.50 | 0.03 | - | 0.10 | 1.55 |  | 1.03 | 1.58 | 1.53 | 0.03 | 0.03 | 3.00 | 2.00 | 0.03 | 0.05 | 2.53 |
| 1154 | Nienburgia andersoniana |  | 0.50 | - | - | - | - |  |  | - | - | - | - | - | - |  |  |  |  |
| 0184 | Osmundea spp. |  | - | - | 0.03 | 1.05 | 0.03 | . | 0.05 | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.05 | 0.50 |
| 0199 | Phaeophyta |  | - | - | - |  | - | - | - | - | - | - | - |  |  | - | - | -- |  |
| 0135 | Phyllospadix spp. |  | - | 0.03 | - | - | 0.05 | - | - | 0.03 | 0.03 | - |  | 0.03 | - | - | - | - |  |
| 0203 | Pikea robusta |  |  | - | - | - | - | - | - |  |  | - |  | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | 0.08 | 0.08 |  | 0.05 |  | $\stackrel{-}{-}$ | - | 0.03 | 0.03 | 0.03 | 0.05 |
| 0118 | Polyneura latissima |  | - | $\therefore$ - | - | $=$ | - | - | - |  | - |  | - | 0.03 | - | - | - |  |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | 3.03 |  | 0.05 | - | 1.53 | - | - | - |  |  |
| 0220 | Prionitis australis |  | - | - | - | 0.53 | - | - | 0.03 | 0.03 |  | - | - | - | - | - | - | 0.50 |  |
| 0106 | Prionitis spp. |  | 3.00 | 1.53 | 1.03 | 0.50 | 0.55 | 0.03 | 0.05 | - | - | 0.05 | 0.05 | - | 0.03 | - | 0.05 | - | 0.50 |
| 0221 | Ptercladiella caloglossoides |  |  | - | - | - | - | - | - | - |  | - |  | - | - | - | - | $\stackrel{-}{-}$ |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | 0.05 | 1.00 | - | 0.05 | 0.03 |  | - | 0.03 | $\cdots$ | - | - | 0.05 | 0.05 |  |
| 0042 | Pterygophora californica |  | 4.50 | 2.03 | 13.00 | 6.50 | 2.53 | 3.53 | 2.50 | 5.00 | 2.03 | 2.50 | 3.50 | 4.03 | 1.53 | 6.53 | 4.03 | 4.00 | 1.05 |
| 0187 | Pugetia firma |  | . | - | - | . | 0.05 | - | - | - |  | - | 0.03 |  | - | - | 0.03 | 0.05 |  |
| 0219 | Rhodophyta (iuv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 25.00 | 31.50 | 15.50 | 15.00 | 12.50 | 31.00 | 13.00 | 13.50 | 20.00 | 14.00 | 14.50 | 16.00 | 13.00 | 12.00 | 15.00 | 16.00 | 20.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | . | . | . | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | 0.05 | - | - | - | 0.03 | - | - | 0.03 | - | 0.03 | - | - | 0.03 | 0.03 | - | - |  |
| 0110 | Smithora naiadum |  |  | - | - | - | - | - | - |  | - |  | - | - | - | - | $\because$ | - |  |
| 0014 | Ulva spp. |  | 0.08 | 0.10 | 0.10 | 0.10 | 0.08 | - | 0.05 | 3.55 | - | 0.08 | 0.05 | 2.53 | 0.03 | 0.05 | 0.08 | 0.05 | 0.03 |
| 0057 | coralline crust |  | 23.50 | 19.00 | 57.00 | 65.00 | 28.50 | 22.00 | 32.50 | 39.00 | 28.00 | 36.50 | 25.50 | 27.00 | 29.00 | 41.00 | 32.50 | 38.00 | 18.00 |
| 1300 | filamentous red aigae complex |  | - | - |  | 0.55 | 0.03 | - |  | 1.08 |  |  |  | 5.00 | 0.03 | - | - | 2.03 |  |
| 0059 | non-coralline crust |  | - | 0.03 | 1.00 | - | 0.55 | - | 2.00 | 0.55 | 0.05 | 2.00 | 0.05 | 0.10 | 1.55 | 0.03 | 2.03 | 0.05 | 0.50 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

| Sampling code: 6 = Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 |  |
| Species |  | ! | 31-Aug-07 | 11-Dec-07 | 21-Mar-08 | 28-May-08 | 17-Sep-08 | 18-Nov-08 | 14-Jan-09 | 9-Jun-09 | 4-Sep-09 | 17-Nov-09 | 19-Apr-10 | 28-May-10 | 5-Aug-10 | 28-Oct-10 | 12-Jan-11 | 2-May-11 | 18-Aug-11 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - |  | - |  | - | - | - | - |  | - | - | - | - |  | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | - | 0.03 | - | 0.03 | - | 0.03 | - | - | - | - | - | - | - | 0.03 | 0.03 | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - |  | - |  | - | - | - | - - | - |  | - | - | - |  |  |
| 0245 | Bryopsis spp. |  | - |  | - |  | ${ }^{-}$ |  | - | - | - |  | - |  | - | - | - |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 33.50 | 32.50 | 30.50 | 33.00 | 32.50 | 33.00 | 34.50 | 36.00 | 35.50 | 38.00 | 25.00 | 35.00 | 34.00 | 30.00 | 32.00 | 38.00 | 42.00 |
| 0064 | Callophyllis flabelluata |  | - |  | 0.05 | 0.03 | - |  | - | - | 0.03 |  | - | 0.03 | 0.05 | - |  | 0.03 | 0.03 |
| 0112 | Callophyllis spp. |  | - | - | 0.03 |  | - | 0.05 | - | - | . | 0.03 | - |  | - | - |  |  |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | 0.03 | 0.05 | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - |  | - |  | - | - |  |  |  |  | - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 0.05 | 1.05 | 0.05 | 1.05 | 0.08 | 1.08 | 1.53 | 0.53 | 0.50 | 0.05 | 0.03 | 1.05 | 0.55 | 0.03 | 0.05 | 0.53 | 0.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | - | 1.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | 0.05 |
| 0055 | Corallina chilensis |  | 0.53 | 0.03 | - | 0.08 | 0.05 | 0.05 | 0.08 | 0.03 | 0.10 | 0.53 | 0.03 | 0.05 | 0.08 | 0.03 | - | 0.58 | 0.05 |
| 0056 | Corallina vancouveriensis |  |  | - | - |  |  |  | - | - |  | - |  |  |  | - |  |  |  |
| 0052 | Cryptopleura ruprechtiana |  | 0.03 | - | 0.50 | 1.53 | 0.05 | 0.05 | 0.53 | 1.50 | 0.50 | - | 0.03 | 0.55 | 0.03 | 0.03 | - | 0.05 | 0.03 |
| 0115 | Cryptopleura violacea |  |  | - |  |  |  | - |  | - |  | - | 0.03 |  | - | - | - | - |  |
| 0036 | Cystoseira osmundacea |  | 7.00 | 7.53 | 6.50 | 5.03 | 7.53 | 7.50 | 7.50 | 6.50 | 10.00 | 10.00 | 9.53 | 8.50 | 10.50 | 5.00 | 10.00 | 11.00 | 10.50 |
| 1189 | Delesseria decipiens |  | - | - | 0.08 | - | - | - | 0.03 | - | - | - | 0.08 | 0.05 | - | - | - | 0.05 |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | 5.50 | - | 0.05 | 16.00 | 9.00 | 0.50 | 0.03 | 7.03 | 2.00 | - | 0.08 | 4.50 | 5.00 | 3.05 | - | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | . |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | . |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | - | 0.03 | 0.05 | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.03 | - | - | 0.05 | 0.03 | - | 0.03 | 0.05 | 0.05 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 1.03 | 1.53 | 1.08 | 3.00 | 1.55 | 2.50 | 2.50 | 2.00 | 1.53 | 1.53 | 0.58 | 1.05 | 0.55 | 1.05 | 1.08 | 1.05 | 0.55 |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - |  |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | 0.03 | - | - | - | - | - | - | 0.55 |  | - | - | - |  |  |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 2376 | Laminaria ephemera |  | - | - | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - | - | $\stackrel{-}{-}$ |  |
| 0035 | Laminaria setchellii |  | 4.03 | 3.03 | 2.03 | 1.53 | 5.50 | 3.50 | 1.53 | 2.03 | 3.53 | 3.00 | 3.50 | 2.50 | 2.00 | 1.05 | 3.03 | 2.05 | 1.03 |
| 0233 | Laminariales |  | - | - | 0.05 | 1.08 | 0.05 | 0.55 | - | 0.05 | - | - | 0.08 | 0.10 | 0.10 | 0.05 | - | 0.08 | 0.03 |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - | 3 | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 3383 | Mazzaella splendens |  | - | - | 0.03 | - | - | - | - | - | - | - | - |  | - | - | - | - | 0.03 |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | , | - | $\bigcirc$ | - | - | $0 \cdot$ | - | $0 \cdot$ | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | 0.08 | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.05 | 0.03 | - | 0.03 |  |
| 0153 | Neootilota spp. |  |  |  |  | 0.03 |  |  |  |  |  |  |  |  |  |  |  | 0.03 |  |


| Species Code (spcode) | Species | ! | 31-Aug-07 | 11-Dec-07 | 21-Mar-08 | 28-May-08 | 17-Sep-08 | 18-Nov-08 | 14-Jan-09 | 9-Jun-09 | 4-Sep-09 | 17-Nov-09 | 19-Apr-10 | 28-May-10 | 5-Aug-10 | 28-Oct-10 | 12-Jan-11 | 2-May-11 | 18-Aug-11 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 0.53 |  |  | 1.53 | 3.50 | 1.03 |  | 0.58 | 0.05 | 0.03 | 0.05 | 1.55 | 1.05 | 0.05 | 0.03 | 0.03 | 0.05 |
| 1154 | Nienburgia andersoniana |  | - | - |  | - | - |  |  |  | - |  | - |  | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | 0.03 | 0.03 | - | - | 0.05 | 0.05 | 0.05 | 0.03 | 0.05 | - | - | - | 0.05 | 0.05 | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | 0.03 | 0.03 | 1.00 | 0.05 | 0.03 | 0.05 | 1.03 | - | 1.50 | 0.03 | 0.50 | 0.05 | 0.03 | 0.05 | 0.50 | 1.00 | 0.03 |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | 0.03 |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |  |
| 0220 | Prionitis australis |  | - | - | 0.53 | - | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | 0.03 |  |
| 0106 | Prionitis spp. |  | 0.03 | 0.03 | - | 0.50 | 0.03 | - | 0.05 | - | 0.53 | 0.08 | 0.03 |  | 0.03 | 0.03 | - | 0.03 | 0.03 |
| 0221 | Percladiella caloglossoides |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | - | - | - | 0.03 | - | - | - | - | 0.05 | - | - | - | - | 0.03 |  |  |
| 0042 | Pterygophora californica |  | 5.50 | 8.00 | 4.00 | 4.00 | 3.50 | 4.03 | 4.53 | 4.00 | 3.50 | 4.00 | 4.00 | 4.50 | 6.00 | 4.00 | 3.53 | 5.00 | 3.00 |
| 0187 | Pugetia firma |  | - | - | - |  | - | 0.05 | 0.05 | - | 0.03 | 0.03 | - | - | - | - | - | 0.05 |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | 0.55 | $\bigcirc$ | - | - | - | - | 0.53 |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 17.00 | 9.50 | 14.00 | 12.50 | 15.50 | 14.50 | 13.50 | 11.50 | 13.50 | 14.50 | 7.00 | 13.50 | 13.00 | 13.00 | 6.50 | 12.00 | 16.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | 0.03 | - | - |  | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0110 | Smithora naiadum |  |  | - | - |  | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.05 | 0.03 | 0.03 | 0.55 | 0.58 | 0.08 | 0.55 | 0.58 | 0.10 | 0.08 | 0.08 | 0.08 | 0.05 | 0.05 | 0.03 | 0.08 | 0.08 |
| 0057 | coralline crust |  | 35.00 | 23.50 | 29.50 | 42.50 | 35.50 | 32.50 | 35.50 | 36.50 | 36.50 | 36.50 | 42.00 | 37.00 | 43.50 | 44.00 | 43.50 | 35.00 | 31.00 |
| 1300 | filamentous red algae complex |  |  |  | 1.55 | 0.55 | 0.03 | 0.03 | 1.50 | 0.03 |  | 1.00 | 0.05 | 0.05 | - |  |  | - | 0.50 |
| 0059 | non-coralline crust |  | 0.53 | 0.05 | 0.50 | 0.50 | 1.00 | - | 0.50 | 0.53 | 1.00 | 3.05 | 4.00 | 1.55 | 2.03 | 3.00 | 2.03 | 0.53 | 1.53 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: $6=$ Coverage Based on \# of Contact Points



| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ! | 10-Nov-11 | 5-Mar-12 | 25-Jun-12 | 11-Sep-12 | 11-Dec-12 | 14-Mar-13 | 26-Apr-13 | 12-Aug-13 | 30-Oct-13 | 4-Apr-14 | 18-Jun-14 | 12-Aug-14 | 8-Dec-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0041 | Nereocystis luetkeana |  | 0.03 | - | - | - | - | - | - |  |  |  |  |  |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | 0.53 | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - | 0.05 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium paciicum |  | 1.50 | 0.50 | 1.03 | 0.50 | 0.50 | 0.53 | 0.08 | 0.50 | 0.05 | 0.53 | 0.05 | 0.05 | 0.05 |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.50 | 0.03 | 0.03 | 0.50 |
| 0106 | Prionitis spp. |  | 0.03 | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | 0.03 | - | - | 0.05 | - | - | - | - | - | 0.03 | 0.03 |
| 0042 | Pterygophora californica |  | 4.50 | 4.50 | 5.00 | 2.05 | 3.53 | 3.03 | 3.03 | 4.00 | 1.53 | 3.00 | 4.00 | 4.00 | 0.53 |
| 0187 | Pugetia firma |  | 0.03 | 0.05 | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | 0.03 | 1.50 | 0.03 | - | - | - | 0.03 |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 12.00 | 15.00 | 10.50 | 9.03 | 10.50 | 14.50 | 15.50 | 13.50 | 12.50 | 7.50 | 11.00 | 15.00 | 6.50 |
| 0104 | Sarcodiotheca gaudichaudii |  |  |  | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.10 | 0.55 | 0.08 | 0.08 | 0.05 | 0.08 | 0.03 | 0.08 | 0.08 | - | 0.03 | 0.08 |  |
| 0057 | coralline crust |  | 38.50 | 37.00 | 38.00 | 29.00 | 39.00 | 34.00 | 38.50 | 36.50 | 38.00 | 47.50 | 47.50 | 47.00 | 47.50 |
| 1300 | filamentous red algae complex |  | 0.05 | - | 2.00 | - | - | 0.05 | - | 0.50 | - | - | - |  |  |
| 0059 | non-coralline crust |  | 0.53 | - | 0.05 | 0.08 | 0.08 | - | 0.03 | 0.50 | 1.00 | 0.50 | 1.05 | 0.03 | 1.55 |

## Subtidal Line Contact - Survey Invertebrate Abundance (\% Cover for 7 m squared) - Patton Cove SC $1-3 \mathrm{~m}$

| Sampling code: 6 = Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 4 | 7 | 8 | 9 | 12 | 13 | 15 | 16 | 18 | 19 | 22 | 25 | 26 | 28 | 31 |
| Species |  | Survey Date: | 9-Oct-76 | 28-Feb-77 | 27-Jun-77 | 12-Apr-78 | 12-Jun-78 | 30-Aug-78 | 5-Feb-79 | 4-May-79 | 13-Sep-79 | 13-Nov-79 | 17-Mar-80 | 29-May-80 | 13-Nov-80 | 20-Apr-81 | 15-Jul-81 | 22-Oct-81 | 7-Apr-82 |
| Code (spcode) | Species | Sampling Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. | 6 | - |  | - | - |  | - |  |  |  | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetraclita spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. | 6 | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | 1.00 | - | - |  |
| 0266 | Epiactis prolifera | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - |  |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) | 6 | 0.50 | 0.50 | - | - | . | - | - | - | - | - | - | - | - | - | - | - |  |
| 0615 | Serpulidae | 6 | - | - | - | - | . | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus | 6 | - | 0.50 | - | $\stackrel{-}{-}$ | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens | 6 | - | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate A

## Sampling code: $6=$ Coverage Based on \# of 1

|  |  |  | 32 | 33 | 37 | 38 | 39 | 41 | 44 | 45 $1.0 c t 84$ | $\begin{array}{r}47 \\ \hline \text { 30-85 }\end{array}$ | ( $\begin{array}{r}49 \\ \hline\end{array}$ | 50 | 27-sap-85 |  | 22-Apr-86 | 砳 57 | [ $\begin{array}{r}61 \\ \text { 14-May-87 }\end{array}$ | [r-62 | $\begin{array}{r} 64 \\ \text { 14-Oct-87 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) | Species | ؛ | 2-Jul-82 | 23-Sep-82 | 18-May-83 | 26-Jul-83 | 14-Sep-83 | 23-Jan-84 | 12-Jul-84 | 1-0ct-84 | 30-Jan-85 | 1-May-85 | 22-Jul-85 | 27-Sep-85 | 18-Nov-85 | 22-Apr-86 | 10-Sep-86 | 14-May-87 | 30-Jul-87 | 14-Oct-87 |
| 0394 | Balanus spp. |  |  |  |  |  |  | - |  | - | - |  | - | - |  |  | - |  |  |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - |  | - | - | - | - | - | - | - | - | 0.50 | - | - | 0.50 |  |
| 0266 | Epiactis prolifera |  | - | - |  | - |  |  | - | - | - | - | - | - | - |  | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | 0.50 | - | - |  | - | - | 2.50 | 2.50 | 5.00 | 3.00 | 8.00 | 12.50 | 11.50 | 2.00 | 2.00 | 4.00 | 11.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | 0.50 | 0.50 |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.50 | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 2.50 | - | - | 0.50 |
| 0480 | tunicates, compound/social |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Subtidal Line Contact - Survey Invertebrate $A$

## Sampling code: $6=$ Coverage Based on \# of

Code

| (spcode) | Species |
| :---: | :--- |
| 0394 | Balanus spp. |
| 0773 | Balanus/Tetraclita spp. |
| 0683 | Dendropoma spp. |
| 0266 | Epiactis prolifera |
| 0735 | Phragmatopoma californica |
| 0492 | Porifera (encrusting) |
| 0615 | Serpulidae |
| 0318 | Serpulorbis squamigerus |
| 0404 | Tetracila rubescens |
| 0507 | bryozoa (encrusting) |
| 0480 | tunicates, compound/social |

tunicates, compound/social
$\begin{array}{rrrrrrrrrr}65 & 66 & 68 & 69 & 70 & 71 & 72 & 73 & 74 & 75 \\ \text { 10-Feb-88 } & \text { 26-May-88 } & \text { 15-Sep-88 } & \text { 27-Feb-89 } & \text { 13-Jun-89 } & \text { 6-Sep-89 } & \text { 20-Nov-89 } & \text { 20-Feb-90 } & \text { 20-Apr-90 } & \text { 17-Jul-90 }\end{array}$ $\begin{array}{llllll} & \text { 26-May-88 } & \text { 15-Sep-88 } & \text { 27-Feb-89 } & \text { 13-Jun-89 } & \text { 6-Sep-89 }\end{array}$ 394 Balanus spp 0683 Dendropoma spp.
266 Epiactis prolifera
0492 Porifera (encrusting)
0318 Serpulorbis squamigerus
8.50
5.00
0.50

| - | - | - |
| :--- | :--- | :--- |
| - | - | - |
| - | - | - |
| - | - | 700 |


|  | - | - | - |
| ---: | ---: | ---: | ---: |
|  | - | - | - |
|  | - | - | - |
| .0 | 10.00 | 6.50 | 9.50 |
| - | - | - | - |
| - | - | - | - |
| - | 0.50 | 1.00 | - |
| - | - | - | - |
| - | - | - | 1.00 |


| - | - | - | - | - | - | - | - | - | - | - |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| - | - | - | - | - | - | - | - | - | - | - |
| 0.50 | - | - | - | - | - | - | - | - | - | -500 |
| - | - | - | -50 |  |  |  |  |  |  |  |
| 9.00 | 8.50 | - | - | - | 8.50 | 2.00 | 1.50 | 2.50 | 0.50 | - |
| - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | 0.50 | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - |  |  |
| - | - | - | - | - | - | - | - | - | - | - |
| 0.50 | - | - | - | - | - | - | - | - | - | - |


| Subtidal Line Contact - Survey Invertebrate $A$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | ¢ | ${ }^{86}$ | - ${ }^{87}$ | ${ }^{88}$ | ${ }^{89}$ | - 90 | - $\begin{array}{r}91 \\ 31-A 4944\end{array}$ | -92 |  |  | $\begin{array}{r} 96 \\ \text { 11-Apr-96 } \end{array}$ | $\begin{array}{r} 97 \\ \text { 24-Oct-96 } \end{array}$ | $\begin{array}{r} 99 \\ \text { 13-Oct-97 } \end{array}$ | $\begin{array}{r} 101 \\ \text { 3-Jun-98 } \end{array}$ | $\begin{array}{r} 103 \\ 21-\operatorname{Sep}-98 \end{array}$ | $\begin{array}{r} 104 \\ \text { 12-Feb-99 } \end{array}$ | $\begin{array}{r} 105 \\ \text { 12-May-99 } \end{array}$ | $\begin{array}{r} 106 \\ \text { 16-Auq-99 } \end{array}$ | $\begin{array}{r} 107 \\ \text { 19-Oct-99 } \end{array}$ |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - | - | - |  | - | - | - | - | - |  | - |  | - | - | - |  | - |  |
| 0773 | Balanus/Tetracita spp. |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | 5 | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 1.00 | - | - | 1.00 | - | - | - | - | - | - | 0.50 | 0.50 | - | 5.50 | 10.50 | 8.50 | 13.50 | 16.50 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - |  |  |  |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | ) | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  |  | - | - | 0.50 | - | - | - |  | - |  | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate A |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of ) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 |
| Species |  | ! | 18-May-00 | 11-Jul-00 | 25-Sep-00 | 12-Dec-00 | 4-Apr-01 | 28-Jun-01 | 3-Oct-01 | 27-Nov-01 | 21-Mar-02 | 10-May-02 | 21-Aug-02 | 3-Dec-02 | 10-Mar-03 | 23-Jun-03 | 10-Sep-03 | 7.Jan-04 | 13-Feb-04 | 17-May-04 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - - | - | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0773 | Balanus/Tetraclita spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - |  | - |  | - | - | - |  | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 18.50 | 2.50 | 11.50 | 8.50 | 10.50 | 0.50 | 3.50 | 3.50 | 0.50 | 1.50 | 0.50 | 3.00 | 0.50 | - | : | - | - | - |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | 1.00 | - | - | - | - | - | - |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | . - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | 1.50 | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  |  | - |  | - |  | - | - | - | - | - |  | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate $A$

| Sampling code: $6=$ Coverage Based on \# of 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 |
| Species |  | ! | 20-Aug-04 | 5 -Feb-05 | 12-May-05 | 24-Jun-05 | 9-Aug-05 | 9-Dec-05 | 9-Mar-06 | 31-May-06 | 21-Aug-06 | 16-Nov-06 | 5-Mar-07 | 20-Jun-07 | 31-Aug-07 | 11-Dec-07 | 21-Mar-08 | 28-May-08 | 17-Sep-08 | 18-Nov-08 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - | - | - | - | - |  | - | - |  | - |  | - |  | - | - |  |  |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | 18.50 | 5.00 | 1.50 | 9.00 | 8.50 | 0.50 | 1.00 | 5.00 | 7.50 | 5.00 | 1.00 | 6.00 | 3.50 | 5.00 | 1.00 | 3.00 | 4.00 |
| 0492 | Porifera (encrusting) |  | - | 1.00 | - | - - | 1.00 | - | - | 0.50 | - | - | - | - | 2.00 | - | - | - | 2.00 | 0.50 |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetraclita rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | 0.50 | - | 1.00 | - | - | - | - | - | - | - | 0.50 | 0.50 |
| 0480 | tunicates, compound/social |  | 1.00 | -. | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate $A$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 144 | 145 | $\begin{array}{r}146 \\ \hline\end{array}$ | 147 ${ }^{147}$ | 148 | 149 | 5-150 | ${ }^{151}$ | 152 | 153 | ${ }^{154}$ | 155 | 156 | 157 | 158 | 159 | 160 | 161 |
| Species |  | ! | 14-Jan-09 | 9 9-Jun-09 | 4-Sep-09 | 17-Nov-09 | 19-Apr-10 | 28-May-10 | 5-Aug-10 | 28-Oct-10 | 12-Jan-11 | 2-May-11 | 18-Aug-11 | 10-Nov-11 | 5-Mar-12 | 25-Jun-12 | 11-Sep-12 | 11-Dec-12 | 14-Mar-13 | 26-Apr-13 |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0394 | Balanus spp. |  | - |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0773 | Balanus/Tetraclita spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0266 | Epiactis prolifera |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 0.50 | 2.00 | 5.00 | 8.00 | 4.50 | 3.00 | 6.50 | 9.00 | 8.00 | 6.50 | 13.00 | 6.00 | 6.00 | 6.00 | 3.50 | 9.00 | 8.00 | 6.00 |
| 0492 | Porifera (encrusting) |  | - | 0.50 | 1.00 | 0.50 | - | - | 0.50 | 0.50 | - |  |  |  | - | - | - |  | - |  |
| 0615 | Serpulidae |  | - | - | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | 1.00 | - | - | - | 0.50 | - | - | - | 0.50 | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | 1.00 | 0.50 | 0.50 |  | 0.50 | 0.50 | - | - | - | 0.50 | - | 1.00 | 0.50 |  | - |  |

## Subtidal Line Contact - Survey Invertebrate $A$

## Sampling code: $6=$ Coverage Based on \# of 1



## Subtidal Line Contact - Survey Algal and Substrate Abundance (\% Cover for 7 m squared) - Patton Cove SC 2 - 6 m

| Sampling code: $6=$ Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 4 | 7 | 8 | 9 | 12 | 13 | 15 | 16 | 19 | 21 | 25 | 26 | 28 | 30 |
| Species Code |  | Survey Date: | 9-0ct-76 | 14-Jan-77 | 5-Jul-77 | 15-May-78 | 27-Jun-78 | 8-Sep-78 | 12-Feb-79 | 14-May-79 | 15-Aug-79 | 6-Nov-79 | 5-May-80 | 19-Sep-80 | 29-Apr-81 | 13-Jul-81 | 10-Nov-81 | 12-Feb-82 |
| (spcode) | Species | Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |
| 0047 | Amplisiphonia pacifica | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex | 6 | - | - | - | - | - | - |  | - | - | - | - | - | 0.03 | 0.03 |  | 0.05 |
| 0245 | Bryopsis spp. | 6 | - | - | - | - | - | - |  |  | - |  | - | - |  | - |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex | 6 | 16.00 | 15.50 | 20.00 | 19.50 | 22.50 | 20.00 | 15.50 | 27.50 | 25.00 | 22.50 | 25.00 | 38.50 | 30.00 | 38.00 | 30.50 | 27.00 |
| 0185 | Callithamnion spp.IPleonosporium spp. | 6 |  |  | - | - | - | - | - |  |  | - |  | - |  | - |  |  |
| 0064 | Callophyllis flabelluata | 6 | 1.50 | 3.00 | 5.00 | 0.08 | 1.00 | 0.08 | 2.03 | 4.00 | 0.58 | 1.03 | 1.53 | 1.08 | 0.58 | 2.05 | 0.58 | 0.10 |
| 0112 | Callophyllis spp. | 6 | 5.00 | 2.53 | 11.50 | 6.53 | 6.00 | 12.00 | 5.00 | 13.00 | 12.50 | 4.00 | 4.50 | 12.00 | 7.50 | 7.50 | 4.50 | 1.08 |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - |  |  | - | - | . | - | . |  |
| 0125 | Chondracanthus corymbiferus | 6 | 5.00 | 4.50 | 13.50 | 13.50 | 20.00 | 29.00 | 16.50 | 24.50 | 29.00 | 26.50 | 20.50 | 36.50 | 18.50 | 22.50 | 20.50 | 16.00 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | - | - | - | - | - | - | - |  | - | - | - | . | - | - | - |  |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | 6 | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0055 | Corallina chilensis | 6 | 2.00 | - | - | - | - | - | - | - | - | - | - | - | 0.55 | - | - |  |
| 0052 | Cryptopleura ruprechtiana | 6 | - | 6.00 | 31.50 | 14.50 | 18.50 | 18.50 | 16.50 | 18.50 | 38.00 | 23.00 | 16.00 | 33.00 | 13.00 | 22.50 | 25.50 | 20.00 |
| 0115 | Cryptopleura violacea | 6 | - | 0.03 |  |  | 0.50 | 0.53 | 0.05 | - | - | - | - |  |  |  |  |  |
| 0036 | Cystoseira osmundacea | 6 | 1.50 | 0.08 | 0.05 | 2.05 | 3.03 | 1.53 | 3.00 | 2.00 | 3.05 | 4.50 | 2.00 | 4.03 | 2.53 | 3.03 | 5.00 | 6.00 |
| 1189 | Delesseria decipiens | 6 | - |  |  | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0235 | Delesseriaceae (juv.) | 6 | 11.50 | - | - | - | - | - | 8.50 | - | - | - | 3.50 |  |  | 0.50 | 0.50 |  |
| 1830 | Desmarestia ligulata | 6 | 1.50 |  | 8.50 | 0.03 | 7.50 | 25.00 | - | 0.03 | 0.03 | - | 0.05 | 3.50 | 0.08 | 1.00 | 1.03 |  |
| 0030 | Dictyoneurum californicum | 6 | 1.00 | 0.05 | 0.55 | 0.50 | 3.50 | 2.50 | 1.50 | 1.50 | 1.50 | 2.50 | 2.53 | 2.03 | 1.00 | 0.53 | 0.08 | 0.08 |
| 0190 | Dictyota binghamiae | 6 | - | 0.50 | 1.00 | 0.50 | 1.00 | - | 0.50 | 1.50 | 0.08 | - | 0.08 | 1.50 | 0.03 | 0.53 | - | 0.03 |
| 0031 | Egregia menziesii | 6 | - |  | - | - |  | - | . | - | - | - |  |  |  |  | - |  |
| 0071 | Erythrophyllum delesserioides | 6 | - | - | 2.03 | 1.03 | 3.50 | 2.53 | - | 1.50 | 2.50 | 0.53 | 0.05 | 3.03 | 0.53 | 1.03 | 0.53 |  |
| 1304 | Farlowia/Pikea spp.-complex | 6 | - | - | - | 0.03 | 0.03 | - | - | 0.53 | 1.50 | 0.05 | 0.03 | 0.03 | - | - | - | 0.05 |
| 0193 | Fauchea laciniata | 6 | - | - | - | 0.03 |  | - | - | - | - | - | - | - | - | - | - |  |
| 0142 | Fryeella gardneri | 6 | - - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - |  | - | - | - | - | - | - | - |  | - | - |  |
| 0075 | Gelidium robustum | 6 | - | - | - | - | - | - | - | 0.03 | 0.03 | - | - | 0.05 | 0.05 | - | 0.03 | 0.08 |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | 0.03 | - | 0.05 | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | - | 0.50 | 1.00 | 1.00 | 1.50 | 0.03 | 1.00 | - | 0.03 | - | 0.50 | 1.03 | 0.50 | - | - |  |
| 0212 | Hymenena spp. | 6 | - |  | - | - |  | - | - | - | - | $\cdots$ | - |  | - | 0.50 | - |  |
| 0035 | Laminaria setchellii | 6 | - | 0.08 | 0.08 | 0.55 | 0.08 | 0.08 | 0.10 | 3.53 | 0.10 | 1.08 | 0.58 | 3.00 | 1.55 | 0.58 | 3.05 | 0.10 |
| 0233 | Laminariales | 6 | - |  |  | 0.08 | - | 0.03 | . | - | - | 0.03 | - | 0.53 | 0.08 | - | - |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | - | - | - |  | - | . | - | - | . |  |
| 0082 | Mastocarpus papillatus | 6 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 3383 | Mazzaella splendens | 6 | 4.50 | 1.50 | 7.50 | 1.50 | 5.53 | 12.50 | 1.50 | 3.00 | 0.55 | 1.53 | 0.53 | 4.00 | 2.50 | 1.05 | 1.50 | 1.03 |
| 1242 | Membranoptera/Branchioglossum spp. | 6 | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - |  |
| 0095 | Microcladia coulteri | 6 | 0.03 | - | 1.50 | 0.05 | 0.10 | 2.53 | 0.58 | 2.50 | 0.10 | 0.05 | 0.05 | 0.58 | 0.10 | 0.53 | 0.05 | 0.10 |
| 0153 | Neoptilota spp. | 6 | - | - | 0.03 | - | - | 0.53 | - | 2.03 | 0.05 | 0.05 | 0.55 |  | 0.05 | 0.03 | - |  |
| 0041 | Nereocystis luetkeana | 6 | - | 0.50 |  | - | 0.08 | 0.08 | - | 0.05 | 0.05 | - | . | 0.05 | . | 0.03 | 0.03 | 0.03 |
| 1154 | Nienburgia andersoniana | 6 | - |  | - | - |  |  | - | - | - | - | - |  | - |  |  |  |
| 0096 | Opuntiella californica | 6 | - | 0.50 | - | - | - | 0.03 | 0.08 | - | 0.10 | 0.10 | 0.53 | 0.50 | - | - | 0.08 | 0.53 |
| 0184 | Osmundea spp. | 6 | - | - | 1.00 | 0.58 | 1.50 | 2.00 | 1.05 | 2.50 | 1.05 | 0.55 | 0.05 | 0.08 | 0.55 | 1.05 | 0.08 | 0.53 |
| 0145 | Peysonneliopsis epiphytica | 6 | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0199 | Phaeophyta | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Species Code (spcode) | Species | $\begin{gathered} \text { Survey Date: } \\ \text { Sampling } \\ \text { Code } \\ \hline \end{gathered}$ | 9-Oct-76 | 14-Jan-77 | 5-Jul-77 | 15-May-78 | 27-Jun-78 | 8-Sep-78 | 12-Feb-79 | 14-May-79 | 15-Aug-79 | 6-Nov-79 | 5-May-80 | 19-Sep-80 | 29-Apr-81 | 13-Jul-81 | 10-Nov-81 | 12-Feb-82 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. | 6 | - |  | - | - |  |  |  |  | - | - |  |  |  |  |  |  |
| 0135 | Phyllospadix spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0203 | Pikea robusta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum | 6 | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - | 7. | - | - |  |
| 0118 | Polyneura latissima | 6 | - | 4.00 | 18.03 | 20.00 | 21.50 | 11.00 | - | 20.50 | 4.03 | - | 5.50 | 0.58 | 7.00 | 4.50 | - |  |
| 0099 | Porphyra spp. | 6 | - |  |  |  | - | - | - |  |  | - | - | - | - |  |  |  |
| 0106 | Prionitis spp. | 6 | 0.50 | 0.03 | 0.50 | 1.05 | 0.03 | 0.03 | 0.05 | 1.00 | 0.50 | 0.53 | 0.05 | 0.53 | 0.08 | 1.00 | 0.05 | 0.08 |
| 0221 | Ptercladiella caloglossoides | 6 | - | 1.00 | - | - | - | - | - |  | - | 0.05 | 0.03 | - | - | - |  |  |
| 0192 | Pterosiphonia dendroidea | 6 | - | 2.00 | - | 1.00 | - | - | 0.05 | 1.03 | 1.00 | 0.50 | 0.05 | 0.50 | 0.05 | $5 \cdot$ | 0.05 |  |
| 0042 | Pterygophora californica | 6 | - | - | - | - | 0.03 | 0.05 | 0.10 | 3.00 | 0.55 | 1.05 | 0.58 | 1.55 | 1.03 | 0.58 | 1.05 | 1.08 |
| 0187 | Pugetia firma | 6 | - | - |  | - | - |  | - |  | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) | 6 | 4.00 | 6.50 | 2.50 | 0.03 | - | 0.03 | - | - | 0.03 | 0.05 | - | - | $0 \cdot$ | $\bigcirc$ | - |  |
| 0122 | Rhodoptilum plumosum | 6 | - | 0.50 | - | 1.03 | 0.55 | 0.05 | - | 1.50 |  | - | 0.08 | - | 0.05 | 0.03 | $\bigcirc$ | 0.05 |
| 0159 | Rhodymenia spp. | 6 | - | 0.05 |  | 0.50 | 0.55 | 1.00 | 0.53 | 1.00 | 0.50 | 0.03 | 0.03 | - | 0.08 | 0.03 | 0.03 |  |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | 0.03 | 1.55 | 0.55 | 0.05 | 0.08 | 0.03 | 0.50 | 0.08 | 0.03 | 0.08 | 0.58 | 0.03 | - | 0.03 | 0.03 |
| 0155 | Scinaia confusa | 6 | - | - | - |  | 0.05 | 0.05 | - | - | 0.03 | - | 0.08 |  |  | 0.05 | 0.03 | - |
| 0014 | Ulva spp. | 6 | - | 0.05 | 0.05 | 0.05 | 0.08 | 1.03 | - | 0.10 | - | - | 0.03 | - | 0.08 | - | - | - |
| 0988 | Weeksia spp. | 6 | - | - | - | - |  | - | - | - | - | $\cdots$ | - | - |  | - | 0.08 | 0.03 |
| 0057 | coralline crust | 6 | 38.50 | 39.00 | 34.00 | 59.50 | 54.00 | 55.50 | 58.00 | 51.50 | 58.50 | 57.50 | 62.50 | 69.00 | 70.50 | 52.00 | 53.50 | 54.50 |
| 1300 | filamentous red algae complex | 6 | 16.50 | 25.50 | 13.00 | 5.50 | 10.50 | 5.50 | 4.50 | 4.50 | 0.55 | 0.05 | 0.05 | 0.05 | 0.03 | 1.50 | - |  |
| 0059 | non-coralline crust | 6 | 2.50 | 0.50 | - | - | - | 0.03 | 0.03 | 3.00 | - | 0.08 | 0.10 | 0.10 | 1.08 | 0.53 | 0.05 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abundan

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  |  | 31 | 32 | 33 | 37 | 38 | 39 | 41 | 44 | 45 | 47 | 49 | 50 | 51 | 52 | 55 | 57 | 59 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | ¢ | 12-May-82 | 13-Jul-82 | 17-Sep-82 | 5-May-83 | 14-Jul-83 | 12-Sep-83 | 23-Jan-84 | 18-Jun-84 | 13-Sep-84 | 30-Jan-85 | 1-May-85 | 22-Jul-85 | 24-Sep-85 | 20-Nov-85 | 15-Apr-86 | 11-Sep-86 | 10-Dec-86 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - | - | - |  | - | - |  | - |  |  |  |  |  |  |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - |  | - |  | - | - | - | - | - |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | 0.03 | - | - |  | - | - |  | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 48.50 | 47.00 | 32.50 | 21.50 | 39.00 | 37.00 | 37.00 | 39.50 | 34.50 | 41.00 | 36.50 | 39.00 | 42.00 | 34.50 | 30.00 | 33.50 | 29.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |  | - | - |  |  |  |  |  | - |  |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabellulata |  | 4.50 | 3.03 | 0.58 | 0.03 | 0.10 | 3.00 | 1.58 | 4.00 | 0.10 | 0.10 | 0.10 | 3.53 | 0.10 | 1.08 | 1.03 | 0.58 | 0.10 |
| 0112 | Callophyllis spp. |  | 6.00 | 12.50 | 7.00 | 0.03 | 2.00 | 2.53 | 3.00 | 1.03 | 5.00 | 3.50 | 6.50 | 5.50 | 6.50 | 4.00 | 2.05 | 6.50 | 2.03 |
| 0239 | Chlorophyta (filamentous) |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0125 | Chondracanthus corymbiferus |  | 23.00 | 25.50 | 24.00 | 5.53 | 12.00 | 22.50 | 24.00 | 23.50 | 21.50 | 20.50 | 19.00 | 22.50 | 19.00 | 22.00 | 13.00 | 16.50 | 19.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - | 0.50 | - | . | - | - | 0.03 |  | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |  |  |
| 0025 | Coilodesme californica |  |  | - | - | - | - | - | - |  | - |  | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | 0.03 | 0.03 |  |
| 0052 | Cryptopleura ruprechtiana |  | 16.00 | 22.00 | 31.00 | 0.08 | 10.00 | 10.50 | 11.50 | 11.50 | 11.00 | 15.50 | 18.50 | 16.00 | 17.50 | 19.00 | 15.50 | 31.50 | 21.50 |
| 0115 | Cryptopleura violacea |  |  | 0.03 |  |  |  | 0.03 |  |  |  |  |  |  |  |  |  |  |  |
| 0036 | Cystoseira osmundacea |  | 3.53 | 5.53 | 7.53 | 0.58 | 2.03 | 2.53 | 2.55 | 4.03 | 3.00 | 3.50 | 1.05 | 4.05 | 2.53 | 2.05 | 1.05 | 3.00 | 0.55 |
| 1189 | Delesseria decipiens |  | - | - | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | 0.10 | - |  | 0.55 | - |  | 1.05 | - | - |  | - | - | - |  |
| 1830 | Desmarestia ligulata |  | 0.05 | 0.08 | - | -- | 15.00 | 12.50 | - | - | - | - | - | 0.03 | - | - | - | 0.55 | 0.03 |
| 0030 | Dictyoneurum californicum |  | 0.03 | 0.05 | 0.53 | . | - | - | - |  |  | - |  | - |  | - | - | - |  |
| 0190 | Dictyota binghamiae |  | 1.50 | - | 0.03 | - | 0.03 | 0.03 | - | 0.03 | 0.05 | - | 0.50 | 0.03 | - | - | 0.03 | - | 0.50 |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - |  |  | - |  | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | 2.03 | 1.05 | 0.03 | 0.05 | 0.03 | 1.53 | 0.03 | 1.03 | 0.53 | - | 0.58 | 0.10 | 0.05 | - | 0.50 | 0.05 | 0.03 |
| 1304 | Farlowia/Pikea spp.complex |  | - | 0.03 | - | - | - | 0.03 | 0.05 |  | 0.05 | 0.05 | 0.03 | 0.05 | - | 0.03 | 0.03 | - |  |
| 0193 | Fauchea laciniata |  | 0.03 |  | - | - | - | - | - | - |  | - | - | - | - | - |  | - |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - | - | 0.03 | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - |  | - | 0.03 | - |  | - | 0.03 | - |  |
| 0075 | Gelidium robustum |  | 0.03 | 0.03 | - | 0.05 | - | 0.03 | 0.50 | 0.03 | 0.50 | 0.08 | 0.05 | 0.03 | 0.08 | 0.58 | 0.08 | 0.50 | 0.05 |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - |  |  |  |  | - | - | 0.05 | 0.05 | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | - | 1.00 | 1.05 | 0.05 | - | 1.00 | - | - | 0.08 | 0.03 | 0.03 | 0.03 | 1.00 | 0.53 |
| 0212 | Hymenena spp. |  | - | - | 0.03 | - | - | - | - | - |  | - | - | - | - | - | - | 1.00 |  |
| 0035 | Laminaria setchellii |  | 0.55 | 5.50 | 1.53 | 0.58 | 0.10 | 2.05 | 0.10 | 5.50 | 0.58 | 0.58 | 0.10 | 1.05 | 2.53 | 0.55 | 0.58 | 0.58 | 0.58 |
| 0233 | Laminariales |  | - | 0.03 | - | - | - | 0.05 | - | 0.05 | - | - | - | 0.03 | - | - | - | 1.00 |  |
| 1640 | Macrocystis pyrifera |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | , | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 3383 | Mazzaella splendens |  | 0.50 | 0.55 | 0.53 | . | 0.50 | - | 0.03 | 0.53 | 1.00 | - | 0.05 | 1.53 | 0.50 | 0.03 | - | 1.00 | 0.03 |
| 1242 | Membranoptera/Branchioglossum spp. |  |  |  | 5 | - |  | - | 0.03 | - | . | - | - | 1. | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.10 | 1.03 | 0.05 | - | 0.05 | 0.55 | 0.08 | 1.08 | 0.10 | 0.05 | - | 0.10 | 0.03 | 0.05 | 0.05 | 0.05 | 0.03 |
| 0153 | Neoptilota spp. |  | 0.03 | 0.05 | - | - |  | - | - | 0.05 | 0.03 | 1.03 | 0.05 | 0.53 | 1.03 | 0.03 | 0.03 | 0.03 |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | 0.05 | - | - |  |  | - | - | - | - | - | - | 0.53 | 0.03 |
| 1154 | Nienburgia andersoniana |  | - |  | 05 | 0 | 0.03 | - | 03 | 0.8 | - ${ }^{-}$ | - | $\stackrel{-}{-}$ | 5 | ${ }^{-}$ | - | 5 | - |  |
| 0096 | Opuntiella californica |  | 1.50 | 0.53 | 0.05 | 0.03 | 0.03 |  | 0.03 | 0.08 | 0.05 | 0.08 | 0.55 | 0.55 | 0.55 | 0.08 | 0.05 | 1.53 | 0.08 |
| 0184 | Osmundea spp. |  | 0.03 | 1.03 | 0.03 |  |  | - | 0.05 | 1.50 | 0.05 | 2.00 | 1.03 | 0.05 | 0.08 | 0.05 | 0.03 | - |  |
| 0145 | Peysonneliopsis epiphytica |  |  | - | - | - | - | - | - | 0.05 | - | - | - | - | - | - |  | - |  |
| 0199 | Phaeophyta |  |  |  |  |  |  |  |  | 0.05 |  |  |  |  |  |  |  |  |  |


| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ؛ | 12-May-82 | 13-Jul-82 | 17-Sep-82 | 5-May-83 | 14-Jul-83 | 12-Sep-83 | 23-Jan-84 | 18-Jun-84 | 13-Sep-84 | 30-Jan-85 | 1-May-85 | 22-Jul-85 | 24-Sep-85 | 20-Nov-85 | 15-Apr-86 | 11-Sep-86 | 10-Dec-86 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  | - | - | - |  | - |  |  | 0.03 |  | - |  |  |  | - |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0118 | Polyneura latissima |  | 5.00 | 2.05 | 0.58 | - | 9.50 | 8.50 | 1.03 | 7.53 | 4.00 | 0.03 | 3.53 | 2.55 | 0.10 | 0.08 | 0.03 | 3.50 | 1.53 |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - |  | - | - | - |  |  | - | 0.03 | 0.03 |
| 0106 | Prionitis spp. |  | 0.55 | 0.08 | 0.05 | 0.08 | 0.50 | 0.03 | 0.53 | 0.08 | 0.03 | 0.05 | 1.00 | 0.03 | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | 0.03 | - | 0.03 |  |  |  |  |  |  | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 1.03 | 0.50 | 0.53 | - | - | - | 0.03 | 1.05 | 1.00 | 0.03 |  | - | 0.05 | 0.03 | 0.05 | - | - |
| 0042 | Pterygophora californica |  | 1.05 | 2.55 | 1.53 | 2.05 | 2.55 | 4.03 | 7.50 | 5.00 | 4.03 | 10.00 | 2.50 | 6.05 | 8.00 | 6.50 | 8.00 | 4.50 | 3.03 |
| 0187 | Pugetia firma |  | - | - | - |  | 0.03 | 㖪 | 0.05 | - | 0.08 | 0.03 | 0.03 | 0.05 |  | 0.05 |  | 0.03 | 0.03 |
| 0219 | Rhodophyta (juv. blades) |  | 0.05 | - | - | 0.05 | - | 0.58 | - | - | - |  | - | - | - |  | 0.05 | - |  |
| 0122 | Rhodoptilum plumosum |  | 0.08 | 0.05 | 0.03 | 0.03 | 0.08 | 0.05 | 0.03 | 0.08 | - | 0.05 | 0.03 | 0.03 | - | ${ }^{-}$ | 0.03 | 0.05 |  |
| 0159 | Rhodymenia spp. |  | 1.50 | 0.05 | 0.05 | 0.05 | 0.55 | - | 0.05 | 0.08 | . 0.55 | 1.55 | 1.50 | 1.00 | 0.03 | 0.08 | 1.08 | 2.53 | 2.53 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.50 | 0.03 | 0.03 | - | 0.03 ' | 0.05 | - | - |  | 0.03 | 0.03 | 0.03 |  |  | 0.03 | 0.03 |  |
| 0155 | Scinaia confusa |  | - | - | - | - | 0.10 | 0.03 | - | - | 0.50 | - | - | - | - |  | - | 0.03 | 0.03 |
| 0014 | Ulva spp. |  | 0.03 | - | - | - | 2.58 | 1.53 | 0.53 | 0.05 | 0.05 | 0.03 | - | - | 0.03 | - | - | 0.03 | 0.03 |
| 0988 | Weeksia spp. |  | - | - | - | ${ }^{-}$ | - | - | - | - | 0.53 | 0.03 | - | ${ }^{-}$ |  | ${ }^{-}$ | - |  |  |
| 0057 | coraline crust |  | 71.50 | 67.00 | 56.00 | 61.50 | 52.50 | 67.50 | 67.50 | 57.00 | 46.50 | 64.00 | 61.50 | 63.50 | 56.00 | 56.50 | 54.00 | 45.50 | 52.00 |
| 1300 | filamentous red algae complex |  | 0.05 | 0.05 | - | - | 4.55 | 6.55 | 2.55 | 0.03 | 1.53 |  |  | 0.05 | 0.05 | 0.03 | 0.03 | 0.50 |  |
| 0059 | non-coralline crust |  | 1.08 | 1.55 | 0.10 | 0.10 | 0.10 | 0.05 | 0.05 | 0.08 | 0.03 | 0.03 | - | 1.55 | 3.00 | 0.10 | 0.58 | 0.03 | 0.05 |


| Species Code (spcode) | Species | ? | $\begin{array}{r} 61 \\ \text { 15-May-87 } \end{array}$ | $\begin{array}{r} 62 \\ \text { 21-Jul-87 } \end{array}$ | $\begin{array}{r} 64 \\ \text { 14-Oct-87 } \end{array}$ | $\begin{array}{r} 73 \\ \text { 20-Feb-90 } \end{array}$ | $\begin{array}{r} 74 \\ \text { 10-May-90 } \end{array}$ | $\begin{array}{r} 75 \\ \text { 22-Aug-90 } \end{array}$ | $\begin{array}{r} 76 \\ \text { 10-Nov-90 } \end{array}$ | $\begin{array}{r} 78 \\ \text { 20-Jun-91 } \end{array}$ | $\begin{array}{r} 79 \\ \text { 26-Aug-91 } \end{array}$ | $\begin{array}{r} 80 \\ \text { 25-Oct-91 } \end{array}$ | $\begin{array}{r} 81 \\ 31-M a r-92 \end{array}$ | $\begin{array}{r} 82 \\ \text { 24-Jun-92 } \end{array}$ | $\begin{array}{r} 83 \\ 1-\text { Sep- } 92 \end{array}$ | $\begin{array}{r} 84 \\ \text { 19-Nov-92 } \end{array}$ | $\begin{array}{r} 86 \\ \text { 30-Jun-93 } \end{array}$ | $\begin{array}{r} 87 \\ \text { 24-Sep-93 } \end{array}$ | $\begin{array}{r} 88 \\ \text { 9-Nov-93 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0981 | Ahnfeltiopsis linearis |  |  |  |  |  | - |  | - | - |  | - |  |  |  |  |  |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - |  |  |  |  |  |  |  |  | - |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | 0.03 | - |  | - |  |  | 0.03 |  | - |  | 0.03 |  |  |  |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 32.50 | 35.00 | 28.50 | 30.00 | 35.00 | 39.50 | 38.50 | 42.00 | 43.50 | 32.50 | 39.00 | 40.50 | 38.50 | 30.50 | 41.50 | 30.50 | 33.50 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | - | - | - |  | - | - |  |  | 0.03 |  |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.58 | 3.00 | 0.10 | 0.08 | 1.55 | 2.03 | 0.08 | 3.03 | 1.58 | 3.50 | 0.58 | 1.08 | 1.08 | 0.58 | 0.10 | 0.10 | 0.58 |
| 0112 | Callophyllis spp. |  | 7.00 | 10.50 | 6.00 | 2.03 | 9.00 | 8.50 | 5.50 | 5.50 | 9.50 | 6.00 | 3.03 | 8.50 | 10.50 | 4.50 | 9.00 | 8.00 | 5.00 |
| 0239 | Chlorophyta (filamentous) |  | - | - |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0125 | Chondracanthus corymbiferus |  | 15.50 | 14.50 | 11.50 | 10.50 | 16.00 | 15.50 | 17.00 | 13.50 | 22.50 | 14.50 | 9.50 | 15.50 | 23.50 | 19.50 | 18.00 | 18.50 | 23.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1302 | Chrysophyta |  | - | - | 0.50 | - | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0025 | Coilodesme californica |  | - | - |  |  |  |  | - |  | - | - | - |  | - |  |  |  |  |
| 0055 | Corallina chilensis |  | - | - | - | 0.03 | - | - | - |  | - | - | - | - | 0.03 | - |  |  |  |
| 0052 | Cryptopleura ruprechtiana |  | 34.50 | 31.50 | 37.00 | 18.50 | 33.00 | 30.50 | 29.00 | 33.50 | 32.50 | 20.50 | 19.50 | 36.00 | 36.00 | 27.50 | 41.00 | 44.50 | 30.50 |
| 0115 | Cryptopleura violacea |  |  | 0.03 | 0.03 |  | - |  | - | - | - | - | - | - |  |  | 0.03 | - |  |
| 0036 | Cystoseira osmundacea |  | 1.53 | 1.03 | 0.53 | 2.53 | 0.55 | 1.50 | 1.53 | 1.55 | 1.53 | 1.03 | 0.08 | 0.58 | 2.03 | 0.55 | 1.53 | 0.08 | 1.55 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |
| 1830 | Desmarestia ligulata |  | - | - | - | - | 10.00 | 8.00 | 2.00 | 0.03 | 1.50 | 0.03 | - | 2.53 | 7.00 | 0.05 | - | - | - |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | 0.03 | 0.03 |  | 0.05 | 0.03 | - |  | - | - | - | - | 0.03 |
| 0190 | Dictyota binghamiae |  | 0.03 | 1.50 | 0.03 | - | - | - | - | 0.03 | 0.08 | . - | - | 0.50 | 0.03 | 0.03 | 0.53 | 0.03 | 0.50 |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - |  | - |  | - |  |  |
| 0071 | Erythrophyllum delesserioides |  | 0.03 | 0.08 | 0.03 | - | 0.53 | 0.03 | - | 0.03 | 0.55 | 0.05 | - | 0.08 | 0.55 | 0.05 | 1.03 | 0.53 | 1.00 |
| 1304 | Farlowia/Pikea spp.complex |  | 0.03 |  | - | 0.03 | 0.03 | - | - |  | 0.03 | 0.03 | - | 0.05 |  |  |  | - | 0.03 |
| 0193 | Fauchea laciniata |  | 0.03 | 0.05 | - | - | 0.05 | - | - | 0.03 | 0.03 |  | - | 0.03 | - | - | 0.05 | 0.03 | 0.03 |
| 0142 | Fryeella gardneri |  | 0.03 | - | - | - | - | - | - | 0.03 | - | - | - |  | 0.05 | - | 0.03 | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - |  | - |  |  | - |  | - |  | $\cdot$ |  |
| 0075 | Gelidium robustum |  | 0.05 | 0.03 | 0.05 | 0.03 | - | - | 0.08 | - | 0.03 | - | 0.03 | - |  | - | 0.03 | 0.03 |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - |  |  | - | - | - |  |  |  |  |  | 0.03 | - | 0.03 |  |  |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | 0.03 | 0.03 | - | 0.53 | 0.50 | 0.03 | 0.03 | 0.53 | 1.03 | 0.03 | 0.50 | 0.05 | 0.03 | 0.53 | - | 0.03 |
| 0212 | Hymenena spp. |  | - |  |  | - |  | - |  |  |  |  |  | ${ }^{-}$ | - | - | ${ }^{-}$ | - |  |
| 0035 | Laminaria setchellii |  | 2.53 | 1.05 | 0.10 | 2.00 | 0.58 | 1.53 | 1.05 | 0.53 | 4.00 | 0.58 | 1.55 | 0.10 | 1.05 | 0.58 | 0.10 | 0.55 | 0.58 |
| 0233 | Laminariales |  | - | 0.05 | - |  | 0.05 | 0.55 | 0.08 |  |  |  |  | - | - |  |  |  |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.03 | - | - | - | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 3383 | Mazzaella splendens |  | - | - | 1.05 | - | - | - | - | 0.05 | 0.53 | 0.03 | 0.05 | 0.03 | 0.03 | - | 0.50 | 1.00 | 0.03 |
| 1242 | Membranoptera/Branchioglossum spp. |  | 0.03 | - | $\therefore$ | - | 0.03 | - | - | - | - | - | - | - | - | - |  | - |  |
| 0095 | Microcladia coulteri |  | 0.10 | 0.55 | 0.08 | 0.05 | 0.10 | 0.58 | 0.05 | 0.08 | 0.10 | 0.10 | - | 0.10 | 0.10 | 0.10 | 0.08 | 0.08 | 0.55 |
| 0153 | Neoptilota spp. |  | 0.03 | 0.03 | 0.03 | 0.03 | 0.08 | 0.05 | 0.03 | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | 0.05 | 0.05 | - | 0.08 |
| 0041 | Nereocystis luetkeana |  | 0.03 | - | - | - | 0.03 | 0.53 | 0.53 | 0.05 | 0.53 | 0.03 | - | - | - | - | 0.03 | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | 1.53 | 0.10 | 0.08 | 0.05 | 0.53 | 0.05 | 0.05 | 0.05 | 0.03 | 0.53 | 0.03 | 0.05 | 0.08 | - | 0.03 | 0.05 |
| 0184 | Osmundea spp. |  | 1.03 | 0.08 | 0.03 | - | 0.55 | 0.03 | 0.05 | - | 0.03 | 0.03 | - | 0.03 |  | 0.05 | 0.03 | 0.53 |  |
| 0145 | Peysonneliopsis epiphytica |  |  | - |  | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |  |
| 0199 | Phaeophyta |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| Species <br> (spcode) | Species | $\leqslant$ | 15-May-87 | 21-Jul-87 | 14-0ct-87 | 20-Feb-90 | 10-May-90 | 22-Aug-90 | 10-Nov-90 | 20-Jun-91 | 26-Aug-91 | 25-0ct-91 | 31-Mar-92 | 24-Jun-92 | 1-Sep-92 | 19-Nov-92 | 30-Jun-93 | 24-Sep-93 | 9-Nov-93 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  | - | - |  | - |  |  |  | - | - | - |  | - |  |  |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0203 | Pikea robusta |  | 0.03 | - | 0.05 | - | - | - | - | 0.03 | - | - | - | 0.03 | 0.03 | - | 0.50 | 0.50 | - |
| 0117 | Plocamium pacificum |  |  | - | - | - | - | - | - |  | - | - |  |  |  | - |  | - |  |
| 0118 | Polyneura latissima |  | 7.00 | 10.50 | 1.05 | 0.08 | 12.00 | 3.53 | 1.55 | 7.50 | 2.05 | 1.00 | 0.08 | 7.53 | 4.55 | 0.08 | 7.50 | 1.03 | 1.08 |
| 0099 | Porphyra spp. |  | 0.03 | - | - | - | - |  |  |  | - | $\bigcirc$ | $\bigcirc$ | 0.05 | - | - |  |  |  |
| 0106 | Prionitis spp. |  | 0.03 | 0.03 | 0.03 | - | 0.05 | - | 0.05 |  | - | 0.03 | 0.03 | 0.03 | - | - | - | - | 0.03 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - |  | - | - |  | - | - | - | - | - | - | - |  |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | - | 0.03 | - | 0.03 | 0.03 | - |  | - | - | - | - | - | - | $\stackrel{-}{-}$ | 0.03 | 0.03 |
| 0042 | Pterygophora californica |  | 0.08 | 6.00 | 7.50 | 3.03 | 0.58 | 8.00 | 5.03 | 2.03 | 4.50 | 2.53 | 1.05 | 0.58 | 3.03 | 0.10 | 0.58 | 0.08 | 3.00 |
| 0187 | Pugetia firma |  | - | 0.53 | 0.08 | - | 0.05 | - | 0.03 | 0.03 | 0.05 | 0.08 | - | - | 0.03 | 0.08 |  | 0.03 | 0.03 |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | $0 \cdot$ | 0.03 |  |  | - | - | $\bigcirc$ | $0 \cdot$ | - | - |  |  |
| 0122 | Rhodoptilum plumosum |  | 0.08 | 0.10 | 0.03 | - | 0.03 | 0.03 |  | 0.10 | 0.05 | 0.08 | - | 0.03 | 0.03 | - | - | 0.03 |  |
| 0159 | Rhodymenia spp. |  | 3.05 | 4.53 | 4.00 | 1.55 | 4.50 | 6.03 | 5.50 | 3.00 | 5.53 | 10.00 | 3.53 | 10.53 | 7.50 | 6.50 | 6.00 | 9.50 | 12.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | 0.50 | 0.03 | . - | 0.05 | 0.03 | - | 0.03 | 0.05 | - | - | - | 0.03 | - | 0.03 | 0.53 | 0.05 |
| 0155 | Scinaia confusa |  |  |  |  | - | - | 0.03 | - | - | - |  | - | - | 0.03 | - | 0.03 | 0.03 | 0.03 |
| 0014 | Ulva spp. |  | - | 0.03 | - | $\bigcirc$ | 0.03 | 0.03 | 0.03 | 1.03 | 0.05 | 0.03 | - | 0.03 | 0.05 | $0 \cdot$ | 0.03 | 0.03 | 0.03 |
| 0988 | Weeksia spp. |  | - ${ }^{-}$ | 0.03 | 0.05 | 0.03 | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.05 | 0.05 |
| 0057 | coralline crust |  | 59.00 | 48.50 | 52.50 | 63.50 | 44.50 | 53.00 | 56.00 | 45.50 | 51.00 | 51.00 | 58.00 | 48.00 | 52.00 | 51.00 | 46.50 | 52.00 | 53.50 |
| 1300 | filamentous red algae complex |  | . | 0.05 |  | - | 0.03 | 0.05 | 0.05 | 0.03 |  | - | 0.05 | 0.03 | 0.53 | 0.03 | 0.03 | 0.03 |  |
| 0059 | non-coraline crust |  | - | 0.58 | 0.10 | 0.05 | 0.53 | 0.10 | 1.08 | - | 0.55 | 2.03 | 0.08 | 0.53 | 0.10 | 0.08 | - | 0.03 | 2.00 |



| $\begin{aligned} & \text { Species } \\ & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species | ! | 5-Apr-94 | 16-Jun-94 | 15-Aug-94 | 22-Nov-94 | 26-Apr-95 | 20-Jul-95 | 6-May-99 | 17-Aug-99 | 21-Oct-99 | 12-May-00 | 10-Jul-00 | 21-Sep-00 | 7-Dec-00 | 6-Apr-01 | 29-Jun-01 | 7-Sep-01 | 19-Nov-01 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0203 | Pikea robusta |  | - | 0.03 | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |
| 0117 | Plocamium pacificum |  | - | . | - | - | - | - | - | - | - |  | - | - | - |  | 0.50 | - |  |
| 0118 | Polyneura latissima |  | 5.53 | 2.05 | 1.03 | 0.03 | 3.03 | 7.03 | 8.00 | 0.03 | - | 4.50 | 0.03 | - | - | - | 0.50 | - |  |
| 0099 | Porphyra spp. |  | - |  | - | - |  | - | 1.00 | - | - | 0.50 | - | - | - | $0 \cdot$ | - | - |  |
| 0106 | Prionitis spp. |  | 0.03 | - | 0.05 | - | 0.10 | - | 0.55 | 0.03 | - | 0.03 | 0.03 | - | 0.03 | 0.05 | - | - | 0.05 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 | - |  |
| 0042 | Pterygophora californica |  | 1.08 | 0.55 | 2.03 | 1.03 | 0.10 | 0.10 | 1.58 | 2.05 | 2.05 | 0.10 | 2.03 | 0.10 | 2.53 | 3.03 | 1.05 | 2.03 | 0.10 |
| 0187 | Pugetia firma |  | - | 0.05 | 0.05 | 0.05 | - | 0.05 | - | - | 0.03 |  | - | - | - |  | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0122 | Rhodoptilum plumosum |  | 0.05 | 0.03 | 0.03 | - | - | - | 0.03 | - | - | 0.03 | 0.03 | - | - | 0.03 | 0.08 | 0.08 |  |
| 0159 | Rhodymenia spp. |  | 14.00 | 14.50 | 7.00 | 11.50 | 2.53 | 10.50 | 14.50 | 10.50 | 15.00 | 13.00 | 12.50 | 15.00 | 13.50 | 11.50 | 4.53 | 10.50 | 11.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 | 0.08 | - | - | 0.55 | 0.03 | - | - | 0.03 | - | - | - | - | - |  |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 | 0.03 | - | - | - | 0.05 | 0.50 |  |
| 0014 | Ulva spp. |  | 0.05 | - | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.05 | 0.03 | - | - | 0.10 | 0.03 | 0.03 |  |
| 0988 | Weeksia spp. |  |  | - |  | - |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0057 | coralline crust |  | 39.00 | 37.50 | 46.50 | 51.50 | 54.50 | 54.00 | 38.50 | 55.50 | 41.50 | 44.50 | 60.00 | 21.50 | 51.00 | 49.00 | 61.00 | 66.00 | 54.00 |
| 1300 | filamentous red algae complex |  | 0.03 | 0.03 | 0.05 | 0.03 |  | 0.53 | - | - | - | 2.53 | 0.03 | - | - | 0.03 | 0.53 | 0.03 |  |
| 0059 | non-coralline crust |  | 0.10 | 0.05 | 0.10 | 1.53 | 0.10 | 0.05 | 0.10 | - | 0.03 | 1.08 | 1.05 | 0.05 | 0.58 | 1.53 | 0.58 | 1.08 | 0.58 |

## Subtidal Line Contact - Survey Algal and Substrate Abundan

## Sampling code: 6 = Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | ! | $\begin{array}{r} 116 \\ 22-\text { Feb-02 } \end{array}$ | $\begin{array}{r} 117 \\ \text { 5-Jun-02 } \end{array}$ | $\begin{array}{r} 118 \\ \text { 14-Aug-02 } \end{array}$ | $\begin{array}{r} 119 \\ \text { 15-Jan-03 } \end{array}$ | $\begin{array}{r} 120 \\ 6-\mathrm{Mar}-03 \end{array}$ | $\begin{array}{r} 121 \\ \text { 30-Apr-03 } \end{array}$ | $\begin{array}{r} 122 \\ \text { 2-Sep-03 } \end{array}$ | $\begin{array}{r} 123 \\ 7 \text {-Jan-04 } \end{array}$ | $\begin{array}{r} 124 \\ \text { 23-Mar-04 } \end{array}$ | $\begin{array}{r} 125 \\ \text { 25-May-04 } \end{array}$ | $\begin{array}{r} 126 \\ \text { 24-Aug-04 } \end{array}$ | $\begin{array}{r} 127 \\ 4 \text { Feb-05 } \end{array}$ | $\begin{array}{r} 128 \\ \text { 13-May-05 } \end{array}$ | $\begin{array}{r} 129 \\ \text { 21-Jun-05 } \end{array}$ | $\begin{array}{r} 130 \\ \text { 10-Aug-05 } \end{array}$ | $\begin{array}{r} 131 \\ \text { 7-Dec-05 } \end{array}$ | $\begin{array}{r} 132 \\ \text { 31-Mar-06 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0981 | Ahnfeltiopsis linearis |  | - | - |  | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - |  |  |  |  | - | - |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - |  | - | - | - | - |  | - | - | - |  |  |  |  |
| 0245 | Bryopsis spp. |  |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 13.50 | 29.50 | 16.00 | 18.00 | 26.00 | 15.50 | 17.00 | 13.00 | 30.00 | 22.50 | 33.00 | 17.50 | 30.00 | 26.00 | 26.50 | 18.00 | 25.00 |
| 0185 | Callithamnion spp.PPleonosporium spp. |  |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |
| 0064 | Callophyllis flabelluata |  | - | 0.08 | 0.08 | 0.05 | 0.05 | 0.03 | - | - | 0.03 | - | - |  | 0.03 | 0.03 |  | 0.05 | 0.03 |
| 0112 | Callophyllis spp. |  | - | 0.50 | 0.03 | - | - | - | 0.03 | - | 0.05 | - | - |  |  | 0.03 | 0.03 |  | 0.03 |
| 0239 | Chlorophyta (filamentous) |  | - |  |  | - | - |  |  |  |  | - | - | - |  |  |  |  | 0.03 |
| 0125 | Chondracanthus corymbiferus |  | 9.50 | 11.50 | 10.50 | 5.50 | 7.50 | 9.00 | 4.50 | 1.55 | 5.50 | 0.10 | 0.53 | 1.53 | 2.50 | 0.05 | 0.05 | 0.08 |  |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - |  |  | - |  | - | - | - | - |  |  |  |  |  |  |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | 0.50 | - | - | - | - | - | - |  |  |  |  | - |
| 0025 | Coilodesme californica |  | - |  | - | - | - | 0.50 | - | - | - | - | - | - |  |  |  |  |  |
| 0055 | Corallina chilensis |  | - | 0.03 | - |  | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0052 | Cryptopleura ruprechtiana |  | 1.55 | 8.00 | 1.05 | 0.05 | 5.00 | - | - | - | 0.03 | 3.05 | - | - |  | 1.05 | 0.08 | - | - |
| 0115 | Cryptopleura violacea |  |  |  |  | - | - | 0.50 | - | - | - | - | - | 0.03 |  | - | - | $\cdot$ | - |
| 0036 | Cystoseira osmundacea |  | 0.03 | - | - | 0.05 | 0.03 | 0.50 | - | 0.03 | 0.08 | 0.03 | 0.53 | 0.05 | 1.03 | 0.03 | 0.05 | 0.05 | 1.50 |
| 1189 | Delesseria decipiens |  |  | - | - | - | - | - | - | - | 0.05 | - |  | - |  |  | - |  | 0.03 |
| 0235 | Delesseriaceae (juv.) |  | 1.50 | - | - | - | - | - | - | - | - | - |  | - |  | - | - | $\cdot$ |  |
| 1830 | Desmarestia ligulata |  | 0.05 | 30.00 | 20.00 | - | 2.08 | 16.50 | 11.00 | 0.03 | - | 16.50 | 10.00 |  | 8.03 | 18.00 | 15.50 | 0.05 | 2.53 |
| 0030 | Dictyoneurum californicum |  |  |  |  | - | - | - | - | - | - | - | - |  |  | - | - |  |  |
| 0190 | Dictyota binghamiae |  | 0.03 | 1.00 | 0.50 | - | - | 0.50 | 1.00 | - | 0.53 | 1.00 | 0.55 |  | 0.55 | 1.03 | 0.05 | - | 0.03 |
| 0031 | Egregia menziesii |  |  |  |  | - | - |  | - | - | - | - | - |  |  |  |  |  |  |
| 0071 | Erythrophylum delesserioides |  | 0.03 | 0.03 | - |  | 0.03 | - | - | - | - | - | - | - | - |  |  | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.03 | 0.05 | 0.05 | 0.03 | 0.03 | - | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | - | 0.03 | - |
| 0193 | Fauchea laciniata |  | - | - |  |  |  | - | - |  |  | - | - |  |  |  | 0.03 |  |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.05 | 0.05 |  |  | 0.03 |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0075 | Gelidium robustum |  | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.53 | 0.03 | 0.03 | 0.03 | - | - | 0.03 | 0.03 | 0.03 |  |  |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | 0.03 | - |  |  |  | - |  |  | - | - | - |  |  |  |  |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | 0.50 | 0.03 | - | - | 2.53 | 0.50 | - | - | - | - | - | - | - |  |  |  | 0.03 |
| 0212 | Hymenena spp. |  | - | - | - |  |  |  | - |  |  | - | - | - | - | - |  |  |  |
| 0035 | Laminaria setchellii |  | 0.08 | 0.10 | 1.05 | 1.50 | 1.03 | 2.53 | 3.50 | 0.55 | 0.08 | 1.53 | 1.55 | 3.03 | 3.53 | 3.05 | 4.50 | 4.00 | 0.08 |
| 0233 | Laminariales |  | 0.05 | - | - |  | 0.08 |  | - |  | 0.05 | 3.53 | - | - | 3.53 | 1.05 | 0.05 |  | 0.05 |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - |  |  |  | - | - |  |  |  |  |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 | - |  | - |  |
| 3383 | Mazzaella splendens |  | - | 1.05 | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |  |  |
| 0095 | Microcladia coulteri |  | - | 0.55 | 0.03 | - | 0.03 | 0.10 | 0.03 | - |  | 0.03 | - | - | - | - |  | - |  |
| 0153 | Neoptilota spp. |  | - | 0.03 | - | - | - | 0.05 | - | - | - |  | - | - | - | - | - | - | - |
| 0041 | Nereocystis luetkeana |  | 0.50 | 8.00 | 5.00 | - | 0.05 | 2.00 | 3.00 | 0.53 | - | 0.58 | 5.53 | 0.03 | 0.55 | 1.08 | 1.58 | 2.03 | 0.03 |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - | - |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0184 | Osmundea spp. |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0145 | Peysonneliopsis epiphytica |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0199 | Phaeophyta |  |  |  |  | - | - | - | - | - | - | - |  | - | - | - | - | - |  |


| Species Code (spcode) | Species | : | 22-Feb-02 | 5-Jun-02 | 14-Aug-02 | 15-Jan-03 | 6-Mar-03 | 30-Apr-03 | 2-Sep-03 | 7-Jan-04 | 23-Mar-04 | 25-May-04 | 24-Aug-04 | 4-Feb-05 | 13-May-05 | 21-Jun-05 | 10-Aug-05 | 7-Dec-05 | 31-Mar-06 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  |  | - | - | - | 0.03 | - | - | - | - |  |  |  | 0.05 | - | - | - | 0.05 |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |  |  |
| 0118 | Polyneura latissima |  | 1.05 | - | 0.08 | - | 2.53 | - | - | - | 0.50 | - | - | - | 0.05 | $\bigcirc$ | - | 0.03 | 0.03 |
| 0099 | Porphyra spp. |  |  | - |  | - | 0.05 | - | - | ${ }^{-}$ | - | $\bigcirc$ | - | - |  | 0.03 | - | - |  |
| 0106 | Prionitis spp. |  | - | 0.03 | 0.03 | - | 0.53 | 1.00 | - | 0.10 | 0.05 | 0.05 | 0.03 | 0.05 | 0.05 | 1.03 | 0.03 | 0.03 |  |
| 0221 | Ptercladiella caloglossoides |  | - |  |  | . - |  | - | - | - | - | - | - | - |  |  | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | 0.03 | 0.03 | - | - | 0.03 |
| 0042 | Pterygophora californica |  | 0.58 | 3.50 | 2.05 | 3.50 | 3.55 | 1.53 | 5.00 | 4.03 | 3.03 | 4.03 | 4.50 | 1.55 | 4.03 | 2.05 | 4.00 | 3.50 | 6.50 |
| 0187 | Pugetia firma |  | 0.50 | 0.05 | - | - | 1.00 | - | - | - | 0.03 | 0.08 | - | - |  | 0.03 | 0.03 | 0.03 |  |
| 0219 | Rhodophyta (juv. blades) |  |  |  | - | - |  | - | - | - | - | - | - | - | - |  | - | .- | 1.00 |
| 0122 | Rhodoptilum plumosum |  | 0.05 | 0.05 | - | - | 0.08 | 0.55 | 3.50 | - | 0.08 | 0.08 | ${ }^{-}$ | 0.03 | 0.10 | 0.05 | 0.03 | - | 0.10 |
| 0159 | Rhodymenia spp. |  | 6.03 | 14.50 | 13.50 | 4.53 | 10.00 | 8.50 | 8.00 | 3.03 | 8.00 | 1.53 | 3.00 | 1.55 | 5.03 | 6.00 | 2.03 | 0.55 | 3.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 | - | - | - | - |  | - | - | $\bigcirc$ | - | - | - |  | - | - |  |
| 0155 | Scinaia confusa |  | - | 0.05 | - | - | - | - | 1.50 | - | - | 0.03 | 0.03 | - | - | 0.03 | 0.03 | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.05 | - | - | 1.00 | 0.08 | 0.08 | - | - | 0.08 | - | - | 0.03 | 0.08 | 0.03 | - |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - | - |  | - | - | - | - | 0.05 | - | - | - | - |  |
| 0057 | coralline crust |  | 59.50 | 41.50 | 48.00 | 52.00 | 55.00 | 70.50 | 67.00 | 67.00 | 47.00 | 48.50 | 39.50 | 65.00 | 32.50 | 39.50 | 35.00 | 55.00 | 37.00 |
| 1300 | filamentous red algae complex |  | 0.03 | 0.05 | 0.03 | - | 2.53 | 0.08 |  | - | 1.50 | 1.00 | - | - | 2.03 | 1.53 | - |  | 1.55 |
| 0059 | non-coralline crust |  | 0.10 | 3.03 | 0.58 | 4.00 | 0.05 | 1.00 | 0.50 | 0.08 | 1.53 | 0.10 | 2.03 | 0.08 | 1.50 | 0.55 | 4.00 | 3.55 | 2.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abundan

| Sampling code: 6 = Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 |
| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ |  | $\mathfrak{}$ | 1-Jun-06 | 22-Aug-06 | 17-Nov-06 | 6 -Mar-07 | 25-May-07 | 29-Aug-07 | 12-Dec-07 | 2-Apr-08 | 20-Jun-08 | 16-Sep-08 | 10-Dec-08 | 4-Feb-09 | 24-Jun-09 | 3-Sep-09 | 3-Dec-09 | 15-Apr-10 | 3-Jun-10 |
|  | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | - | - |  |  |  | - |  |  |  | - |  |  | - |  |  |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 27.00 | 29.00 | 26.50 | 17.00 | 27.00 | 30.00 | 25.50 | 23.00 | 26.50 | 24.00 | 24.00 | 27.50 | 23.50 | 29.50 | 27.00 | 28.00 | 33.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |  |  |  | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.53 | - | 0.53 | - | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | - | 0.08 | 0.08 | 0.05 | 0.05 | 0.08 |
| 0112 | Callophyllis spp. |  | - | 0.03 | 0.03 | 0.03 | 0.53 | - | - | 0.03 | - | 0.08 | 0.05 | 0.03 | - | 0.03 | 0.03 |  | 0.03 |
| 0239 | Chlorophyta (filamentous) |  | - |  |  |  |  | - | - | - | - | - | - | - | - | - |  |  |  |
| 0125 | Chondracanthus corymbiferus |  | - | 0.03 | 0.03 | 0.50 | 0.03 | 0.08 | 0.10 | 0.53 | 0.05 | - | 0.08 | 0.03 | 0.08 | 0.03 |  | 0.03 | 0.53 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 1302 | Chrysophyta |  | - | - | - | 1.00 | - | - |  | 5.00 | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0055 | Corallina chilensis |  | - |  | 0.03 | 0.50 | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | 0.03 | 0.03 | 0.03 | 1.00 | 1.00 | 0.05 | 0.03 | - | - | 0.03 | - | 0.50 | - | - | - | 0.08 | 0.05 |
| 0115 | Cryptopleura violacea |  |  |  | - |  |  | - | - | 0.03 | - | - | - | - | - | - | - |  |  |
| 0036 | Cystoseira osmundacea |  | 1.55 | 2.00 | 1.08 | 0.53 | 2.03 | 2.05 | 2.03 | 3.03 | 2.03 | 3.50 | 3.00 | 1.53 | 4.00 | 4.00 | 1.05 | 1.08 | 1.55 |
| 1189 | Delesseria decipiens |  | 0.03 | - | - | 0.55 | 0.03 | - | - | 0.05 | - | - | - | - |  | - |  | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | 1.00 | - | - | - | - | - | - | - | - | - |  | - | . |  |
| 1830 | Desmarestia ligulata |  | 4.50 | 0.55 | - | 0.03 | 5.50 | 3.50 | - | 0.03 | 5.50 | 1.53 | - | - | 0.05 | - | - | - | 0.10 |
| 0030 | Dictyoneurum californicum |  |  | - | - |  |  | - | - | - | - | - | - | - | . |  | - | - |  |
| 0190 | Dictyota binghamiae |  | 0.03 | - | - | 0.05 | 0.50 | - | - | 1.00 | - | - | - | 0.05 | - | - | - | 0.53 | 0.53 |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | . | - | - | - | - | - | - | - | - |  |  |
| 0071 | Erythrophylum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0193 | Fauchea laciniata |  | - | - | - | - |  | - | - | - | - | - | - | 0.03 | 0.05 | - | - | - | 0.55 |
| 0142 | Fryeella gardneri |  | 0.03 | - | - | - | 0.03 | - | - | - | 0.05 | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | - | - | 0.50 | - | 0.03 | - | 0.03 | 0.03 | 0.03 | - | 0.03 | 0.03 | - | - | 0.05 | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | 0.03 | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - | - | - | 0.05 |
| 0212 | Hymenena spp. |  | - | - | - | - | ${ }^{-}$ | 5 | $\stackrel{-}{\circ}$ | $\bigcirc$ | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 3.00 | 3.50 | 2.03 | 1.03 | 2.53 | 5.50 | 3.50 | 4.00 | 2.53 | 3.00 | 3.53 | 1.53 | 2.03 | 1.05 | 1.55 | 2.00 | 2.55 |
| 0233 | Laminariales |  | 0.10 | 0.08 | - | - | 0.05 | - | - | 0.08 | 0.05 | 0.05 | - | 0.03 | 0.05 | . |  | - | 0.50 |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | $\bigcirc$ | - | - | $\bigcirc$ | - | - | - | - | - | $\bigcirc$ | - |  |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | 0.03 | - | - | 0.05 | - | - | - | - | - | 0.03 | - |  |
| 3383 | Mazzaella splendens |  | - | - | - | 5 | - | - | - | $\bigcirc$ | - | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | 0.50 | - | - | - | 0.05 | $\bigcirc$ | - | - | 0.03 | - | - | - | 0.03 | 0.03 |
| 0095 | Microcladia coulteri |  | - | - | - | - | , | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | 0.03 | - | - | - | -- | - | , | - | 0 | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | 0.08 | 2.03 | 0.53 | - | 0.55 | 1.05 | 1.53 | - | 0.08 | 1.03 | 1.03 | - | 0.10 | 0.08 | - | - | 0.05 |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0145 | Peysonneliopsis epiphytica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - |  |  | - | - | - | - | - | - | - | . | - | - |  |  |  |


| Species (spcode) | Species | s | 1-Jun-06 | 22-Aug-06 | 17-Nov-06 | 6-Mar-07 | 25-May-07 | 29-Aug-07 | 12-Dec-07 | 2-Apr-08 | 20-Jun-08 | 16-Sep-08 | 10-Dec-08 | 4-Feb-09 | 24-Jun-09 | 3-Sep-09 | 3-Dec-09 | 15-Apr-10 | 3-Jun-10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  |  |  |  | - | - | - | - | - |  | - |  | 0.03 |  |  |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - |  | - |  | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  |  |  |
| 0118 | Polyneura latissima |  | 0.03 | - | - | 2.00 | - | - | - | - | - | 0.03 | - | - | - | - | 0.03 | 0.05 | 0.53 |
| 0099 | Porphyra spp. |  |  | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | - | 0.03 | - | - | - | - | 0.03 | - | 0.50 | 0.03 | 0.03 | - | - | - | - | - |  |
| 0221 | Ptercladiella caioglossoides |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | 0.50 | 0.05 | - | - | 0.03 | 0.03 | 0.03 | - | - | ${ }^{-}$ | ${ }^{-}$ | - | - | 0.50 |
| 0042 | Pterygophora californica |  | 4.00 | 2.03 | 4.03 | 3.00 | 3.53 | 2.03 | 2.50 | 2.00 | 2.03 | 1.05 | 3.00 | 3.03 | 2.00 | 3.00 | 3.53 | 3.00 | 2.53 |
| 0187 | Pugetia firma |  | 0.05 | 0.03 | 0.03 | - | 0.05 | - | - | 0.50 |  | 0.03 | 0.05 | 0.53 | 0.05 | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | 1.50 | - | - | - | 2.00 | - | - | - | 1.00 |  | - | 3.50 | 0.50 | 1.50 | - | $0 \cdot$ |  |
| 0122 | Rhodoptilum plumosum |  | 0.08 | - | - | 0.50 | 0.05 | - | - | 0.03 | 0.03 |  | 0.03 | 0.05 | 0.05 | 0.03 | - | 0.08 | 0.05 |
| 0159 | Rhodymenia spp. |  | 2.03 | 0.58 | 0.10 | 1.50 | 4.53 | 0.10 | 0.10 | 2.05 | 0.10 | 0.55 | 0.05 | 1.03 | 4.00 | 1.05 | 1.05 | 0.10 | 1.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | 0.03 | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | - | - | 0.05 | - | - | - | - | 0.03 | - | 0.03 | - | - | - | - |  |
| 0988 | Weeksia spp. |  | - | 0.03 | 0.08 | - |  | 0.03 | 0.03 | - | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | - |  |
| 0057 | coralline crust |  | 39.00 | 32.00 | 41.50 | 62.50 | 47.00 | 44.50 | 52.00 | 38.50 | 44.00 | 44.00 | 44.50 | 41.00 | 48.50 | 36.50 | 42.00 | 59.00 | 54.50 |
| 1300 | filamentous red algae complex |  | 1.00 |  |  | 2.00 | 2.53 | - |  | 0.50 | 5.00 | 0.03 | 1.00 | 0.08 | 0.50 | - | 1.50 | 0.05 | 4.50 |
| 0059 | non-coralline crust |  | 3.50 | 4.00 | 0.58 | 0.05 | 0.03 | 4.53 | 0.55 | 0.03 | 3.00 | 3.50 | 1.55 | 0.58 | 3.03 | 1.53 | 0.05 | 2.03 | 1.08 |


| Subtidal Line Contact - Survey Algal and Substrate Abundan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 |
| Species |  | $\leqslant$ | 1-Sep-10 | 8-Nov-10 | 28-Feb-11 | 5-May-11 | 19-Aug-11 | 18-Nov-11 | 9-Mar-12 | 19-Jun-12 | 7-Sep-12 | 11-Dec-12 | 13-Mar-13 | 9-May-13 | 14-Aug-13 | 25-Nov-13 | 25-Mar-14 | 3-Jun-14 | 23-Jul-14 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  |  |  |  |  |  |  |  |  |  |  |  | - | 0.03 | - | - | - |  |
| 0047 | Amplisiphonia paciica |  | - | - | - | - | - | - | - | - | - |  | 1.00 | - |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  |  |  |  | - ${ }^{-}$ |  |  |  |  |  |  |  | - | - | - |  |  |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 32.50 | 28.00 | 28.00 | 25.00 | 36.50 | 38.50 | 32.50 | 27.00 | 48.50 | 33.50 | 29.50 | 39.00 | 42.00 | 33.50 | 31.50 | 38.00 | 41.00 |
| 0185 | Callithamnion spp./Pleonosporium spp. |  | - | - | - | - | - | - | 0.03 | - |  | - |  | - |  |  |  |  |  |
| 0064 | Callophyllis flabelluata |  | 0.05 | - | 0.08 | 0.08 | 0.03 | 0.10 | 2.00 | 1.55 | 0.08 | 0.08 | 0.03 | 0.58 | 0.08 | 0.10 | 0.08 | 2.03 | 0.08 |
| 0112 | Callophyllis spp. |  | 0.03 | 0.05 | 0.05 | 0.05 |  | 0.03 | 0.03 | 0.03 | - | 0.03 | - | 0.55 | 1.05 | 0.03 | 0.03 | 0.05 | 0.05 |
| 0239 | Chlorophyta (filamentous) |  | - |  |  | - |  | - | - | - | - | - | - | - | - | - |  | - |  |
| 0125 | Chondracanthus corymbiferus |  | 0.03 | 0.03 | 0.03 | - | - | 0.08 | 0.53 | 0.05 | 0.03 | 0.03 | 0.03 | 0.03 | - | 0.50 | - | 0.08 | 0.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  |  |  |  | - | - |  | - |  | - |  | - | - | - | - | - | - | - |
| 1302 | Chrysophyta |  | - |  | - | - | - |  | - | - | - |  |  | - | - | - | - | - | - |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - |  | - |  |  |  |  | - | - | - | - |
| 0055 | Corallina chilensis |  | - |  | - | - |  |  | - |  | - | - | 0.03 | - | 0.03 | 0.03 | - | - | - |
| 0052 | Cryptopleura ruprechtiana |  | 0.05 | 0.03 | 0.50 | 0.53 | 1.53 | 0.05 | 0.05 | 1.50 | 1.50 | 1.00 | 1.03 | 0.03 | - | 0.08 | 1.03 | 1.55 | 1.03 |
| 0115 | Cryptopleura violacea |  |  |  |  |  |  |  |  |  |  |  |  |  | - |  |  |  | - |
| 0036 | Cystoseira osmundacea |  | 5.00 | 3.50 | 4.00 | 5.53 | 6.50 | 3.50 | 4.00 | 6.50 | 9.50 | 5.50 | 3.50 | 5.00 | 7.00 | 7.00 | 5.50 | 6.50 | 10.00 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - |  | - | - | 0.03 | 0.03 | - |  | - | - | - |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - |  | - | - | - |  | - | - |  | - |  |
| 1830 | Desmarestia ligulata |  | 8.00 | 3.03 | - | - | 1.55 | - | - | 0.53 | 0.55 | - | - | 0.58 | 1.03 | 0.03 | - | 3.03 | 3.05 |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  | 0.03 |
| 0190 | Dictyota binghamiae |  | 0.03 | 0.03 | - | 0.03 | 0.03 | - | 0.05 | 1.00 | 0.03 | - | 0.50 | 0.50 | 0.03 | - | - | 1.00 | - |
| 0031 | Egregia menziesii |  | - |  | - |  |  | - | - |  | - | - | - | - | - | - | - | - | - |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1304 | Farlowia/Pikea spp.-complex |  |  | - | - | - | - |  | 0.03 | - | - | - |  |  | - | 0.03 | - | - | - |
| 0193 | Fauchea laciniata |  | 0.08 | - | - | 0.03 | 0.05 | - | 0.03 | 0.03 | 0.08 | - | 0.03 | 0.10 | 0.05 | - |  | 1.03 | 0.05 |
| 0142 | Fryeella gardneri |  | - | - | - | 0.03 | 0.05 | - | - | 0.05 | - | - | 0.50 | 0.50 | 0.03 | - | - | 0.53 | - |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0075 | Gelidium robustum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | 0.03 | - | - | - |  | - | - | - | - | - | - | - | - | - |
| 0212 | Hymenena spp. |  | - |  | - |  | - | - | - |  | - |  | - |  |  | - | - | - | - |
| 0035 | Laminaria setchellii |  | 1.55 | 0.05 | 1.05 | 1.55 | 2.53 | 3.50 | 1.05 | 1.03 | 1.53 | 1.05 | 1.55 | 0.08 | 1.05 | 2.03 | 2.03 | 0.10 | 2.53 |
| 0233 | Laminariales |  | 0.05 | 0.05 | 0.05 | 0.03 | - | - | 0.03 | 0.05 | 0.05 | - | - | 0.03 | 0.08 |  | - | 0.03 | 0.03 |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0230 | Mazzaella rosea |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | 0.03 | - | - | - | 0.03 | - | - | - | 0.05 | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | $\checkmark$ | - |
| 0153 | Neoptiota spp. |  | - | - | - | 0.03 | - | - | 0.03 | - | 0.03 | 0.05 | 0.05 | 0.05 | 0.08 | 0.03 | 0.05 | 1.58 | 0.03 |
| 0041 | Nereocystis luetkeana |  | 0.08 | 0.05 | 0.03 | 0.03 | 0.05 | - | - | 0.08 | - | - | - | 0.03 | 0.03 | - | - | 0.08 | 0.08 |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | $0 \cdot$ | - | - | - | - | - | - | - | - | - | - |
| 0096 | Opuntiella californica |  | - | $\stackrel{-}{-}$ | 0.03 | - | 0.05 | - | 0.03 | - | - | - | 0.03 | 0.05 | 0.03 | - | 0.03 | 0.03 | 0.03 |
| 0184 | Osmundea spp. |  | - | 0.03 | - | - | - | $0 \cdot$ | - | - | - | - | - | - |  | - | - | - | - |
| 0145 | Peysonneliopsis epiphytica |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |
| 0199 | Phaeophyta |  | - | - | - | - | - |  | - | - | - | - | - | - | - | - | 0.03 | - |  |


| Species Code (spcode) | Species | ! | 1-Sep-10 | 8-Nov-10 | 28-Feb-11 | 5-May-11 | 19-Aug-11 | 18-Nov-11 | 9-Mar-12 | 19-Jun-12 | 7-Sep-12 | 11-Dec-12 | 13-Mar-13 | 9-May-13 | 14-Aug-13 | 25-Nov-13 | 25-Mar-14 | 3-Jun-14 | 23-Jul-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1144 | Phycodrys spp. |  | - |  | - |  | - |  |  |  |  |  |  | - | - |  |  |  |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | . | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium paciicum |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | 0.03 | - - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | 0.05 | - | - | 0.03 | $\bigcirc$ | - | - | - | - | - | - | - |  |
| 0106 | Prionitis spp. |  | - | - | - | - | - | - | - |  | 0.03 | - | - | - | - | - | - | - |  |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | $\bigcirc$ | - | - | - | - | - | - | - |  | - | - | 1.00 | 0.03 | - | 1.00 | - | - |
| 0042 | Pterygophora californica |  | 2.50 | 2.50 | 4.50 | 3.50 | 2.05 | 5.50 | 4.00 | 3.00 | 3.00 | 2.05 | 4.00 | 3.53 | 1.03 | 2.53 | 3.00 | 3.00 | 2.50 |
| 0187 | Pugetia firma |  | 0.03 | 0.03 | 0.03 |  | 0.05 | - | 0.03 | 0.05 | 0.08 | 0.03 | - | 0.05 | 0.05 | - | 0.03 | 0.05 | 0.03 |
| 0219 | Rhodophyta (juv. blades) |  | 2.50 | - | 2.53 | 4.00 | - | - | - |  |  | - | - | 3.00 |  | - | 2.53 | - |  |
| 0122 | Rhodoptilum plumosum |  | 0.10 | - | 0.05 | 0.58 | 0.05 | - | 0.03 | 0.10 | 0.03 | - | 0.03 | 0.10 | 0.08 | - | 0.08 | 0.55 | 0.08 |
| 0159 | Rhodymenia spp. |  | 1.05 | 0.08 | 0.05 | 3.00 | 5.00 | 2.03 | 4.50 | 5.00 | 6.50 | 0.58 | 0.55 | 3.00 | 4.00 | 2.53 | 2.50 | 5.50 | 1.55 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | 0.03 | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | 0.03 |  |
| 0014 | Ulva spp. |  | 0.05 | $\bigcirc$ | - | 0.05 | - | $0 \cdot$ | - | - | 0.03 | - | - | - | $0{ }^{-}$ | $\bigcirc$ | - | - | 0.03 |
| 0988 | Weeksia spp. |  | 0.08 | 0.08 | 0.05 | 0.05 | - | 0.05 | - | - | 0.05 | 0.03 | - | 0.03 | 0.08 | 0.03 | 0.08 | - | 0.03 |
| 0057 | coralline crust |  | 47.50 | 48.00 | 47.00 | 42.00 | 37.00 | 50.50 | 43.00 | 52.00 | 42.50 | 46.50 | 59.00 | 54.00 | 47.50 | 46.50 | 51:00 | 52.00 | 53.00 |
| 1300 | filamentous red algae complex |  | 3.50 | 0.05 | 1.53 | 2.05 | 1.53 | 0.53 | 0.03 | 3.03 | 0.50 | 0.53 | 0.05 | 2.00 | 1.50 | 0.50 |  | 1.58 | 1.00 |
| 0059 | non-coralline crust |  | 2.00 | 3.00 | 1.05 | 2.50 | 5.00 | 0.10 | 0.55 | 2.00 | 0.55 | 2.05 | 0.03 | 0.50 | 1.00 | 0.58 | 4.03 | 4.50 | 4.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abundan

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | 2-Jan-15 |
| :---: | :---: | :---: |
| 0981 | Ahnfeltiopsis linearis |  |
| 0047 | Amplisiphonia pacifica |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  |
| 0245 | Bryopsis spp. |  |
| 0049 | Calliarthron/Bossiella spp.-complex | 41. |
| 0185 | Callithamnion spp./Pleonosporium spp. |  |
| 0064 | Callophyllis flabellulata | 0.10 |
| 0112 | Callophyllis spp. | 0.03 |
| 0239 | Chlorophyta (filamentous) |  |
| 0125 | Chondracanthus corymbiferus | 0.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  |
| 1302 | Chrysophyta |  |
| 0025 | Coilodesme californica |  |
| 0055 | Corallina chilensis |  |
| 0052 | Cryptopleura ruprechtiana | 0.0 |
| 0115 | Cryptopleura violacea |  |
| 0036 | Cystoseira osmundacea | 6.53 |
| 1189 | Delesseria decipiens |  |
| 0235 | Delesseriaceae (juv.) |  |
| 1830 | Desmarestia ligulata |  |
| 0030 | Dictyoneurum californicum |  |
| 0190 | Dictyota binghamiae |  |
| 0031 | Egregia menziesii |  |
| 0071 | Erythrophyllum delesserioides |  |
| 1304 | Farlowia/Pikea spp.complex | 0.03 |
| 0193 | Fauchea laciniata |  |
| 0142 | Fryeella gardneri |  |
| 0072 | Gastroclonium subarticulatum |  |
| 0075 | Gelidium robustum | 0.03 |
| 0149 | Halicystis ovalis (=Derbesia marina) |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  |
| 0212 | Hymenena spp. |  |
| 0035 | Laminaria setchellii | 0.58 |
| 0233 | Laminariales |  |
| 1640 | Macrocystis pyrifera |  |
| 0082 | Mastocarpus papillatus |  |
| 0230 | Mazzaella rosea |  |
| 3383 | Mazzaella splendens |  |
| 1242 | Membranoptera/Branchioglossum spp. |  |
| 0095 | Microcladia coulteri |  |
| 0153 | Neoptilota spp. | 0.03 |
| 0041 | Nereocystis luetkeana |  |
| 1154 | Nienburgia andersoniana |  |
| 0096 | Opuntiella californica |  |
| 0184 | Osmundea spp. |  |
| 0145 | Peysonneliopsis epiphytica |  |
| 0199 | Phaeophyta |  |

Species

| (spcode) | Species |
| :---: | :--- |
| 1144 | Phycodrys spp |

135 Phyllospadix sp
0117 Plocamium pacif
0117 Plocamium pacificum
0118 Polyneura latissim
0.05
099 Porphyra spp.
0221 Ptercladiella caloglossoides
0192 Ptercladiella caloglossoides

-     - 

0042 Pterygophora californica 4.50
0187 Pugetia firma
$\begin{array}{llr}0219 & \text { Rhodophyta (juv. blades) } & - \\ 0122 & \text { Rhodopytium plumasum } & - \\ 0159 & \text { Rhodymenia spp. } & 0.10\end{array}$
$\begin{array}{ll}0159 & \text { Rhodymenia spp. } \\ 0104 & \text { Sarcodiotheca gaudichaudii }\end{array}$
$\begin{array}{llr}0104 & \text { Sarcodiotheca gaudichauan } & - \\ 0155 & \text { Scinaia confusa } & - \\ 0014 & \text { Ulva spp. } & 0.05 \\ 0988 & \text { Weeksia spp. } & 60.50\end{array}$
$\begin{array}{lll}0057 & \text { coralline crust } & 60.50 \\ 1300 & \text { filamentous red algae complex } & \end{array}$
0059 non-coralline crust 3.53

## Subtidal Line Contact - Survey Invertebrate Abundance (\% Cover for 7 m squared) - Patton Cove SC 2 - 6 m

## Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | Survey: Survey Date: Sampling Code | $\begin{array}{r} 2 \\ 9-O c t-76 \end{array}$ | $\begin{array}{r} 3 \\ \text { 14-Jan-77 } \end{array}$ | $\begin{array}{r} 4 \\ \text { 5-Jul-77 } \end{array}$ | $\begin{array}{r} 7 \\ \text { 15-May- } 78 \end{array}$ | $\begin{array}{r} 8 \\ \text { 27-Jun-78 } \end{array}$ | $\begin{array}{r} 9 \\ 8 \text {-Sep-78 } \end{array}$ | $\begin{array}{r} 12 \\ \text { 12-Feb-79 } \end{array}$ | $\begin{array}{r} 13 \\ \text { 14-May-79 } \end{array}$ | $\begin{array}{r} 15 \\ \text { 15-Aug-79 } \end{array}$ | $\begin{array}{r} 16 \\ \text { 6-Nov-79 } \end{array}$ | $\begin{array}{r} 19 \\ 5 \text {-May-80 } \end{array}$ | $\begin{array}{r} 21 \\ \text { 19-Sep-80 } \end{array}$ | $\begin{array}{r} 25 \\ \text { 29-Apr-81 } \end{array}$ | $\begin{array}{r} 26 \\ \text { 13-Jul-81 } \end{array}$ | $\begin{array}{r} 28 \\ \text { 10-Nov-81 } \end{array}$ | $\begin{array}{r} 30 \\ \text { 12-Feb-82 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0499 | Abiet/Sertularella/Sertularia spp.(A.S.S.) | 6 | - | - | - | - | - |  |  |  | - | - |  |  |  |  |  |  |
| 0608 | Acanthancora cyanocrypta | 6 | - | - | - | - | - | - | - | - |  | - | - | - |  | - |  |  |
| 0493 | Aglaophenia spp. | 6 | - | - | - | - | - | - | - | - |  | - | - | - |  | - |  |  |
| 0495 | Balanophyllia elegans | 6 | - | - | - | - | - | - | - | - |  | - | - | - |  | - |  | - |
| 0394 | Balanus spp. | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0773 | Balanus/Tetraclita spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0272 | Corynactis californica | 6 | 0.50 | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - |
| 0683 | Dendropoma spp. | 6 | - | 1.50 | 0.50 | 3.50 | - | - | - | - | - | - | - | - | - | - |  | - |
| 0387 | Dodecaceria fewkesi | 6 | 2.00 | 1.00 | 1.50 | 1.00 | 1.50 | 5.00 | 3.50 | - | 1.50 | 1.00 |  | - | - | 0.50 |  | - |
| 0735 | Phragmatopoma californica | 6 |  | - | - | - | - |  | - | - | - | - | - | - | - |  |  | 2.00 |
| 0492 | Porifera (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0615 | Serpulidae | 6 | 2.00 | - | - | - | - | - | - | - | - | - |  |  |  | - |  | - |
| 0318 | Serpulorbis squamigerus | 6 | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |
| 0404 | Tetracila rubescens | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0508 | bryozoa (erect) | 6 | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0509 | bryozoa (foliose) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0480 | tunicates, compound/social | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

## Sampling code: $6=$ Coverage Based on \# of Contact Po

|  |  |  | 31 | 32 | 33 | 37 | 38 | 39 | 41 | 44 | 45 | 47 | 49 | 50 | 51 | 52 | 55 | 57 | 59 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | $\leqslant$ | 12-May-82 | 13-Jul-82 | 17-Sep-82 | 5-May-83 | 14-Jul-83 | 12-Sep-83 | 23-Jan-84 | 18-Jun-84 | 13-Sep-84 | 30-Jan-85 | 1-May-85 | 22-Jul-85 | 24-Sep-85 | 20-Nov-85 | 15-Apr-86 | 11-Sep-86 | 10-Dec-86 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | . | - | - | - | 0.50 | - | - | - | - | - |  |
| 0493 | Aglaophenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0495 | Balanophyllia elegans |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.00 | - | - |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1.50 |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0272 | Corynactis californica |  | - | - | - | - | - | - | - | - | - | - | - | - | 1.00 | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | 0.50 | 1.00 | - | - | - | - | 0.50 | - | 0.50 | - | - | - | - | 0.50 | 0.50 |
| 0387 | Dodecaceria fewkesi |  | - | - | 0.50 | 1.00 | 2.50 | - | - | - | 0.50 | - | 2.50 | - | - | - | - |  |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | 0.50 | 5.50 | 1.50 | 3.00 | 1.00 | 6.50 | 9.00 | 11.00 | 6.50 | 10.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | 0.50 | 1.50 | 2.00 | 0.50 |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |  |
| 0404 | Tetracita rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | 0.50 | - | - | 0.50 | 0.50 | 4.00 | 0.50 | - | 4.50 |
| 0508 | bryozoa (erect) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - ${ }^{-7}$ |  |
| 0509 | bryozoa (foliose) |  | - | - | - | - | - | - | - | - | - | - | - | 050 | - | 050 | - | 0.50 |  |
| 0480 | tunicates, compound/social |  |  |  |  | - | - | - | - | - |  | - | - | 0.50 | - | 0.50 | - | 1.50 |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

## Sampling code: $6=$ Coverage Based on \# of Contact Po

|  |  |  | 61 | 62 | 64 | 73 | 74 | 75 | 76 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 86 | 87 | 88 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | $\leqslant$ | 15-May-87 | 21-Jul-87 | 14-0ct-87 | 20-Feb-90 | 10-May-90 | 22-Aug-90 | 10-Nov-90 | 20-Jun-91 | 26-Aug-91 | 25-Oct-91 | 31-Mar-92 | 24-Jun-92 | 1-Sep-92 | 19-Nov-92 | 30-Jun-93 | 24-Sep-93 | 9-Nov-93 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  |  |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0493 | Aglaophenia spp. |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |  |
| 0495 | Balanophyllia elegans |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0272 | Corynactis californica |  | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | 0.50 | 0.50 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi |  | - | 0.50 | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 4.00 | 4.50 | 4.50 | $\stackrel{\circ}{-}$ | 6.00 | - | 0.50 | - | 1.50 | 1.50 | 1.00 | - | - | - | - | - |  |
| 0492 | Porifera (encrusting) |  | 1.00 | 4.50 | 4.00 | 1.50 | - | - | 2.00 | - | - | 2.00 | 0.50 | - | - | - | - | - | 0.50 |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | 2.50 | 2.00 | - | - | 0.50 | 1.00 | 0.50 | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | 1.50 | 3.00 | 5.00 | 1.50 | - | - | 1.50 | - | 3.00 | 9.50 | 1.50 | - | - | 1.00 | - | - | 11.00 |
| 0508 | bryozoa (erect) |  | - | - | 0.50 | - | - | 2.00 | - | - | - | - | - | - | - | - | - | - |  |
| 0509 | bryozoa (foliose) |  | - | - | 0.50 |  | - |  | $5 \cdot$ | - | $\stackrel{-}{ }$ | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | 0.50 | 0.50 | - | 1.50 | - | 1.50 | 0.50 | - | 2.00 | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

Sampling code: $6=$ Coverage Based on \# of Contact Poi

|  | Species |  | 89 | 90 | 91 | 92 | 93 | 94 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | : | 5-Apr-94 | 16-Jun-94 | 15-Aug-94 | 22-Nov-94 | 26-Apr-95 | 20-Jul-95 | 6-May-99 | 17-Aug-99 | 21-Oct-99 | 12-May-00 | 10.Jul-00 | 21-Sep-00 | 7-Dec-00 | 6-Apr-01 | 29-Jun-01 | 7-Sep-01 | 19-Nov-01 |
| $\begin{aligned} & \text { Code } \\ & \text { (spcode) } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0493 | Aglaophenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0495 | Balanophyllia elegans |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | 11.50 | 1.50 | - | - | 2.50 |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0272 | Corynactis californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | 0.50 | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | 0.50 | - | - |  |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 2.00 | 2.50 | - | - | 1.00 |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | 1.50 | 4.50 | - | - | - | - | - | - | 1.00 | 1.00 | 7.50 | 7.00 | - | - | 3.50 |
| 0508 | bryozoa (erect) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0509 | bryozoa (foliose) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | 1.00 | - | - | - | - | - | - | - | - | - | 1.50 | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

| Sampling code: $6=$ Coverage Based on \# of Contact Poi |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 |
| Species |  | ! | 22-Feb-02 | 5-Jun-02 | 14-Aug-02 | 15-Jan-03 | 6-Mar-03 | 30-Apr-03 | 2-Sep-03 | 7-Jan-04 | 23-Mar-04 | 25-May-04 | 24-Aug-04 | 4-Feb-05 | 13-May-05 | 21-Jun-05 | 10-Aug-05 | 7-Dec-05 | 31-Mar-06 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0493 | Aglaophenia spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  | 0.50 |
| 0495 | Balanophyllia elegans |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |  |
| 0394 | Balanus spp. |  | - | 5.00 | 6.00 | 0.50 | - | - | 1.00 | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/etracila spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | 2.00 | 0.50 |  |
| 0272 | Corynactis californica |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | 0.50 | - | - |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | - | - | - | 2.50 | 0.50 | - | - | - | - | - | - | 0.50 | 8.50 | 5.50 | 7.00 | 1.50 | 3.00 |
| 0492 | Porifera (encrusting) |  | - | - | - | 3.50 | 1.50 | 1.50 | 1.00 | 2.00 | 2.00 | 0.50 | 0.50 | 4.00 | 6.00 | 5.50 | 2.50 | 1.50 | 2.00 |
| 0615 | Serpulidae |  | - | - | - | - | - |  |  |  |  |  |  |  |  |  | - | - |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | . - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - |
| 0507 | bryozoa (encrusting) |  | 1.00 | 0.50 | 1.00 | 6.50 | 4.50 | - | - | 3.50 | 9.50 | - | 2.00 | 4.50 | 4.50 | 5.00 | 4.00 | 8.50 | 8.50 |
| 0508 | bryozoa (erect) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0509 | bryozoa (foliose) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | 0.50 | - | - | - | - | - | - | - | 0.50 | 1.50 | - | 0.50 | 0.50 | 3.00 |


| Subtidal Line Contact - Survey Invertebrate Abundance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of Contact Poi |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 |
| Species |  | $\mathfrak{}$ | 1-Jun-06 | 22-Aug-06 | 17-Nov-06 | 6-Mar-07 | 25-May-07 | 29-Aug-07 | 12-Dec-07 | 2-Apr-08 | 20-Jun-08 | 16-Sep-08 | 10-Dec-08 | 4-Feb-09 | 24-Jun-09 | 3-Sep-09 | 3-Dec-09 | 15-Apr-10 | 3-Jun-10 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | 0.50 | 2.50 |  | 1.00 | 0.50 | 0.50 | - | 0.50 | 1.50 | 1.50 | 2.00 | 2.00 | 1.50 | - | - |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0493 | Aglaophenia spp. |  | 1.50 | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0495 | Balanophyllia elegans |  | - | - | . - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetraclita spp. |  | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - | - | 15.00 | 12.00 | - |  |
| 0272 | Corynactis californica |  | - | - | 1.50 | - |  | 1.00 | - | 0.50 |  | 0.50 | 2.00 | 0.50 | 0.50 | 4.00 | 2.00 | 0.50 | 0.50 |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 2.00 | 4.50 | 9.50 | - | 6.00 | 4.50 | 5.00 | 3.00 | 4.00 | 4.50 | 2.00 | 5.50 | 3.00 | 0.50 | 3.50 | 4.50 |  |
| 0492 | Porifera (encrusting) |  | 2.00 | 4.50 | 3.50 | 2.00 | 2.00 | 0.50 | 0.50 | 3.00 | 3.50 | 4.50 | 2.50 | 2.00 | 2.00 | 1.50 | 2.00 | 1.50 | 0.50 |
| 0615 | Serpulidae |  | . | . | - | - | . | - | . | . | . | . |  |  |  | . | - | . |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | 4.50 | 4.50 | 5.00 | 1.50 | 3.50 | 6.00 | 9.50 | 7.00 | 4.50 | 8.50 | 11.50 | 10.00 | 6.50 | 6.00 | 7.50 | 0.50 |  |
| 0508 | bryozoa (erect) |  | - | - | 4.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0509 | bryozoa (foliose) |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | 1.00 | - | 1.50 | 0.50 | - | - | - | - | - | 0.50 | - | 0.50 | 1.00 | 1.00 | 0.50 | - |  |


| Subtidal Line Contact - Survey Invertebrate Abundance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of Contact Poi |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 |
| Species |  | ! | 1-Sep-10 | 8-Nov-10 | 28-Feb-11 | 5-May-11 | 19-Aug-11 | 18-Nov-11 | 9-Mar-12 | 19-Jun-12 | 7-Sep-12 | 11-Dec-12 | 13-Mar-13 | 9-May-13 | 14-Aug-13 | 25-Nov-13 | 25-Mar-14 | 3-Jun-14 | 23-Jul-14 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0499 | Abiet./Sertularella/Sertularia spp.(A.S.S.) |  | - | - | 0.50 | 1.50 | 0.50 | - | - | 0.50 | 0.50 | - | - | - |  | - | - | - |  |
| 0608 | Acanthancora cyanocrypta |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0493 | Aglaophenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0495 | Balanophyllia elegans |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 0.50 |
| 0394 | Balanus spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetraclita spp. |  | 12.00 | 10.00 | 3.00 | 2.50 | 14.00 | - | - | - | 16.50 | 11.50 | - | 0.50 | 4.50 | 7.50 | - | - |  |
| 0272 | Corynactis californica |  | 1.00 | 0.50 | 1.00 | 4.00 | 2.00 | - | 3.50 | 0.50 | 2.00 | 1.00 | 2.00 | 2.00 | 2.50 | 1.50 | 1.00 | 2.50 | 2.00 |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | . | - | - | - |  |  |  |  |
| 0387 | Dodecaceria fewkesi |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 0.50 | 5.50 | 3.50 | 6.00 | 4.00 | 0.50 | 8.00 | 6.50 | - | 4.50 | - | - |  | 2.50 | 3.50 | 2.50 | 4.50 |
| 0492 | Porifera (encrusting) |  | 1.00 | 0.50 | 7.00 | 3.50 | 5.00 | - | 4.00 | 6.00 | 2.00 | 4.00 | - | 1.50 | 1.50 | 3.00 | 2.50 | 2.50 | 1.50 |
| 0615 | Serpulidae |  |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | . |  |
| 0318 | Serpulorbis squamigerus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0404 | Tetracila rubescens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | 1.50 | 5.00 | 3.00 | 2.50 | 1.50 | - | 5.50 | 2.00 | 1.00 | 3.50 | - | 1.00 | 3.00 | 5.00 | 1.50 | - | 1.00 |
| 0508 | bryozoa (erect) |  |  | - | 2.50 | - | - | - | - | - | - | - | - | 0.50 | - |  | 0.50 | - |  |
| 0509 | bryozoa (foliose) |  | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | 0.50 | 0.50 | 0.50 | - | 0.50 | - | 0.50 | - | - | - | - | 2.50 | 2.00 | 1.00 | - | 0.50 |  |

## Subtidal Line Contact - Survey Invertebrate Abundance

## Sampling code: $6=$ Coverage Based on \# of Contact Poi

pecies

167
(spcode) Species
0499 Abiet./Sertularella/Sertularia spp.(A.S.S.)
0608 Acanthancora cyanocrypta
0493 Aglaophenia spp.
0495 Balanophyllia elegans
0394 Balanus spp.
0773 Balanus/Tetraclita spp.
0272 Corynactis californic
0683 Dendropoma spp.
0683 Dendropoma spp.
$\begin{array}{lll}0735 & \text { Dodecaceria fewkesi } & \\ \text { Phragmatopoma californica } & 3.50\end{array}$
0492 Phragmatopoma califor
$\begin{array}{ll}0615 & \text { Serpulidae } \\ 0318 & \text { Serpularbis squamigerus }\end{array}$
0404 Tetracilia rubescens
0507 bryozoa (encrusting)
0508 bryozoa (erect)
0480 tunicates, compound/social

| Sampling code: $6=$ Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |  |
| Species |  | Survey Date: | 11-Oct-76 | 19-Mar-77 | 13-Jul-77 | 4-Oct-77 | 17-Mar-78 | 24-May-78 | 5-Jul-78 | 25-Sep-78 | 16-Nov-78 | 4-Jan-79 | 23-Mar-79 | 23-May-79 | 30-Jul-79 | 18-Sep-79 | 21-Nov-79 | 4-Jan-80 |
| Code (spcode) | Species | Sampling Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum | 6 | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | 1.50 | - | - | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - |  |
| 0981 | Ahnfelliopsis linearis | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0047 | Amplisiphonia pacifica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1374 | Anisocladella pacifica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex | 6 | - | - | - | - | - | - | - | - | - | - | 0.55 | 0.05 | - | - | - |  |
| 0050 | Botryocladia pseudodichotoma | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. | 6 | - | - | - | ${ }^{-}$ | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | 0.03 |  |
| 0049 | Calliarthron/Bossiella spp.complex | 6 | 34.50 | 39.50 | 39.00 | 27.50 | 21.00 | 27.00 | 28.50 | 36.00 | 31.50 | 28.50 | 33.00 | 38.50 | 36.00 | 36.00 | 31.00 | 30.50 |
| 0054 | Callithamnion pikeanum | 6 | - |  | - |  | - | - | - |  | - | - | - | - |  |  |  |  |
| 0185 | Callithamnion spp./Pleonosporium spp. | 6 | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0064 | Callophyllis flabellulata | 6 | - | - | - | 0.05 | - | 0.03 | 0.50 | - | - | 0.03 | - | - | 0.03 | - | 0.55 | 0.03 |
| 0112 | Callophyllis spp. | 6 | 0.50 | 4.03 | - | - | - | 0.50 | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | 0.53 | 0.05 | - | 0.55 |  |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |
| 0125 | Chondracanthus corymbiferus | 6 | 0.50 | - | 0.50 | - | 0.03 | 0.03 | 0.08 | 0.05 | 0.10 | 1.03 | 1.50 | 2.50 | 1.05 | 3.03 | 4.00 | 1.03 |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0987 | Chondria decipiens . | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta | 6 | - | - | - | - | - | - | - | - | - | - | 0.05 | 0.03 | - | - | - |  |
| 0010 | Cladophora spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. | 6 | - | - | - | - | - | - | - | - | ${ }^{\circ}$ | - | $\stackrel{\square}{\circ}$ | - | - | - | - |  |
| 0055 | Corallina chilensis | 6 | 2.00 | 3.50 | - | 1.00 | 4.00 | 2.50 | 9.00 | 7.00 | 2.00 | 1.53 | 6.50 | 6.50 | 5.50 | 5.00 | 3.00 |  |
| 0052 | Cryptopleura ruprechtiana | 6 | - | 7.00 | 11.00 | 6.00 | 1.55 | 16.00 | 13.00 | 13.00 | 11.50 | 8.00 | 17.50 | 31.50 | 38.00 | 30.00 | 19.50 | 15.50 |
| 0115 | Cryptopleura violacea | 6 | - |  |  |  | - | 0.10 | - | 0.03 | 1.53 | 0.05 | 0.55 | 0.55 |  | 1.03 | 0.50 |  |
| 0036 | Cystoseira osmundacea | 6 | 3.53 | 5.50 | 1.05 | 4.00 | 4.03 | 6.50 | 0.55 | 6.03 | 4.03 | 4.50 | 0.55 | 1.50 | 5.50 | 2.05 | 2.03 | 4.00 |
| 0235 | Delesseriaceae (juv.) | 6 | 6.00 | 0.50 |  |  | - |  |  |  |  | - |  |  |  |  | - |  |
| 1830 | Desmarestia ligulata | 6 | 1.00 | - | 16.00 | 1.05 | - | 13.50 | 25.00 | 52.50 | 36.50 | 13.50 | 0.05 | 2.55 | 7.53 | 3.53 | - |  |
| 0030 | Dictyoneurum californicum | 6 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii | 6 | 0.05 | - | - | - | - | - | - | - | - | - | - | - | 0.08 | 0.03 | 0.05 |  |
| 3326 | Endarachne/Petalonia-complex | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides | 6 | - | - | - | - | - | - | ${ }^{-}$ | - | - | - | 5 | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex | 6 | - | 0.05 | - | - | - | 0.08 | 0.50 | - | 0.03 | - | 0.53 | 0.53 | 0.08 | 0.55 | 0.10 | 0.0 |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 6 | - | 1.00 | - | 1.00 | 0.03 | - | 1.00 | - | 0.03 | 0.53 | 0.50 | - | 0.03 | 0.08 | 0.05 | 0.50 |
| 0206 | Gelidium spp. | 6 | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | - | - | - | - | - | 1.03 | - | - | - | - | - | - | - | - | - |  |
| 0983 | Haplogloia andersonii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. | 6 | - | - | - | 0.50 . | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii | 6 | 0.05 | - | 0.05 | 1.05 | 0.08 | 0.55 | 1.53 | 0.10 | 0.10 | 0.10 | 1.05 | 1.05 | 0.08 | 0.08 | 0.55 |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | Survey Date: Sampling Code | 11-0ct-76 | 19-Mar-77 | 13-Jul-77 | 4-0ct-77 | 17-Mar-78 | 24-May-78 | 5-Jul-78 | 25-Sep-78 | 16-Nov-78 | 4-Jan-79 | 23-Mar-79 | 23-May-79 | 30-Jul-79 | 18-Sep-79 | 21-Nov-79 | 4-Jan-80 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales | 6 | - |  | - | 1.00 | - | 0.08 | - | 0.03 | - | 0.03 | 0.50 | 0.03 | 0.05 | 0.03 | 0.03 |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0082 | Mastocarpus papillatus | 6 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | - | - | - | - | - | - | - | - | - | - | $\checkmark$ | - | - |  | - |  |
| 3383 | Mazzaella splendens | 6 | - | - | 0.03 | - | - | 0.05 | 0.53 | 1.03 | 0.05 | - | 2.03 | 1.05 | 1.50 | 1.53 | 2.53 | 0.03 |
| 1014 | Melobesia mediocris | 6 | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 | 0.05 | 0.05 | 0.05 |  | 0.05 |
| 0094 | Microcladia borealis | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  | - |  |
| 0095 | Microcladia coulteri | 6 | - | 0.03 | - | - | 0.03 | 0.55 | 0.05 | 0.05 | 0.05 | 0.08 | 1.53 | 2.05 | 0.03 | 0.08 | 1.05 | 0.08 |
| 0153 | Neoptilota spp. | 6 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana | 6 | - | - | 1.03 | - | - | - | 0.10 | 0.03 | 0.03 | 0.03 | 0.03 | 1.05 | 0.10 | 0.50 | 0.03 |  |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0096 | Opuntiella californica | 6 | - | - | - | - | - | - | - | - | - | - |  |  | - |  | - |  |
| 0184 | Osmundea spp. | 6 | - | 0.05 | 1.50 | - | - | 0.03 | - | 0.03 | 0.03 | 0.53 | 4.00 | 1.03 | 0.55 | 1.05 | 2.05 | 0.53 |
| 0199 | Phaeophyta | 6 | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0247 | Phaeostrophion irregulare | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. | 6 | 0.53 | 2.00 | 4.55 | 4.00 | 4.00 | 6.50 | 2.50 | 5.00 | 3.00 | 2.03 | 6.00 | 4.53 | 3.50 | 4.50 | 1.00 | 4.50 |
| 0203 | Pikea robusta | 6 |  |  |  |  |  |  |  |  |  | - |  |  |  | - | - |  |
| 0117 | Plocamium pacificum | 6 | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0118 | Polyneura latissima | 6 | - | - | - | - | - | - | 0.53 | 0.03 | - | - | - | - |  | 0.05 | - |  |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis | 6 | - | - | - | - | - | - | - | 0.03 | - | - |  |  |  |  | - |  |
| 0106 | Prionitis spp. | 6 | 1.00 | 0.50 | - | - | 0.53 | 0.53 | 1.03 | 0.03 | 0.55 | 0.08 | 0.50 | 1.00 | - | 0.50 | 0.05 | 0.08 |
| 0221 | Ptercladiella caloglossoides | 6 | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  | - |  |
| 1115 | Pterochondria woodii var. woodii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea | 6 | - | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.08 |  |
| 0042 | Pterygophora californica | 6 | 5.00 | 5.00 | 2.03 | 2.53 | 3.03 | 4.00 | 1.55 | 1.58 | 1.58 | 2.03 | 5.00 | 3.00 | 2.00 | 5.00 | 2.53 | 1.55 |
| 0187 | Pugetia firma | 6 | - | - | - | - | - | - |  | - | - | . | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) | 6 | - | - | - | - | - | - | 1.50 | - | - | - | 0.53 | 1.50 | 0.50 | - | - |  |
| 0122 | Rhodoptilum plumosum | 6 | - |  | - | - |  | - |  | - | - | - |  |  | - | - | - |  |
| 0159 | Rhodymenia spp. | 6 | - | 0.03 | - | - | - | 0.08 | - | 0.05 | 0.10 | 0.05 | 0.50 | 0.03 | 1.08 | 1.53 | 0.03 | 0.08 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | - | - | - | - | 0.03 | 0.03 | - | - | 0.08 | 0.55 | 1.00 | 0.05 | 0.03 | 0.03 | 0.03 |
| 1326 | Sargassum muticum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa | 6 | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - |  |
| 0110 | Smithora naiadum | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | - |  |
| 0014 | Ulva spp. | 6 | 0.53 | 2.00 | 3.53 | - | - | 5.50 | 4.00 | 0.08 | 0.10 | 0.10 | 3.50 | 5.50 | 1.53 | 1.05 | 1.55 | 0.05 |
| 0057 | coralline crust | 6 | 29.00 | 22.50 | 40.00 | 32.00 | 37.00 | 29.00 | 26.50 | 25.00 | 26.00 | 31.50 | 36.50 | 39.00 | 35.50 | 38.50 | 42.00 | 19.00 |
| 1300 | filamentous red algae complex | 6 |  |  |  | - |  | - | 0.05 |  | - | 0.03 | 0.03 |  |  |  | 0.03 |  |
| 0059 | non-coralline crust | 6 | 1.50 | 1.00 | 2.50 | 0.05 | 4.53 | 2.50 | 2.50 | 0.10 | 0.05 | 1.03 | 3.00 | 3.50 | 1.03 | 2.53 | 4.50 | 0.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abund:

## Sampling code: $6=$ Coverage Based on \# of Contact Point:



| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | ! | 25-Mar-80 | 21-May-80 | 16-Jul-80 | 23-Sep-80 | 24-Nov-80 | 26-Jan-81 | 11-May-81 | 22-Jul-81 | 1-Oct-81 | 18-Jan-82 | 8-Apr-82 | 20-Jul-82 | 30-Sep-82 | 14-Jan-83 | 20-May-83 | 28-Jul-83 | 20-Sep-83 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | - | 0.55 | 0.08 | 0.10 | - |  | 0.03 |  | - |  |  | 0.03 | - | - | 0.08 | - | - |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0230 | Mazzaella rosea |  | - | - | - |  | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.10 | - |
| 3383 | Mazzaella splendens |  | - | 0.08 | 0.58 | 0.55 | 1.03 | 0.53 | 0.10 | 2.00 | 0.08 | - | 1.55 | 0.55 | 0.55 | - | 0.10 | 1.55 | 0.55 |
| 1014 | Melobesia mediocris |  | 0.05 | 0.03 | 0.05 | 0.05 | - | - | 0.05 | 0.05 | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | 0.03 | 0.05 | 0.05 | 0.03 |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |  |
| 0095 | Microcladia coulteri |  | 0.55 | 1.05 | 0.08 | 0.10 | 0.10 | 1.53 | 2.05 | 0.08 | 0.58 | 2.05 | 3.55 | 0.55 | 0.08 | 0.08 | 1.53 | 0.08 | 0.08 |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - |  |  |  |
| 0041 | Nereocystis luetkeana |  | - | 0.05 | 0.05 | 0.05 | 0.55 | 0.03 | - | - | - | - | - | - | - | - |  | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | 5 | $\stackrel{-}{-}$ | 5 | $\bigcirc$ | - | $\bigcirc$ | - | $\stackrel{-}{-}$ | $\bigcirc$ | 0 | - | - |  |
| 0184 | Osmundea spp. |  | 0.08 | 0.08 | 1.03 | 0.10 | 0.58 | 1.55 | 0.55 | 0.05 | 0.53 | 1.03 | 1.58 | 0.58 | 0.08 | 0.10 | - | 1.05 | 0.03 |
| 0199 | Phaeophyta |  |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | $\stackrel{-}{-}$ | - | - | $\cdots$ | $\cdots$ | - | - | $\cdots$ | - | - | 0.03 | - | $\stackrel{-}{\circ}$ | 5 | - | ${ }^{\circ}$ | - |
| 0135 | Phyllospadix spp. |  | 2.50 | 3.03 | 6.50 | 3.03 | 5.00 | 1.55 | 7.03 | 6.00 | 3.00 | 3.50 | 5.50 | 4.50 | 4.00 | 3.50 | 2.00 | 2.50 | 0.53 |
| 0203 | Pikea robusta |  | - | 0.03 | 0.03 | - | - |  | - | - |  | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | 0.05 | - | - | 0.03 | - | $\bigcirc$ | - | - | - | - | - | 5. |
| 0118 | Polyneura latissima |  | - | - | 0.03 | 0.53 | - | 0.03 | - | - | - | - | 0.03 | - | - | - | $\bigcirc$ | - | 0.50 |
| 0099 | Porphyra spp. |  | - | 0.53 | - |  | - |  | - | - | - | - | - | - | - | 5 | 0.03 | - | - |
| 0220 | Prionitis australis |  | - |  | - | 0.03 | $\cdots$ | 0.03 | 0.50 | - | $5 \cdot$ | - | - | 0.05 | - | 0.50 | - | - | - |
| 0106 | Prionitis spp. |  | 1.03 | 0.50 | 1.03 | 0.05 | 2.00 | 0.08 | 0.53 | 1.50 | 0.53 | 0.58 | 3.03 | 0.05 | 2.08 | 2.03 | 1.05 | 0.55 | 0.05 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - |  | - |  | - | - | - |  | - | - | - | - | - |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.55 | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | - | 0.05 | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0042 | Pterygophora californica |  | 2.53 | 1.05 | 0.55 | 2.53 | 2.00 | 2.03 | 1.58 | 0.10 | 1.08 | 0.58 | 1.55 | 4.00 | 2.05 | 0.10 | 0.58 | 0.58 | 1.53 |
| 0187 | Pugetia firma |  | - | - | - | - | - |  | - |  | - | - | - | - | - | - | - | - | - |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 0.05 | - |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |
| 0159 | Rhodymenia spp. |  | 0.05 | 0.05 | 0.55 | 1.53 | 0.55 | 0.08 | - | 0.05 | 0.03 | 0.08 | 1.08 | 1.53 | 1.53 | 0.08 | 0.55 | 1.08 | 0.05 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | 0.05 | 0.08 | 0.58 | 0.05 | 0.53 | 0.08 | 0.05 | 0.05 | 0.05 | 1.55 | 1.03 | 0.03 | 0.50 | 0.10 | 0.10 | 0.08 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | 0.03 | - | - | - | - | - | - | - | - | - |  | - | - | - | 0.03 | 0.03 |
| 0110 | Smithora naiadum |  | - |  | - | - | - | - | 0.05 | 2.53 | - | - | - | 0.03 | - | - | - |  |  |
| 0014 | Ulva spp. |  | 0.53 | 8.50 | 2.03 | 0.10 | 1.55 | 0.55 | 0.10 | 0.08 | 0.08 | 0.08 | 1.05 | 2.55 | 0.58 | - | 1.05 | 0.58 | 0.58 |
| 0057 | coralline crust |  | 27.50 | 33.50 | 28.00 | 26.50 | 38.00 | 16.00 | 22.00 | 16.50 | 18.50 | 22.00 | 28.50 | 43.00 | 31.50 | 4.03 | 23.00 | 29.50 | 35.00 |
| 1300 | filamentous red algae complex |  | 0.03 | 1.03 | 0.03 | 0.03 | 0.05 | 0.03 | - |  |  | 0.03 | 0.53 | 0.50 | 0.03 |  | 3.00 | 1.00 | 0.03 |
| 0059 | non-coralline crust |  | 1.53 | 0.55 | 0.10 | 0.58 | 4.00 | 1.05 | 0.55 | 0.55 | 0.50 | 0.53 | 2.03 | 2.50 | 2.50 | 0.10 | 0.55 | 0.10 | 3.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Point:



| Species Code (spcode) | Species | ! | 28-Nov-83 | 19-Jan-84 | 30-Mar-84 | 25-May-84 | 18-Jul-84 | 26-Sep-84 | 3-Dec-84 | 29-Jan-85 | 27-Mar-85 | 8-May-85 | 17-Jul-85 | 26-Sep-85 | 21-Nov-85 | 27-Mar-86 | 6-May-86 | 30-Jul-86 | 19-Sep-86 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | 0.05 | - | - |  | 0.05 | - | - | - | 0.03 | 0.03 | - |  | - | - |  | - |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.05 | - | 0.08 |  | 0.05 | 0.03 | 0.03 | - | 0.03 | 0.05 | - | - | 0.03 | - | - | - | 0.03 |
| 3383 | Mazzaella splendens |  | 1.00 | 0.53 | 1.05 | 1.00 | 2.05 | 1.05 | 0.08 | 0.03 | 2.53 | 10.00 | 5.50 | 4.00 | 2.53 | 2.05 | 2.53 | 1.53 | 1.00 |
| 1014 | Melobesia mediocris |  | - | 0.03 | 0.05 | - | - | - | - | - | - |  |  | - | - | - | - | - |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.10 | 4.50 | 3.50 | 0.53 | 3.05 | 0.58 | 0.10 | 0.10 | 2.03 | 19.00 | 0.10 | 1.03 | 2.03 | - | 0.08 | 1.05 | 2.03 |
| 0153 | Neoptiota spp. |  | - | - | - | - | - | - | - |  |  |  |  | - | - | 0.03 | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | . | - | 0.03 | 0.03 | 0.03 | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | 0.03 |
| 0096 | Opuntiella californica |  | 0.03 | - | - | - | - | - | - | - | - | - |  | - | 0.50 | ${ }^{-}$ | 0.50 | - |  |
| 0184 | Osmundea spp. |  | 0.53 | 0.55 | 0.55 | 0.58 | 0.55 | 1.50 | 1.05 | 3.00 | 5.50 | 7.00 | 5.50 | 12.50 | 11.50 | 2.50 | 2.53 | 2.05 | 3.00 |
| 0199 | Phaeophyta |  |  |  |  |  | - | - | - | - | - | - |  |  |  |  | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | 0.50 | 1.00 | 0.53 | 0.50 | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | 0.05 | 0.08 | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | 0.03 |
| 0117 | Plocamium paciifum |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | 㖪 | - |  |
| 0118 | Polyneura latissima |  | 0.05 | 0.03 | - | 0.03 | - | 0.50 | - | - | 0.03 | 0.55 | 0.03 | - | - | - | 0.03 | - |  |
| 0099 | Porphyra spp. |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | 0.05 | 0.03 | - | - | - | 0.03 | - | - | - | - | 0.03 | 0.03 | - | 0.50 |  |
| 0106 | Prionitis spp. |  | 0.55 | 3.03 | 1.03 | 1.53 | 2.53 | 2.03 | 5.53 | 1.58 | 0.58 | 0.53 | 3.03 | 4.00 | 9.00 | 4.03 | 4.50 | 4.50 | 8.50 |
| 0221 | Ptercladiella caloglossoides |  | . | . | . | - | . | - | - | - | . | - | 0.03 | . | - | - | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | . - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | - | - | - | - | - - | - | - | - | 0.03 | - |  |
| 0042 | Pterygophora californica |  | 1.05 | 2.55 | 0.08 | 0.58 | 2.05 | 1.53 | 0.58 | 1.08 | 0.08 | 1.55 | 0.10 | 3.03 | 0.10 | 0.58 | 0.10 | 0.08 | 1.08 |
| 0187 | Pugetia firma |  | - | - | 0.05 | - | - | - | 0.03 | - | 0.03 | - | 0.05 | - | - | - | - | 0.03 |  |
| 0219 | Rhodophyta (juv. blades) |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 1.08 | 0.10 | 2.03 | 0.58 | 0.03 | - | 0.05 | 0.03 | 0.50 | 0.05 | 0.05 | 0.55 | 0.58 | 0.53 | 0.55 | 0.55 | 1.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.10 | 1.03 | 1.53 | 0.05 | 0.03 | 0.50 | 0.10 | 1.05 | 3.00 | 4.00 | 0.08 | 0.58 | 1.05 | 0.55 | 0.55 | 1.08 | 2.03 |
| 1326 | Sargassum muticum |  | - | - |  |  | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | 0.05 | 0.03 | - | - | - | - | - | - | - | - | - |  |  |
| 0110 | Smithora naiadum |  | - | - | - | - |  |  | - | - | - | : | - | - | - | - | - |  |  |
| 0014 | Ulva spp. |  | 0.05 | 0.53 | 0.08 | 5.00 | 52.00 | 22.50 | 10.00 | 14.50 | 21.00 | 26.50 | 12.00 | 6.00 | 1.50 | - | 0.05 | 0.05 | 0.03 |
| 0057 | coralline crust |  | 30.00 | 27.50 | 32.00 | 32.50 | 49.50 | 53.00 | 39.00 | 40.00 | 43.50 | 53.00 | 45.50 | 46.50 | 50.00 | 21.00 | 9.00 | 22.00 | 19.50 |
| 1300 | filamentous red algae complex |  | 0.03 | 0.05 | 0.08 |  | 0.55 | 1.00 | 0.05 |  | 0.05 | 0.03 |  | - | - | - | - | 0.03 | 0.03 |
| 0059 | non-coralline crust |  | 0.58 | 4.03 | 0.58 | 2.03 | 5.00 | 6.00 | 4.53 | 4.00 | 3.50 | 2.50 | 3.53 | 7.50 | 3.50 | 1.05 | 0.08 | 1.05 | 0.55 |

## Subtidal Line Contact - Survey Algal and Substrate Abunc

## Sampling code: $6=$ Coverage Based on \# of Contact Point

|  |  |  | 58 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | ! | 14-Nov-86 | 30-Mar-87 | 1-May-87 | 16-Jul-87 | 28-Sep-87 | 20-Nov-87 | 28-Jan-88 | 28-Apr-88 | 20-Jul-88 | 7-Sep-88 | 17-Jan-89 | 20-Apr-89 | 31-Aug-89 | 27-Oct-89 | 23-Feb-90 | 3-May-90 | 24-Aug-90 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | 0.03 | - | - | 0.05 | 0.53 | - | 0.03 | 0.05 | 0.03 | 1.53 | - |  | - | - |  |
| 0981 | Ahnfeltiopsis linearis |  | 3.00 | 1.03 | 2.55 | 2.05 | 2.03 | 3.00 | 2.50 | 1.50 | 1.03 | 6.00 | 2.00 | - | 0.03 | 1.00 | - | 3.50 | 0.55 |
| 0047 | Amplisiphonia pacifica |  | - |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 1374 | Anisocladella paciica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.03 | 0.03 | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |  |
| 0050 | Botryocladia pseudodichotoma |  | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 11.00 | 10.00 | 12.50 | 19.50 | 17.00 | 12.50 | 7.50 | 12.50 | 20.00 | 10.00 | 7.03 | 21.50 | 23.00 | 22.50 | 8.50 | 20.00 | 22.00 |
| 0054 | Callithamnion pikeanum |  | - |  | - | - | - | - | - | - | - |  | - |  | - | - | - | - |  |
| 0185 | Callithamnion spp.IPleonosporium spp. |  | - |  |  |  | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0064 | Callophyllis flabelluata |  | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | - | 0.03 | 1.03 | 0.03 | 0.03 | - | 2.50 | - | 0.08 | 0.05 | 2.03 | 0.08 |
| 0112 | Callophyllis spp. |  | 0.03 | 0.03 | 0.03 | 0.55 | 0.08 | 0.03 | 0.03 | 1.53 | 0.53 | 0.55 | 0.58 | 5.00 | 0.08 | 0.05 | 0.08 | 0.05 | 0.08 |
| 0239 | Chlorophyta (filamentous) |  | - | - |  | - | - | - | - | - |  | - |  | - | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | 0.03 | - | - | - | 0.05 | - | 0.50 | 0.03 | - | - | - | 0.03 | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 1.00 | 5.00 | 12.00 | 28.50 | 16.50 | 12.50 | 6.50 | 20.00 | 28.50 | 18.00 | 10.50 | 22.50 | 10.50 | 4.50 | 6.00 | 20.00 | 21.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - |  | 6.50 | - | 0.50 | 1.03 | 0.50 | 13.00 | 3.50 | 6.03 | 2.05 | 1.55 | 1.00 | - | 2.50 | 8.00 | 5.50 |
| 0987 | Chondria decipiens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |  |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0055 | Corallina chilensis |  | 0.58 | 2.05 | 2.03 | 1.50 | 1.05 | 0.55 | 2.03 | - | 0.05 | 0.05 | 0.05 | - | 0.08 | 0.05 | 0.10 | 0.53 | 1.55 |
| 0052 | Cryptopleura ruprechtiana |  | 20.50 | 7.00 | 10.50 | 21.50 | 16.00 | 10.00 | 6.00 | 9.50 | 26.00 | 25.50 | 12.00 | 19.50 | 22.00 | 21.50 | 4.50 | 10.50 | 14.50 |
| 0115 | Cryptopleura violacea |  | 5.50 | 10.50 | 18.00 | 20.00 | 13.50 | 7.00 | 6.50 | 43.50 | 31.50 | 28.50 | 5.50 | 39.00 | 22.50 | 15.50 | 24.00 | 65.50 | 12.00 |
| 0036 | Cystoseira osmundacea |  | 0.03 | 0.03 | 0.03 | - | 0.03 | - | - | - |  |  | 0.03 | - | 0.03 | 0.03 | 0.08 | - | 0.03 |
| 0235 | Delesseriaceae (juv.) |  |  |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  |  | - | - | 0.53 | - | - | - | 0.50 | 1.03 | - | - | 0.03 | - | - | - | 1.00 | 0.53 |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 0.05 |
| 3326 | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  |  | - | - 5 | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - | $\cdot$ | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.10 | 1.55 | 0.53 | 1.55 | 1.55 | 1.55 | 0.58 | 3.00 | 1.05 | 1.05 | 1.55 | 4.00 | 2.53 | 2.53 | 0.08 | 2.03 | 0.53 |
| 0072 | Gastroclonium subarticulatum |  | 0.03 |  | - | 0.03 | 0.50 | - | - | - | - | - | 0.05 | 0.53 | 0.53 | 0.50 | 1.50 | 1.50 | 1.03 |
| 0075 | Gelidium robustum |  | 0.08 | 0.03 | 0.03 | 0.53 | 0.58 | 0.10 | 0.05 | 1.05 | 0.03 | 0.03 | 0.58 | 1.05 | 0.55 | 0.05 | 1.53 | 2.53 | 0.53 |
| 0206 | Gelidium spp. |  | 0.05 | 0.50 | 0.05 | - | - | 0.03 | 0.50 | - | 0.08 | 0.08 | 0.05 | - | - | - | 0.08 | - | 0.08 |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | 0.03 | $\checkmark$ | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | 0.53 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | 0.03 |  | 0.05 | - | - | - | - | - | - | - | - | - | - | 0.05 | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | 1.53 | 17.00 | - | - | 0.03 | - | 4.00 | 0.53 | 0.50 | - | 0.55 | 0.03 | - | 0.03 | 0.03 |  |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ |  |
| 0035 | Laminaria setchellii |  |  |  |  |  |  |  |  | - |  |  | - | 0.03 | - | - |  | 0.03 |  |


| Species Code (spcode) | Species | $\leqslant$ | 14-Nov-86 | 30-Mar-87 | 1-May-87 | 16-Jul-87 | 28-Sep-87 | 20-Nov-87 | 28-Jan-88 | 28-Apr-88 | 20-Jul-88 | 7-Sep-88 | 17-Jan-89 | 20-Apr-89 | 31-Aug-89 | 27-0ct-89 | 23-Feb-90 | 3-May-90 | 24-Aug-90 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | 0.08 | 0.05 | - | 0.03 |  | - | - | - | 0.03 | - | - | - |  |  | 0.03 | 0.03 |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0230 | Mazzaella rosea |  | 0.03 | 0.55 | 1.03 | 0.08 | 1.00 | 0.10 | - | 1.50 | 0.03 | 1.58 | 0.05 |  | - | - | - | - | - |
| 3383 | Mazzaella splendens |  | 0.58 | 1.03 | 8.00 | 18.00 | 7.00 | 4.00 | 1.50 | 2.53 | 7.50 | 7.00 | 0.58 | 4.03 | 8.00 | 1.00 | 0.03 | 5.53 | 2.00 |
| 1014 | Melobesia mediocris |  | - | - | - | - | - |  | - | - |  | - | - | - | - | - | - | - |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 2.05 | 0.10 | 9.00 | 8.50 | 1.53 | 0.10 | 0.10 | 19.50 | 5.50 | 0.05 | 0.08 | 14.50 | 0.10 | 0.10 | 0.10 | 0.53 | 0.03 |
| 0153 | Neootilota spp. |  | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $0 \cdot$ | - | - |
| 1154 | Nienburgia andersoniana |  | 0.03 | - | - | . | - | - | - | - | - | - | - | - | - | - | 0.03 | 0.03 | - |
| 0096 | Opuntiella californica |  |  | - | 0.03 | - | - | - | - |  | - | - |  | $\cdots$ | - | - | - | - | - |
| 0184 | Osmundea spp. |  | 2.03 | 3.53 | 0.58 | 4.03 | 5.50 | 2.50 | 3.00 | 7.50 | 3.50 | 8.00 | 12.50 | 20.00 | 18.00 | 13.50 | 8.50 | 8.50 | 2.03 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0135 | Phyllospadix spp. |  | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0203 | Pikea robusta |  | - | - | 0.10 | - | - | 0.03 |  | . | - | 0.03 | - | - | - | - | - | - | 0.03 |
| 0117 | Plocamium paciificum |  | - | 0.03 . | - | - | - | - | 0.03 | - | $\bigcirc$ | - | - | - | - | - | 0.03 | - |  |
| 0118 | Polyneura latissima |  | - | - | 0.05 | 0.03 | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | 0.53 | - | - | 0.03 | - | - | - | 3.50 | - | - | - | .- | - | - | 0.08 |
| 0106 | Prionitis spp. |  | 9.00 | 3.00 | 2.55 | 4.00 | 10.50 | 9.50 | 16.00 | 20.50 | 10.00 | 15.00 | 21.00 | 16.00 | 13.50 | 18.50 | 22.00 | 20.50 | 24.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | . |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | $0 \cdot$ | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | 0.03 | - |  |
| 0042 | Pterygophora californica |  | 0.58 | 0.03 | - | - | 0.03 | 0.05 | 0.05 | - | - |  | - | - | - | - | - | - |  |
| 0187 | Pugetia firma |  | . 5 | , | - | - | - | 0.50 | 0.03 | - | 0.03 | 0.03 | - | - | - | - | 0.03 | - | 0.03 |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | . - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | O | - |  | , | - | 05 | $\bigcirc$ | - | $\bigcirc$ | - | , |  |
| 0159 | Rhodymenia spp. |  | 0.55 | 1.05 | 1.05 | 1.53 | 1.53 | 1.00 | 0.50 | 2.50 | 1.05 | 3.50 | 1.05 | 4.00 | 4.00 | 1.03 | 4.00 | 10.00 | 3.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | 1.55 | 7.00 | 8.00 | 5.00 | 1.00 | 0.10 | 0.53 | 12.00 | 3.53 | 1.00 | 0.58 | 4.50 | 0.55 | 0.03 | 1.03 | 4.00 | 0.53 |
| 1326 | Sargassum muticum |  | - | - | - |  | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0110 | Smithora naiadum |  | - | - | - |  | . | - |  | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.05 | 0.05 | 0.05 | 0.05 | - | 0.05 | 0.03 | - | 0.08 | 1.05 | 0.03 | 0.10 | 0.03 | 0.03 | 0.08 | 0.03 | 0.08 |
| 0057 | coralline crust |  | 27.50 | 53.00 | 42.00 | 68.50 | 54.00 | 50.00 | 34.50 | 39.50 | 56.50 | 49.00 | 49.00 | 32.00 | 66.50 | 52.50 | 46.50 | 33.00 | 34.00 |
| 1300 | filamentous red algae complex |  | 0.50 | 0.08 | 0.03 | 0.03 | 0.53 | 0.03 |  |  | 0.50 | - |  | - |  | - | - | - |  |
| 0059 | non-coralline crust |  | 1.03 | 9.00 | 4.50 | 5.00 | 10.50 | 8.00 | 6.00 | 10.00 | 8.50 | 9.50 | 8.50 | 9.50 | 4.50 | 7.00 | 5.50 | 10.50 | 9.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Point



| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | ؛ | 6-Nov-90 | 8-Feb-91 | 8-May-91 | 3-Sep-91 | 1-Nov-91 | 19-Mar-92 | 22-Jun-92 | 8-Sep-92 | 13-Nov-92 | 23-Mar-93 | 26-May-93 | 24-Aug-93 | 21-0ct-93 | 28-Mar-94 | 18-May-94 | 3-Aug-94 | 24-Oct-94 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | - | - | 0.03 |  |  | 0.03 |  |  | - | - | - | 0.03 | - | - |  |  |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | 1.05 | 2.05 | 3.05 | 1.08 | 1.05 | 2.53 | 12.50 | 4.03 | 1.55 | 13.50 | 9.50 | 6.50 |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - | - |
| 0230 | Mazzzeila rosea |  | 0.03 | 0.03 | 0.05 | - |  | - | 0.03 | - | - | 0.03 | 0.03 | - | - | 0.05 | 0.55 | - | - |
| 3383 | Mazzaella splendens |  | 2.00 | 0.50 | 2.50 | 0.55 | 1.05 | - | 0.03 | - | - | .- | - | - | - | - | 0.50 | - | - |
| 1014 | Melobesia mediocris |  | - | - |  |  |  | - | - | - | - | - | - | - | - | - | - | - | - |
| 0094 | Microcladia borealis |  | - | - |  |  |  | - | - | - | - | - | - |  | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | 0.08 | 0.10 | 3.50 | 0.58 | 0.58 | 0.10 | 0.05 | 0.10 | - | - | - | 0.05 | 0.03 | - | - | - | 0.03 |
| 0153 | Neoptilota spp. |  | - | - | - | - |  | - | - | - | - | - | - |  | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - |  | - | - | - | - | - | - | - | $\stackrel{-}{-}$ |  | - | - | - |
| 1154 | Nienburgia andersoniana |  | - | 0.03 | - | 3.50 | 3.00 | 2.53 | 0.10 | 7.50 | 0.55 | 11.00 | 3.00 | 5.50 | 5.50 | 0.08 | 1.53 | - | 1.55 |
| 0096 | Opuntiella californica |  | - | - | - | - | - |  | - |  |  | - | - | - | - |  | - |  |  |
| 0184 | Osmundea spp. |  | 7.50 | 3.03 | 2.50 | 3.53 | 10.50 | 7.50 | 1.55 | 0.53 | 0.10 | 0.53 | 0.03 | 0.03 | 0.53 | - | - | - | 0.03 |
| 0199 | Phaeophyta |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  | - |  |
| 0220 | Prionitis australis |  | - | 1.00 | 0.03 | 0.50 | 2.00 | 0.53 | - | 2.53 | 0.55 | 0.03 | 1.03 | - | 0.53 | - | 0.50 |  | 1.03 |
| 0106 | Prionitis spp. |  | 17.50 | 21.00 | 17.00 | 21.00 | 21.00 | 12.50 | 5.00 | 16.00 | 14.50 | 10.00 | 6.50 | 8.50 | 12.50 | 14.00 | 24.00 | 14.00 | 17.00 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | 0.03 | 0.03 | - | - | 0.05 | - | - | 0.08 | - | 0.08 | 0.03 | - | 0.08 |
| 0042 | Pterygophora californica |  | - | - | 0.03 | 0.03 | - | - | - | 0.03 | - | - | 0.03 | 0.05 | - | - | - | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | $\because$ | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 9.50 | 3.50 | 5.00 | 4.03 | 7.50 | 5.00 | 3.03 | 6.50 | 6.50 | 4.50 | 9.00 | 12.00 | 3.50 | 10.00 | 11.00 | 8.00 | 5.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 2.05 | 1.05 | 1.55 | - | 0.03 | 0.03 | - | 0.03 | 0.05 | - | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - |  |  | - |  | , | - | - | - | - | - | - | - | $0 \cdot$ | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | . | - | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - |  |
| 0110 | Smithora naiadum |  | - | - |  | - | $\bigcirc$ |  | , | $\bigcirc$ | - | - | - | - | - |  | 0 | - |  |
| 0014 | Ulva spp. |  | 0.10 | 0.08 | 0.08 | 0.03 | 0.03 | 0.08 | 0.03 | 0.08 | 0.03 | 0.10 | 0.08 | 0.10 | - | 0.08 | 0.10 | - |  |
| 0057 | coralline crust |  | 49.00 | 47.00 | 41.00 | 44.00 | 52.50 | 55.00 | 49.50 | 45.00 | 41.50 | 34.50 | 40.50 | 38.50 | 36.00 | 26.00 | 41.00 | 27.50 | 39.00 |
| 1300 | filamentous red algae complex |  |  |  | 0.05 |  |  | 0.53 |  | 0.03 |  | - | 1.53 | 0.03 |  | 2.55 | 0.08 | - | 1.03 |
| 0059 | non-coralline crust |  | 9.00 | 6.50 | 4.50 | 0.55 | 8.50 | 7.50 | 2.50 | 4.50 | 8.50 | 1.53 | 2.03 | 2.05 | 1.03 | 1.53 | 4.00 | 0.50 | 7.50 |

## Subtidal Line Contact - Survey Algal and Substrate Abundi

## Sampling code: $6=$ Coverage Based on \# of Contact Point:



| Species Code （spcode） | Species | ！ | 23－Feb－95 | 5－Jul－95 | 27－Mar－96 | 7－Nov－96 | 14－May－97 | 14－Oct－97 | 5－May－98 | 2－Oct－98 | 12－Mar－99 | 27－May－99 | 24－Aug－99 | 14－Oct－99 | 13－Apr－00 | 5－Jul－00 | 8－Sep－00 | 3－Nov－00 | 22－Mar－01 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | － | 0.03 | － |  | 0.03 | － |  | － |  |  |  | － | 0.03 | － |  | － |  |
| 1640 | Macrocystis pyrifera |  | 4.03 | 6.03 | 2.08 | 7.50 | 4.53 | 1.53 | 0.58 | 17.00 | 4.50 | 1.50 | 3.53 | 7.50 | 0.08 | 0.10 | 0.03 | 3.03 | 0.03 |
| 0082 | Mastocarpus papillatus |  | － | 析 | － | － | － | － | － | ． | － | － | － | － | － | － | － | － |  |
| 0230 | Mazzaella rosea |  | － | 0.05 | 0.05 | － | － | － | － | － | － | － | － | 0.03 | 0.53 | － | － | － |  |
| 3383 | Mazzaella splendens |  | － | － | － | － | － | － | － | － | － | ． | － | － | － | 0.50 | － | － |  |
| 1014 | Melobesia mediocris |  | － | － | ． | － | － | － | － | － | － | － | － | － |  | － | － | － | － |
| 0094 | Microcladia borealis |  | － | － | － | － | － | － | － | － | － | ． | － | － | － | － | － | － | － |
| 0095 | Microcladia coulteri |  | － | 0.03 | － | － | － | － | － | － | － | － | － | － | － | － | － | － | － |
| 0153 | Neoptilota spp． |  | － | － | － | － | － | ． | － | － | － | － | － | － | － | － | － | － | － |
| 0041 | Nereocystis luetkeana |  | － | － |  | － |  | － | － | 㖪 | － | － | － | － | － | －－ | － | － | － |
| 1154 | Nienburgia andersoniana |  | 0.03 | 5.50 | 8.50 | 10.50 | 5.00 | 18.00 | － | 0.03 | － | ． | － | － |  | 3.00 | 4.50 | 2.50 | 0.03 |
| 0096 | Opuntiella californica |  |  | － |  | － | － | － | － | ， | － | － | － | － | － |  | － | － |  |
| 0184 | Osmundea spp． |  | － | 0.05 | 0.05 | － | 0.53 | 0.03 | － | ． | － | － | － | － | － | － | 0.03 | － | － |
| 0199 | Phaeophyta |  | － | － |  | － |  | － | － | － | ． | － | － | － | ． | － | － | － | － |
| 0247 | Phaeostrophion irregulare |  | － | ． | ． | － | － | ． | － | ． | － | － | － | － | － | － | － | － | － |
| 1144 | Phycodrys spp． |  | － | － | ． | － | 0.03 | ． | － | － | － | － | － | － | － | － | － | － | ． |
| 0135 | Phyllospadix spp． |  | － | － | － | － | － | － | － | ． | － | － | － | － | ． | － | － | － |  |
| 0203 | Pikea robusta |  | － | － | － | － | － | － | － | ． | － | － | － | － | － | － | － | － |  |
| 0117 | Plocamium pacificum |  | － | － | － | － | － | － | － | － | － | ， | － | － | － | － | － | － | － |
| 0118 | Polyneura latissima |  | － | － | － | － | － | － | － | － | － | 0.03 | － | － | 1.00 | － | 0.50 | － |  |
| 0099 | Porphyra spp． |  | $\bigcirc$ | － | － | － | － | ， | － | 相 | － | － | － | － | － | － | － | － | － |
| 0220 | Prionitis australis |  | 1.00 | － | － | － | － | 0.53 | － | 1.00 | 0.03 | 0.03 | 5.50 | 1.50 | － | 0.53 | － | － |  |
| 0106 | Prionitis spp． |  | 10.00 | 15.50 | 12.50 | 10.50 | 1.53 | 8.00 | 8.50 | 10.50 | 11.50 | 12.00 | 9.50 | 12.50 | 17.50 | 12.00 | 12.00 | 10.50 | 5.50 |
| 0221 | Ptercladiella caloglossoides |  | － | － | － | － | － | － | － |  | － | － | － |  | － | － |  |  |  |
| 1115 | Pterochondria woodii var．woodii |  | － | － |  | － | － | － | － | － | － | 析 | － | － | － | － | － | － | － |
| 0192 | Pterosiphonia dendroidea |  | 0.53 | 0.05 | 3.53 | 1.00 | 0.55 | 3.53 | － | － | 8.00 | 0.03 | 0.53 | － | － | 3.50 | － | 2.00 | 11.50 |
| 0042 | Pterygophora californica |  | － | 0.03 | － | 0.03 | － | 0.03 | － | － | － | － | － | － | － | － | 0.03 | 0.03 | － |
| 0187 | Pugetia firma |  | － | ． | － | － | － | － | － | － | － | － | － | － | － | － | － | ． | － |
| 0219 | Rhodophyta（juv．blades） |  | － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | － | － |
| 0122 | Rhodoptilum plumosum |  | － | － | － | － | － |  | － | － | － | － | － |  | － | － | － | － | － |
| 0159 | Rhodymenia spp． |  | 3.00 | 17.50 | 5.50 | 1.50 | 5.00 | 2.50 | 7.50 | 4.50 | 2.00 | 12.50 | 13.00 | 9.50 | 9.00 | 9.50 | 7.50 | 4.50 | 7.53 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.50 |  | 0.03 | － | 0.03 |  | － | － | － |  | － | － | 0.03 | － | 0.03 | － |  |
| 1326 | Sargassum muticum |  |  | － |  | ． | － | － | － | － | － | － | － | 0.08 | 0.08 | 0.03 | － | － | 0.53 |
| 0155 | Scinaia confusa |  |  | － | 0.03 | － | － | － | － | － | － | 0.08 | － | － | － | － | － | － | － |
| 0110 | Smithora naiadum |  | － | － |  | － | － | － | － | － | － | － | － | － | － | － | － | － | － |
| 0014 | Ulva spp． |  | 0.03 | 0.05 | 0.10 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | － | 0.05 | － | － | 0.03 | － | － | 0.03 |
| 0057 | coralline crust |  | 28.50 | 32.00 | 26.00 | 41.50 | 34.50 | 38.00 | 37.00 | 26.00 | 31.50 | 17.50 | 19.50 | 16.00 | 4.00 | 22.50 | 44.00 | 30.00 | 16.50 |
| 1300 | filamentous red algae complex |  | 2.50 | 5.00 |  |  |  |  | 1.03 |  | \％ | 1.03 |  | ， | 0.03 | 0.05 | 0.08 | － | － |
| 0059 | non－coralline crust |  | 0.05 | 1.03 | 0.58 | 2.53 | 0.58 | 2.03 | 0.03 | 0.03 | 0.58 | － | 0.08 | 0.10 | 0.10 | 0.03 | 0.50 | 2.03 | 0.53 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Point:

|  |  | 113 | 114 | 115 | 116 | 117 | 118 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species | ! | 30-May-01 | 15-Aug-01 | 31-Dec-01 | 27-Mar-02 | 8-May-02 | 13-Aug-02 | .26-Nov-02 | 26-Mar-03 | 7-May-03 | 4-Sep-03 | 13-Nov-03 | 11-Feb-04 | 27-May-04 | 3-Sep-04 | 13-Oct-04 | 17-Mar-05 | Ma |

Code
(spcode)
Species

| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. | ${ }^{-}$ | - | 5 | ${ }^{-}$ | - | - | - | - | 0.05 | - | - | - | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum | 14.50 | 4.03 | 5.50 | 23.50 | 6.00 | 2.50 | 0.05 | 7.00 | 4.00 | - | 1.55 | 4.00 | 1.53 | 4.00 | 0.05 | 1.08 | 3.53 |
| 0126 | Ahnfeltiopsis leptophylla | 0.03 | - |  | - | - | - | - | 0.03 | 0.05 | 0.03 | - | - | - |  | - | - | - |
| 0981 | Ahnfeltiopsis linearis | 0.03 | 0.08 | 0.50 | 0.03 | 0.50 | 0.50 | - | 0.03 | 0.03 | 0.50 | 3.05 | 0.03 | 0.50 | 3.50 | 1.05 | 1.03 | 10.00 |
| 0047 | Amplisiphonia pacifica | - | - | - | - | - | - | . | - | - | - |  | . | , | - | , | . |  |
| 1374 | Anisocladella paciifa | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - |
| 1303 | Antithamnion/Pterothamnion spp.-complex | - | - | - | 0.10 | - | - | - | - | - | - | - | - | - | 0.10 | 0.03 | - | 0.05 |
| 0050 | Botryocladia pseudodichotoma | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0245 | Bryopsis spp. | - | - | - | - | - |  | - | - | - | - | - | 0:05 | - | - | - | - | - |
| 0049 | Calliarthron/Bossiella spp.complex | 12.00 | 15.00 | 6.00 | 8.50 | 6.00 | 2.00 | 4.50 | 2.05 | 0.03 | 4.00 | 13.50 | 3.00 | 7.50 | 12.50 | 16.50 | 6.00 | 16.50 |
| 0054 | Callithamnion pikeanum | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0185 | Callithamnion spp.Pleonosporium spp. | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0064 | Callophyllis flabeluluata | - | 0.53 | 0.08 | - | - | 0.03 ' | - | 0.05 | - | - | 0.03 | 0.05 | . | 0.05 | 0.08 | - | - |
| 0112 | Callophyllis spp. | 0.03 | 1.50 | - | - | 0.03 | 0.03 | - | 0.05 | 0.05 | - |  | - | - | - | , | - | - |
| 0239 | Chlorophyta (filamentous) | - | - | - | - | - | - | - |  | - | - | - | - | . | - | - | 0.03 | 0.05 |
| 0077 | Chondracanthus canaliculatus | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | , |  |
| 0125 | Chondracanthus corymbiferus | 3.03 | 5.00 | 4.50 | 1.50 | 3.50 | 4.50 | 1.03 | 5.50 | 5.00 | 2.50 | 5.00 | 3.00 | 2.53 | 7.00 | 2.03 | - | 0.10 |
| 1305 | Chondracanthus harveyanus/spinosus | 4.50 | - | - | 2.00 | - | - |  |  | , | 1.50 | 1.50 | , | 1.05 | 1.05 | 0.50 | - |  |
| 0987 | Chondria decipiens | - | . | - | - | - | - | - | - | - | - | , | - | - |  | , | - |  |
| 1302 | Chrysophyta | - | - | - | 4.03 | - | 1.50 | - | 3.50 | - | 1.50 | - | - | 8.50 | 0.50 | - | - | 4.50 |
| 0010 | Cladophora spp. | - | - | - |  | - |  | - | - | - |  | - | - | , | , | - | - |  |
| 0025 | Coilodesme californica | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0146 | Colpomenia spp. | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | 0.10 |
| 0055 | Corallina chilensis | 0.03 | - | - | 0.03 | 0.03 | - | - | - | 1.50 | . | 1.08 | - | 0.05 | 0.10 | 0.10 | 1.05 | 2.53 |
| 0052 | Cryptopleura ruprechtiana | - | 0.50 | - | - |  | 0.05 | - | - | - | . - | - | - | - |  |  | 1.05 |  |
| 0115 | Cryptopleura violacea | 21.50 | 9.00 | 10.50 | 58.50 | 62.00 | 16.50 | 3.50 | 25.00 | 26.50 | 19.50 | 23.00 | 14.00 | 27.00 | 24.00 | 21.00 | - | . |
| 0036 | Cystoseira osmundacea | 5.03 | 12.50 | 4.50 | 6.53 | 5.00 | 7.00 | 5.50 | 9.50 | 6.50 | 9.00 | 5.50 | 3.50 | 5.00 | 6.50 | 4.00 | 6.50 | 12.00 |
| 0235 | Delesseriaceae (juv.) |  |  | - |  |  |  | - | - | - | - | - | - | - |  | - | - |  |
| 1830 | Desmarestia ligulata | - | 0.53 | - | 0.08 | 0.53 | 0.03 | - | 1.50 | 6.00 | - | 1.00 | - | - | - | - | - | - |
| 0030 | Dictyoneurum californicum |  |  |  |  |  |  | - |  |  | - |  | - | - | - | - | - |  |
| $0190$ | Dictyota binghamiae |  |  | - |  | - | - | - | - | - | - | - | - | - | - | . | - | - |
| 0238 | Ectocarpales | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |
| 3326 | Endarachne/Petalonia-complex | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0071 | Erythrophyllum delesserioides | - | $\cdot$ | - | - | - | - | - | - | 0.50 | - |  | - | - | - | - | . | - |
| 1304 | Farlowia/Pikea spp.-complex | 0.50 | 4.00 | 4.50 | 7.50 | 4.00 | 5.03 | 2.53 | 3.50 | 5.00 | 0.50 | 6.00 | 3.00 | 3.50 | 11.00 | 11.50 | - | - |
| 0072 | Gastroclonium subarticulatum | - | - | - | - |  | - | - | - | - |  | - | - | - | - | , | - | - |
| 0075 | Gelidium robustum | - | 0.50 | 2.50 | 0.03 | - | 0.05 | 2.00 | 2.00 | 3.03 | 0.03 | 2.00 | 4.00 | 1.03 | 0.50 | 0.50 | 0.50 | 1.53 |
| 0206 | Gelidium spp. | 0.03 | 0.03 | - | 0.03 | - | - | , | . | 3.03 | 0. | 0.05 | 4.00 | . 0 | 0.05 | 0.05 | 0.10 | 0.03 |
| 1224 | Gloiosiphonia californica | - | - | - | - | - | - | - | - | - | - |  | . | - | - | , | . |  |
| 0083 | Gracilariopsis andersonii | - | - | - | - | - | - | - | 2.00 | 1.03 | - | - | - | - | - | - | - | . |
| 0109 | Grateloupia californica | - | - | - | - | - | - | - | . | . | - | - | - | - | - | - | - | - |
| 0149 | Halicystis ovalis (=Derbesia marina) | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - |
| 0152 | Halymenia/Schizymenia spp.complex | - | - | - | - | - | - | - | 0.03 | 0.08 | - | 0.03 | - | - | - | - | - | . |
| 0983 | Haplogloia andersonii | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| $\begin{aligned} & 0212 \\ & 0035 \end{aligned}$ | Hymenena spp. <br> Laminaria setchellii | 0.03 | - | - | 0.03 | - | - | - | - | $-$ | $-$ | - | - | - | $-$ | - | - | - |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | ¢ | 30-May-01 | 15-Aug-01 | 31-Dec-01 | 27-Mar-02 | 8-May-02 | 13-Aug-02 | 26-Nov-02 | 26-Mar-03 | 7-May-03 | 4-Sep-03 | 13-Nov-03 | 11-Feb-04 | 27-May-04 | 3-Sep-04 | 13-0ct-04 | 17-Mar-05 | 27-May-05 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | - | - | 0.05 |  |  |  | 0.03 | - | - | - | - | 0.08 | - |  |  |  |  |
| 1640 | Macrocystis pyrifera |  | 1.08 | 0.58 | 0.05 | 2.55 | 0.58 | 2.05 | 0.53 | - | 3.03 | 4.53 | 6.00 | 2.00 | 4.50 | 4.03 | 4.50 | 0.53 | 1.05 |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - | - | - | - | - | - | -- |  | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | - | - | - | 0.03 | 0.53 | 0.08 | 0.05 | - | - | 0.03 | 0.05 | - | - | - | - | 0.05 |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | $\stackrel{-}{-}$ | - | - | - | $0 \cdot$ | - | $\stackrel{-}{-}$ | ${ }_{7}{ }^{-}$ | - |  |
| 1154 | Nienburgia andersoniana |  | 1.50 | 1.50 | 2.03 | 9.00 | 6.50 | 11.50 | 3.50 | 0.50 | 1.53 | - | 4.50 | 9.00 | 14.50 | 6.50 | 7.50 | - |  |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | 0.03 | 0.05 | 0.03 | - | 0.53 | 1.00 | - | 0.53 | 1.00 | 0.03 | 0.58 | 0.05 | 0.08 | 0.08 | - |  |
| 0199 | Phaeophyta |  | - | . - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium paciicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | . - | - | - | - |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | 0.05 | 5.50 | - | - | 0.50 | 1.50 | 1.50 | - | - | - | 4.00 | - | 0.05 | 0.03 | - |  |
| 0106 | Prionitis spp. |  | 9.50 | 7.00 | 1.03 | 9.50 | 2.50 | 1.00 | 8.50 | 1.50 | 1.50 | 2.00 | 9.50 | 0.03 | 6.00 | 16.50 | 18.00 | 9.50 | 11.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - |  | - | - | - | - | - | - | - | - |  | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - |  |  | - | - | - | - | - | - |  | - |  |
| 0192 | Pterosiphonia dendroidea |  | 5.00 | 0.10 | 4.50 | 0.05 | 5.50 | 1.05 | - | 1.05 | 0.10 | 0.50 | 1.05 | 4.50 | - | 0.05 | 0.03 | - |  |
| 0042 | Pterygophora californica |  | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | 0.03 | - |  |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0159 | Rhodymenia spp. |  | 11.50 | 9.00 | 9:50 | 1.00 | 6.00 | 6.50 | 4.50 | 4.00 | 2.53 | 7.50 | 2.50 | 3.50 | 8.53 | 1.55 | 5.00 | 1.55 | 4.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.03 | - | - | 1.53 | - | - | 0.03 | - | - | 0.50 | 0.03 | - | 0.05 | - | - |  |  |
| 1326 | Sargassum muticum |  |  | - | 0.05 | 1.53 | 0.58 | - | - | 0.05 | 0.05 | - | - | 0.08 | 3.00 | - | 0.03 | 1.03 | 0.05 |
| 0155 | Scinaia confusa |  | 0.03 | 0.05 | 0.10 | - | - | - | - | - | 0.53 | - | - | 0.03 | - | - | - | - |  |
| 0110 | Smithora naiadum |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | 0.03 | 0.10 |  | 0.03 |  | - | - | 0.10 | 0.10 | - | 0.05 | 0.10 | 0.05 | 0.10 | 0.03 | - | 0.53 |
| 0057 | coralline crust |  | 15.50 | 70.00 | 70.50 | 32.50 | 28.50 | 68.00 | 43.50 | 71.50 | 76.00 | 26.00 | 48.00 | 65.00 | 13.00 | 24.50 | 21.50 | 38.50 | 20.50 |
| 1300 | filamentous red algae complex |  |  | - | 0.08 | 3.00 |  | 0.10 | - | 0.08 | 0.10 | - | 0.53 | 0.05 | - | 3.00 | 0.50 | - | 14.50 |
| 0059 | non-coraline crust |  | 0.05 | - | 1.50 | 0.58 | 0.03 | - | 0.50 | - | 0.03 | 0.10 | 2.00 | 0.50 | - | 0.08 | 0.03 | 0.10 | 0.03 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Point



| Species Code (spcode) | Species | s | 2-Aug-05 | 1-Nov-05 | 21-Feb-06 | 12-May-06 | 16-Aug-06 | 1-Nov-06 | 7-Feb-07 | 9-May-07 | 24-Jul-07 | 24-Oct-07 | 11-Mar-08 | 15-May-08 | 8-Aug-08 | 7-Nov-08 | 29-Jan-09 | 3-Jun-09 | 20-Aug-09 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  |  |  | 0.03 | - | 0.03 | - |  | 0.03 |  |  |  | 0.03 | 0.03 | - |  | - |  |
| 1640 | Macrocystis pyrifera |  | 3.03 | 2.53 | 2.53 | 9.03 | 7.00 | 2.05 | 1.05 | 2.53 | 6.00 | 5.00 | 2.00 | 1.05 | 3.53 | 5.50 | 7.00 | 3.53 | 4.55 |
| 0082 | Mastocarpus papillatus |  | - | - |  | - |  |  |  |  |  |  |  |  | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - |  | - |  |  |  | - | - | - | - | - | - | 0.03 |  |  |  |
| 3383 | Mazzaella splendens |  | - | - | - | - |  | - | - | - | - | - | - | - | - |  |  | - |  |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - | - | 0.50 | 0.05 |  | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  | - |  |
| 0041 | Nereocystis luetkeana |  | - | - |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 1154 | Nienburgia andersoniana |  | - | 0.03 | 0.05 | 1.55 | - | - | - | 1.03 | - | 1.53 | 1.55 | 1.03 |  | 1.00 | 4.00 | 0.03 | 0.05 |
| 0096 | Opuntiella californica |  | - | - |  |  | - | - | - | - | - | - | - | - |  |  |  |  |  |
| 0184 | Osmundea spp. |  | - | - | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - | - |  |  |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima |  | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - |
| 0220 | Prionitis australis |  | - | - | 0.50 | - | - | 2.00 | - |  | - | 0.03 | 0.03 | - | 1.50 | - | - | - | - |
| 0106 | Prionitis spp. |  | 6.00 | 4.50 | 8.00 | 11.50 | 13.50 | 12.50 | 13.50 | 11.00 | 13.50 | 11.00 | 15.00 | 11.50 | 19.00 | 20.50 | 20.50 | 15.00 | 20.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - |  | - |  |  |  |  |  | - |  | - |  | - | - |  |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - |  |  |  | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea |  | - | 0.03 | 1.00 | = | - | - | - | 0.50 | - | 1.00 | 0.05 | - | - | - | - | - | 1.50 |
| 0042 | Pterygophora californica |  | - | - | - | 0.03 | 0.03 | - | - | - | - |  |  | 0.05 | 0.08 | 0.03 | 0.05 | 0.05 | 0.05 |
| 0187 | Pugetia firma |  | - | - | - |  | - | - | - | - | - |  | - |  |  |  |  | - | - |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - |  | - | - | - |  |  | - | - |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - |  | - | - | - |  | - | - | - |
| 0159 | Rhodymenia spp. |  | 20.50 | 4.00 | 6.00 | 17.00 | 5.03 | 10.50 | 17.50 | 16.50 | 10.50 | 13.50 | 11.00 | 10.00 | 8.50 | 6.50 | 7.00 | 8.50 | 24.00 |
| 0104 | Sarcodiotheca gaudichaudii |  |  |  |  |  | - | - | - | - | - | - | 0.03 | 0.03 |  |  | - |  | 0.05 |
| 1326 | Sargassum muticum |  | 0.53 | 0.03 | 0.05 | 0.08 | - | - | 0.05 | 0.03 | - | - | 0.03 | 0.05 |  |  | 0.03 | 0.05 |  |
| 0155 | Scinaia confusa |  |  |  |  | 0.03 | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0110 | Smithora naiadum |  | - | - |  |  | - | - | - | - | - | - | - |  |  |  |  |  |  |
| 0014 | Ulva spp. |  | 0.03 |  |  | - | 0.03 | - | 0.05 | 0.10 | - | - | - | - | - | - | - | - | 0.05 |
| 0057 | coralline crust |  | 19.50 | 46.00 | 28.50 | 6.00 | 30.50 | 22.00 | 19.00 | 13.50 | 32.00 | 36.50 | 15.00 | 28.50 | 39.00 | 28.50 | 9.50 | 33.00 | 19.00 |
| 1300 | filamentous red algae complex |  | - | 0.50 | 7.53 | - | 0.05 | 5.53 | 11.50 | 3.05 | - | 4.00 | 5.50 | 9.00 | 0.03 | 1.53 | 0.50 | 0.03 | 3.50 |
| 0059 | non-coralline crust |  | 0.03 | 1.05 | 0.55 | 0.03 | 0.03 | 0.03 | 0.50 | 0.03 | - | 1.03 | - | - | 0.05 | 0.05 | 0.03 | 0.53 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abund

Sampling code: 6 = Coverage Based on \# of Contact Point

| Species Code (spcode) | Species | ! | $\begin{array}{r} 147 \\ \text { 12-Oct-09 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 19-Feb-10 } \end{array}$ | $\begin{array}{r} 149 \\ 26-\text { May-10 } \end{array}$ | $\begin{array}{r} 150 \\ \text { 18-Aug-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 18-Oct-10 } \end{array}$ | $\begin{array}{r} 152 \\ 9-\mathrm{Feb}-11 \end{array}$ | $\begin{array}{r} 153 \\ \text { 3-May-11 } \end{array}$ | $\begin{array}{r} 154 \\ \text { 15-Aug-11 } \end{array}$ | $\begin{array}{r} 155 \\ 28-O c t-11 \end{array}$ | $\begin{array}{r} 156 \\ \text { 13-Jan-12 } \end{array}$ | $\begin{array}{r} 157 \\ \text { 3-May-12 } \end{array}$ | $\begin{array}{r} 158 \\ \text { 17-Aug-12 } \end{array}$ | $\begin{array}{r} 159 \\ \text { 26-Nov-12 } \end{array}$ | $\begin{array}{r} 160 \\ \text { 31-Jan-13 } \end{array}$ | $\begin{array}{r} 161 \\ \text { 19-Apr-13 } \end{array}$ | $\begin{array}{r} 162 \\ \text { 18-Jul-13 } \end{array}$ | $\begin{array}{r} 163 \\ \text { 17-Oct-13 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  |  |  |  | - |  |  | - |  |  | - |  | - |  | - |  |  |
| 1549 | Acrosorium ciliolatum |  | 7.50 | 7.00 | 20.00 | 1.05 | - | 6.50 | 11.00 | - | 0.50 | 7.00 | 1.53 | 2.53 | 2.50 | 7.00 | 2.50 | 1.50 |  |
| 0126 | Ahnfeltiopsis leptophylla |  |  |  |  |  | - |  |  | 0.50 |  | - | . | - | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 6.50 | 0.55 | 4.03 | 2.55 | 0.50 | 2.53 | 3.50 | 2.00 | 0.55 | - | 1.00 | 3.53 | 1.03 | - | 2.00 | 2.50 | 5.00 |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1374 | Anisocladella pacifica |  |  | - | - |  | - | - |  | - | - | - | - | - | - | - | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.08 | - | 0.10 | - | - | 0.10 | 0.03 | - | - | 0.08 | - | - | 0.08 | - | - | - |  |
| 0050 | Bötryocladia pseudodichotoma |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 14.50 | 9.00 | 12.00 | 21.00 | 9.50 | 9.00 | 13.00 | 5.00 | 8.00 | 14.00 | 9.03 | 16.50 | 12.50 | 15.00 | 9.50 | 9.00 | 30.50 |
| 0054 | Callithamnion pikeanum |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0185 | Callithamnion spp.Pleonosporium spp. |  | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0064 | Callophyllis flabelluata |  | - | - | 0.05 | 0.03 | - | - | 0.05 | 0.03 | 0.10 | 0.03 | 0.55 | - | - | - | 0.08 | - | 0.05 |
| 0112 | Callophyllis spp. |  | - | - | - | - | - | - | - | - | - | , | - | - | - | - | - | 2.03 |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 5.00 | - | 0.03 | 0.03 | 0.05 | - | 0.03 | 0.55 | 0.05 | - | 0.03 | 0.58 | 0.05 | - | 1.53 | 5.00 | 7.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | 0.03 | - | 0.55 | 0.50 | 0.03 | - | 0.53 | - | 0.53 | - | - | 0.53 | - | - | 0.53 | - | 0.03 |
| 0987 | Chondria decipiens |  |  | - |  | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | 7.50 | - | 5.50 | - | - | - | 2.53 | - | - | - | - | - | - | - | - | - |  |
| 0010 | Cladophora spp. |  |  | - |  | - | - | - |  | - | - | - | - | - | - | - | 0.03 | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\stackrel{-}{-}$ |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.08 |  |
| 0055 | Corallina chilensis |  | 1.53 | 1.50 | 0.08 | 0.55 | 0.08 | 0.05 | 0.08 | 0.10 | 1.03 | 2.05 | 0.55 | 0.05 | 0.55 | 0.08 | 1.03 | 0.55 | 0.05 |
| 0052 | Cryptopleura ruprechtiana |  |  | - |  |  | - | - | - | - |  | - | - | 1.00 |  |  |  |  | 0.50 |
| 0115 | Cryptopleura violacea |  | 0.08 | 0.03 | 19.50 | 32.00 | 31.00 | 13.00 | 29.50 | 36.50 | 22.50 | 10.00 | 54.50 | 21.00 | 4.50 | 6.00 | 52.50 | 47.50 | 24.50 |
| 0036 | Cystoseira osmundacea |  | 4.50 | 1.03 | 5.03 | 4.53 | 2.03 | 1.58 | 3.03 | 2.50 | 0.08 | 1.55 | 5.00 | 4.00 | 3.03 | 2.03 | 6.00 | 5.50 | 4.03 |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | $\bigcirc$ | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | 1.03 | 2.03 | 1.00 | - | 0.03 | - | - | - | 0.05 | - | - | - | 0.03 | - |  |
| 0030 | Dictyoneurum californicum |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | 0.03 | - | 15.00 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 3326 | Endarachne/Petalonia-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | 5 | - | - | - | $\bigcirc$ | - | $\stackrel{-}{-}$ | $\stackrel{-}{\circ}$ | - | - | ${ }^{-}$ |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.05 | 0.10 | 0.53 | 0.03 | 1.03 | 0.53 | 2.53 | 2.50 | 4.00 | 6.00 | 3.53 | 2.50 | 5.00 | 5.50 | 7.00 | 2.00 | 4.00 |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - |  | - |  | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | - | - | 0.03 | 1.00 | - | 1.00 | 0.53 | 0.03 | 0.05 | 0.05 | 0.50 | 0.50 | 1.50 | 1.05 | - | 1.00 | 0.50 |
| 0206 | Gelidium spp. |  | 0.03 | 0.05 | 0.03 | - | 0.53 | 0.53 | 0.03 | - | 0.05 | 0.03 | - | 0.03 | 0.50 | 0.03 | 0.05 | - | 0.03 |
| 1224 | Gloiosiphonia californica |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0109 | Grateloupia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | 0.05 | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - |  |
| 0983 | Haplogloia andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | , | . | - | - | $\bigcirc$ |  |
| 0035 | Laminaria setchellii |  |  |  |  |  |  |  |  |  |  |  |  | 0.03 | 0.03 |  | 0.03 |  |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | ! | 12-Oct-09 | 19-Feb-10 | 26-May-10 | 18-Aug-10 | 18-Oct-10 | 9-Feb-11 | 3-May-11 | 15-Aug-11 | 28-Oct-11 | 13-Jan-12 | 3-May-12 | 17-Aug-12 | 26-Nov-12 | 31-Jan-13 | 19-Apr-13 | 18-Jul-13 | 17-0ct-13 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | - | - | 0.08 | - | - | - | - | - |  | - |  |  |  |  | 0.03 |  |  |
| 1640 | Macrocystis pyrifera |  | 4.53 | 0.05 | 0.55 | 3.53 | 1.53 | 1.05 | 0.08 | 1.50 | 2.55 | 0.10 | 3.00 | 2.05 | 1.05 | 0.05 | 0.55 | 2.00 | 1.50 |
| 0082 | Mastocarpus papillatus |  | - | - | - | - | - |  | - |  |  | - |  |  | - | - | - | - | - |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | 0.03 | 0.53 | - | - | - | - | - | - | - | - |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1014 | Melobesia mediocris |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0094 | Microcladia borealis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | 0.03 | - | - | - | - | - | , - | - | - | - | - | - | - | - | - | - |
| 0153 | Neoptiota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 1154 | Nienburgia andersoniana |  | 1.00 | - | 0.05 | 2.55 | - | 2.03 | 6.50 | 7.00 | 10.50 | 4.50 | 1.50 | 6.00 | - | 0.03 | 0.03 | 0.50 | 2.53 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | 0.03 | - | 0.55 | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | $0 \cdot$ | - | - | - | $0{ }^{-}$ | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | 0.03 | - | - | - | 0.03 | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0099 | Porphyra spp. |  | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $0 \cdot$ |
| 0220 | Prionitis australis |  | 0.03 | - | - | - | - | 1.00 | - | - | - | - | - | - | 0.50 | - | - | - | 0.03 |
| 0106 | Prionitis spp. |  | 24.50 | 12.00 | 15.00 | 6.00 | 4.00 | 16.50 | 9.00 | 3.53 | 11.50 | 14.50 | 5.00 | 7.50 | 8.50 | 4.50 | 1.50 | 1.53 | 9.50 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | . | - | - |  | - | - | - | - | - | - | - | - | - |
| 1115 | Pterochondria woodii var. woodii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0192 | Pterosiphonia dendroidea |  | - | - | - | - | - | - | 1.00 |  | - | - | 0.03 | - | - | - | - | - | - |
| 0042 | Pterygophora californica |  | 0.03 | 0.08 | 0.03 | 0.10 | 0.05 | 0.05 | 0.08 | 0.03 | 0.05 | 0.10 | 0.08 | 0.10 | 0.08 | 0.08 | - | 0.03 | 0.10 |
| 0187 | Pugetia firma |  | - | - | - | $\bigcirc$ | - |  | - |  | - | - | - | - | - | - | - | - | - |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0122 | Rhodoptilum plumosum |  | - | $\bigcirc{ }^{-}$ | - | - | - | -0' | ${ }^{-}$ |  | - | - | - | - | 100 | 1200 | - | - |  |
| 0159 | Rhodymenia spp. |  | 11.50 | 6.03 | 21.50 | 9.00 | 7.50 | 10.00 | 19.00 | 13.00 | 9.53 | 12.00 | 12.50 | 13.00 | 16.00 | 12.00 | 14.50 | 21.50 | 10.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.05 | - | 0.08 | 0.03 | - | - | 0.53 | - | - | - | 0.58 | - | - | - | - | 0.50 | - |
| 1326 | Sargassum muticum |  | 0.03 | - | 0.08 | - | 0.03 | 0.05 | 0.05 | 0.03 | - | - | - | - | - | 0.05 | - | 0.50 | - |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0110 | Smithora naiadum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0014 | Ulva spp. |  | 0.03 | ${ }^{-}$ | 0.05 | 0.03 | - | 0.03 | 0.03 | - | - | - | 11.50 | 0.05 | - | - | 100 | 0.03 | - |
| 0057 | coralline crust |  | 13.50 | 38.50 | 8.00 | 40.00 | 44.50 | 27.00 | 15.00 | 31.00 | 25.50 | 36.50 | 11.50 | 33.00 | 41.00 | 33.50 | 21.00 | 18.50 | 38.50 |
| 1300 | filamentous red algae complex |  | 5.00 | 5.50 | 18.00 | 0.08 | - | 6.00 | 6.00 | - | 0.10 | 3.53 | 0.03 | 0.03 | 1.03 | 3.53 | 4.50 | - | 0.05 |
| 0059 | non-coralline crust |  | - | 1.03 | 0.03 | - | 0.08 | 0.03 | - | 0.03 | 0.03 | 0.03 | - | 0.53 | 0.08 | 0.05 | 0.03 | - | 0.05 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Point:



| Species Code (spcode) | Species | : 6-Feb-14 | 12-May-14 | 7-Aug-14 | 4-Nov-14 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0233 | Laminariales |  | 0.03 |  | 0.03 |
| 1640 | Macrocystis pyifera | 1.03 | 0.55 | 2.50 | 0.08 |
| 0082 | Mastocarpus papillatus | - | - | - | - |
| 0230 | Mazzaella rosea | - | - |  |  |
| 3383 | Mazzaella splendens | - | - | - |  |
| 1014 | Melobesia mediocris | - | - | - |  |
| 0094 | Microcladia borealis | - | - | - |  |
| 0095 | Microcladia coulteri | - | - |  |  |
| 0153 | Neoptilota spp. | - | - | - |  |
| 0041 | Nereocystis luetkeana | - | - | - | - |
| 1154 | Nienburgia andersoniana | 5.00 | 10.03 | 4.00 | 11.00 |
| 0096 | Opuntiella californica | - | - | - | - |
| 0184 | Osmundea spp. | - | - | 0.03 | 0.03 |
| 0199 | Phaeophyta | - | - | - |  |
| 0247 | Phaeostrophion irregulare | - | - | - |  |
| 1144 | Phycodrys spp. | - | - |  |  |
| 0135 | Phyllospadix spp. | - | - | - | - |
| 0203 | Pikea robusta | - | - | - |  |
| 0117 | Plocamium pacificum | - | 0.03 | - | - |
| 0118 | Polyneura latissima | - | - | - |  |
| 0099 | Porphyra spp. | - | - | - |  |
| 0220 | Prionitis australis | - | - | - |  |
| 0106 | Prionitis spp. | 8.50 | 2.00 | 1.03 | 6.00 |
| 0221 | Ptercladiella caloglossoides | - | - | - | - |
| 1115 | Pterochondria woodii var. woodii | - | - | - | - |
| 0192 | Pterosiphonia dendroidea | - | - | - | 2.03 |
| 0042 | Pterygophora californica | 0.10 | 0.05 | 0.05 | 0.03 |
| 0187 | Pugetia firma |  |  |  |  |
| 0219 | Rhodophyta (juv. blades) | 4.53 | - | - | 1.00 |
| 0122 | Rhodoptilum plumosum |  | - | - |  |
| 0159 | Rhodymenia spp. | 17.50 | 10.03 | 12.50 | 23.50 |
| 0104 | Sarcodiotheca gaudichaudii | - | 1.03 | 0.03 |  |
| 1326 | Sargassum muticum | 0:03 | 0.03 | - | - |
| 0155 | Scinaia confusa | - |  | - |  |
| 0110 | Smithora naiadum | - | - | - | - |
| 0014 | Ulva spp. | - | - | - | - |
| 0057 | coralline crust | 40.00 | 35.00 | 28.50 | 43.50 |
| 1300 | filamentous red algae complex | 2.55 | 0.03 |  | 0.53 |
| 0059 | non-coralline crust | 1.00 | 0.03 | 0.03 | 1.05 |

## Sampling code: $6=$ Coverage Based on \# of Contact Points

|  |  | Survey: | 2 | 3 | 4 | 5 | ${ }^{6}$ | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species |  | Survey Date: | 11-Oct-76 | 19-Mar-77 | 13-Jul-77 | 4-Oct-77 | 17-Mar-78 | 24-May-78 | 5-Jul-78 | 25-Sep-78 | 16-Nov-78 | 4-Jan-79 | 23-Mar-79 | 23-May-79 | 30-Jul-79 | 18-Sep-79 | 21-Nov-79 | 4-Jan-80 | 25-Mar-80 |
| $\begin{gathered} \text { Code } \\ \text { (spcode) } \end{gathered}$ | Species | Sampling <br> Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 0496 | Halcampa decemtentaculata | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |
| 0389 | Pista spp. | 6 | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social | 6 | - | - | 1.00 | - | - | - | - | - |  | - | - |  | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate At

## Sampling code: $6=$ Coverage Based on \# of C

Code


| (spcode) | Species |
| :---: | :--- |
| 0264 | Anthopleura elegantissima |

0496 Halcampa decemtentaculata
0735 Phragmatopoma californica
0389 Pista spp.
0480 tunicates, compound/social

| Subtidal Line Contact - Survey Invertebrate Al |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 54 | 55 | 56 | 57 | 58 | 60 | 61 |
|  |  | ! | 30-Mar-84 | 25-May-84 | 18-Jul-84 | 26-Sep-84 | 3-Dec-84 | 29-Jan-85 | 27-Mar-85 | 8-May-85 | 17-Jul-85 | 26-Sep-85 | 21-Nov-85 | 27-Mar-86 | 6-May-86 | 30-Jul-86 | 19-Sep-86 | 14-Nov-86 | 30-Mar-87 | 1-May-87 |
| $\begin{aligned} & \text { Code } \\ & \text { (spcode) } \end{aligned}$ | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | 0.50 | - |  |
| 0496 | Halcampa decemtentaculata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | . | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Al

# Sampling code: $6=$ Coverage Based on \# of C 

| ! | $62$ |  | $\begin{array}{r} 64 \\ \text { 20-Nov-87 } \end{array}$ | $\begin{array}{r} 65 \\ \text { 28-Jan-88 } \end{array}$ | $\begin{array}{r} 66 \\ \text { 28-Abr-88 } \end{array}$ | $\begin{array}{r} 67 \\ \text { 20-Jul-88 } \end{array}$ | $\begin{array}{r} 68 \\ 7-\operatorname{Sep}-88 \end{array}$ | $\begin{array}{r} 69 \\ \text { 17-Jan-89 } \end{array}$ | $\begin{array}{r} 70 \\ \text { 20-Apr-89 } \end{array}$ | $\begin{array}{r} 71 \\ \text { 31-Auq-89 } \end{array}$ | $\begin{array}{r} 72 \\ 27-\text { Oct-89 } \end{array}$ | $\begin{array}{r} 73 \\ 23 \text {-Feb-90 } \end{array}$ | $\begin{array}{r} 74 \\ \text { 3-May-90 } \end{array}$ | $\begin{array}{r} 75 \\ \text { 24-Aug-90 } \end{array}$ | $\begin{array}{r} 76 \\ \text { 6-Nov-90 } \end{array}$ | $\begin{array}{r} 77 \\ \text { 8-Feb-91 } \end{array}$ | $\begin{array}{r} 78 \\ \text { 8-May-91 } \end{array}$ | $\begin{array}{r} 79 \\ \text { 3-Sep-91 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | - | - | - | - | - | - | - |  | - | - | - | - |  | - | - | - | - |  |
|  | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - |  |  |  |
|  | - | - | 1.00 | - | - | - | - |  | - | - | - | - |  | - | - | - | - |  |
|  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
|  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate A

## Sampling code: $6=$ Coverage Based on \# of $C$

Species
Code
 spcode) Species
(sp0code) Anecies
0496 Hap
0496 Halcampa decemtentaculat
0735 Phragmatopoma californica
0480 Pista spp.
0480 tunicates, compound/social

| Subtidal Line Contact - Survey Invertebrate Al |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 99 | 101 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 |
| Species |  | ! | 14-Oct-97 | 5-May-98 | 2-Oct-98 | 12-Mar-99 | 27-May-99 | 24-Aug-99 | 14-Oct-99 | 13-Apr-00 | 5-Jul-00 | 8-Sep-00 | 3-Nov-00 | 22-Mar-01 | 30-May-01 | 15-Aug-01 | 31-Dec-01 | 27-Mar-02 | 8-May-02 | 13-Aug-02 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - |  | - |  | - | - | - | - | - |  |  |  |  |
| 0496 | Halcampa decemtentaculata |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  | 1.00 | 0.50 | 1.00 | 3.00 | 2.00 | 1.00 | 4.50 | 1.50 | - | 0.50 | 3.00 | 0.50 | - | - | - | - | - |  |
| 0389 | Pista spp. |  |  | - | - | - |  | - |  | - | - | - | - | '- | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  |  |  |  |  |  |  |  |  |  |  | - |  | - |  |  |  |  |  |

## Subtidal Line Contact - Survey Invertebrate A

| Sampling code: $6=$ Coverage Based on \# of C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) |  |  | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 |
|  |  | : | 26-Nov-02 | 26-Mar-03 | 7-May-03 | 4-Sep-03 | 13-Nov-03 | 11-Feb-04 | 27-May-04 | 3-Sep-04 | 13-Oct-04 | 17-Mar-05 | 27-May-05 | 2-Aug-05 | 1-Nov-05 | 21-Feb-06 | 12-May-06 | 16-Aug-06 | 1-Nov-06 | 7-Feb-07 |
|  | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - |  | - |  | - |  |  |  | - | - | - | - | - |  |
| 0496 | Halcampa decemtentaculata |  | - | - | - | - | - | - | - | - | - |  | - |  | - | - | - | - | - |  |
| 0735 | Phragmatopoma californica |  |  | - | - | - | - | - | - | - | 0.50 | - | - | - | - | 0.50 | - |  |  |  |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Line Contact - Survey Invertebrate At |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: $6=$ Coverage Based on \# of C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 137 | 138 | 139 | 140 | 141 | 8-4422 | 143 | $144$ | $145$ | $\begin{array}{r} 146 \\ \text { 20-Aua-09 } \end{array}$ | $\begin{array}{r} 147 \\ \text { 12-Oct-09 } \end{array}$ | $\begin{array}{r} 148 \\ \text { 19-Feb-10 } \end{array}$ |  | $\begin{array}{r} 150 \\ \text { 18-Aua-10 } \end{array}$ | $\begin{array}{r} 151 \\ \text { 18-Oct-10 } \end{array}$ | $\begin{array}{r} 152 \\ 9-\mathrm{Feb}-11 \end{array}$ | $\begin{array}{r} 153 \\ \text { 3-May-11 } \end{array}$ | $\begin{array}{r} 154 \\ \text { 15-Auq-11 } \end{array}$ |
| Species |  | s | 9-May-07 | 24-Jul-07 | 24-Oct-07 | 11-Mar-08 | 15-May-08 | 8-Aug-08 | 7-Nov-08 | 29-Jan-09 | 3-Jun-09 | 20-Aug-09 | 12-Oct-09 | 19-Feb-10 | 26-May-10 | 18-Aug-10 | 18-Oct-10 | 9-Feb-11 | 3-May-11 | 15-Aug-11 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - |  | - | - |  |  | - | - | - | - | - | - |  |
| 0496 | Halcampa decemtentaculata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ |  |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - | - | - | - | - | - | $\stackrel{\circ}{5}$ | - | - | - | 1.00 | - |  |
| 0389 | Pista spp. |  | - | - | - | - | - | - | - | - | - | - | - | 1.50 | - | - | - | 1.00 | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - |  |

0496 Anthopleura elegantissima
0735 Phragmatopoma californica
0389 Pista spp.
0480 Pista spp.

## Subtidal Line Contact - Survey Algal and Substrate Ábundance (\% Cover for 7 m squared) - South Diablo Cove SDC $3-4 \mathrm{~m}$

| Sampling code: 6= Coverage Based on \# of Contact Points |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Survey: | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Species |  | Survey Date: | 13-Oct-76 | 6-Jan-77 | 8-Jun-77 | 16-Nov-77 | 24-Mar-78 | 31-May-78 | 6-Jul-78 | 21-Sep.78 | 15-Nov-78 | 30-Jan-79 | 30-Mar-79 | 30-May-79 | 27-Jul-79 | 21-Sep-79 | 26-Nov-79 | 28-Jan-80 |
| Code |  | Sampling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (spcode) | Species | Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. | 6 | - | - | 0.03 | - | - |  | - |  |  | - |  |  |  |  | - |  |
| 1549 | Acrosorium ciliolatum | 6 | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0981 | Ahnfeltiopsis linearis | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0047 | Amplisiphonia pacifica | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 0245 | Bryopsis spp. | 6 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.complex | 6 | 26.50 | 32.50 | 33.00 | 22.50 | 25.00 | 26.00 | 26.50 | 32.00 | 25.50 | 30.00 | 19.00 | 29.50 | 20.50 | 21.00 | 25.00 | 19.50 |
| 0064 | Callophyllis flabelluata | 6 | - | - | 0.10 | 0.03 | - | 0.08 | 0.55 | 0.05 | 0.53 | 1.00 | 0.10 | 0.55 | 0.10 | 0.08 | 0.08 | 0.05 |
| 0112 | Callophylis spp. | 6 | - | - | 2.03 | - | - | - | 0.03 | 0.05 | 1.03 | 0.50 | 0.03 | 0.55 | 0.05 | 0.03 | 0.05 |  |
| 0239 | Chlorophyta (filamentous) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | . |  | - |  |
| 0125 | Chondracanthus corymbiferus | 6 | - | - | - | . | - | - | - | - | - | - | - | - | - | - | - |  |
| 1305 | Chondracanthus harveyanus/spinosus | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta | 6 | - | 8.00 | 16.00 | . | - | - | . | - | - | - | - | - | . | - | - |  |
| 0010 | Cladophora spp. | 6 | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. | 6 | - | - | - | $\cdot$ | - | - | - | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis | 6 | - | - | 0.03 | - | 0.03 | - | 0.08 | 0.05 | - | - | - | - | - | - | - | 0.03 |
| 0052 | Cryptopleura ruprechtiana | 6 | . | 2.50 | 6.50 | 2.53 | 1.53 | 5.03 | 7.00 | 4.50 | 3.00 | 6.50 | 6.00 | 12.50 | 6.03 | 2.53 | 1.55 | 3.55 |
| 0115 | Cryptopleura violacea | 6 |  |  | 0.53 |  | - | - | - | - | 0.03 | - | - | - | - | - | - |  |
| 0036 | Cystoseira osmundacea | 6 | 1.00 | 0.05 | 0.53 | 0.03 | 0.55 | 0.55 | 1.08 | 0.08 | 1.03 | 0.08 | 0.10 | 0.53 | 0.55 | 0.53 | 0.10 | 0.58 |
| 1189 | Delesseria decipiens | 6 | - | - |  |  | - | - | - | - | - | - | - | - | - | - | . |  |
| 0235 | Delesseriaceae (juv.) | 6 | 4.00 | - | 3.00 | - | 0.03 | - | - | - | - | - | 0.05 | - | - | - | - |  |
| 1830 | Desmarestia ligulata | 6 | - | - | 3.03 | 0.03 | - | $\cdots$ | - | - | - | - | - | - | - | - | . |  |
| 0190 | Dictyota binghamiae | 6 | - | - | 0.03 | - | - | 0.03 | - | - | - | - | 0.05 | - | - | - | - |  |
| 0238 | Ectocarpales | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii | 6 | - | - | - | - | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides | 6 | - | $\bigcirc$ | - | - | - | - | - | $0 \cdot$ | $0 \cdot$ | $0 \cdot$ | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex | 6 | - | 0.03 | 0.03 | - | - | 0.03 | - | 0.03 | 0.03 | 0.03 | - | - | - | - | - |  |
| 0193 | Fauchea laciniata | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0142 | Fryeella gardneri | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri | 6 | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum | 6 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 0206 | Gelidium spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) | 6 | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex | 6 | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii | 6 | - | - | - | - | 0.58 | 1.53 | 0.58 | 0.55 | 0.58 | 0.10 | 0.10 | 1.00 | 0.10 | 0.55 . | 0.10 | 0.10 |
| 0233 | Laminariales | 6 | - | - | - | - | 0.03 | - | - | - | - |  | - | - | - | - | - |  |
| 1640 | Macrocystis pyrifera | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0133 | Maripelta rotata | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | Survey Date: Sampling Code | 13-Oct-76 | 6-Jan-77 | 8-Jun-77 | 16-Nov-77 | 24-Mar-78 | 31-May-78 | 6-Jul-78 | 21-Sep-78 | 15-Nov-78 | 30-Jan-79 | 30-Mar-79 | 30-May-79 | 27-Jul-79 | 21-Sep-79 | 26-Nov-79 | 28-Jan-80 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens | 6 | - | - | - | 0.03 |  | - | - | - | - | - | - | - |  |  | - |  |
| 1242 | Membranoptera/Branchioglossum spp. | 6 | - | - | - |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri | 6 | - | - | 0.03 | - | - | - | - | 0.03 | - | - | - | - |  | - | - | - |
| 0153 | Neoptilota spp. | 6 | - | - |  | - | - | 0.03 | - - | - | - | - | - | - | - | 0.03 | - |  |
| 0041 | Nereocystis luetkeana | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1154 | Nienburgia andersoniana | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0096 | Opuntiella californica | 6 | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |
| 0184 | Osmundea spp. | 6 | - | - | - | 0.53 | - | - | - | - | - | - | - | - | - | - | - | - |
| 0199 | Phaeophyta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0247 | Phaeostrophion irregulare | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. | 6 | - | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - |  | - |
| 0135 | Phyllospadix spp. | 6 | 1.00 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0203 | Pikea robusta | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0117 | Plocamium pacificum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0118 | Polyneura latissima | 6 | - | - | 0.50 | - | - | 0.10 | 0.05 | 1.05 | 0.05 | 0.08 | 0.03 | 3.03 | 0.08 | 0.05 | - | - |
| 0099 | Porphyra spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0220 | Prionitis australis | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0106 | Prionitis spp. | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0221 | Ptercladiella caloglossoides | 6 | 0.50 | - | - | - | - | - | - | - | 0.08 | - | - | - | 0.03 | - |  |  |
| 0192 | Pterosiphonia dendroidea | 6 | - | - | 1.50 | - | - | 0.08 | 0.05 | - | - | 0.03 | 0.08 | 1.00 | - | - | 0.53 |  |
| 0042 | Pterygophora californica | 6 | 11.00 | 5.50 | 7.50 | 7.50 | 5.00 | 8.00 | 6.50 | 9.00 | 5.50 | 5.00 | 4.00 | 6.50 | 6.03 | 5.03 | 8.00 | 4.50 |
| 0187 | Pugetia firma | 6 | - | - | - | - | - |  | - |  |  |  | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) | 6 | - | - | 0.50 | - | - | - | - | - | - | 0.08 | - | - | 0.03 | 0.03 | . |  |
| 0122 | Rhodoptilum plumosum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | ${ }^{-}$ | - | - |  |
| 0159 | Rhodymenia spp. | 6 | - | - | 0.55 | - | - | 0.03 | - | - | - | - | 0.08 | 0.53 | 0.10 | 0.55 | 1.03 | 0.10 |
| 0104 | Sarcodiotheca gaudichaudii | 6 | - | - | - | - | - | - | $\cdots$ | - | - | - |  | - | - | - | - | - |
| 1326 | Sargassum muticum | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0155 | Scinaia confusa | 6 | - | - | - | - | - | - | - | - | - | - | - |  |  | - | - | - |
| 0014 | Ulva spp. | 6 | - | - | 1.53 | - | - | 0.03 | 0.03 | 0.03 | 0.05 | - | - | - | - | - | 0.03 | - |
| 0988 | Weeksia spp. | 6 | - | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust | 6 | 44.00 | 43.50 | 54.50 | 58.50 | 62.00 | 49.00 | 61.00 | 61.00 | 68.00 | 55.00 | 64.00 | 49.50 | 53.50 | 56.50 | 56.50 | 53.50 |
| 1300 | filamentous red algae complex | 6 | - | - | 1.50 | - | - | 0.05 | 1.08 | 0.08 | 0.03 | 0.03 | - | - | 0.03 | 0.03 | - | 0.03 |
| 0059 | non-coraline crust | 6 | 1.00 | 0.05 | 0.55 | 2.00 | - | 0.55 | 1.05 | 1.00 | 0.10 | 1.05 | 0.08 | 0.55 | 0.10 | 0.08 | 0.10 | 0.08 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

Sampling code: $6=$ Coverage Based on \# of Contact Points

| Species |  | ¢ | $\begin{array}{r} 18 \\ \text { 31-Mar-80 } \end{array}$ | $\begin{array}{r} 19 \\ \text { 20-May-80 } \end{array}$ | $\begin{array}{r} 20 \\ 7-\mathrm{Jul}-80 \end{array}$ | $\begin{array}{r} 21 \\ 22-\text { Sep- } 80 \end{array}$ | $\begin{array}{r} 22 \\ \text { 19-Nov-80 } \end{array}$ | $\begin{array}{r} 24 \\ \text { 25-Mar-81 } \end{array}$ | $\begin{array}{r} 25 \\ \text { 26-May-81 } \end{array}$ | $\begin{array}{r} 26 \\ 20-\mathrm{Jul} .81 \end{array}$ | $\begin{array}{r} 29 \\ \text { 14-Jan-82 } \end{array}$ | $\begin{array}{r} 30 \\ \text { 26-Mar-82 } \end{array}$ | $\begin{array}{r} 31 \\ \text { 14-May-82 } \end{array}$ | $\begin{array}{r} 32 \\ \text { 28-Jul-82 } \end{array}$ | $\begin{array}{r} 33 \\ 1-0 c t-82 \end{array}$ | $\begin{array}{r} 34 \\ \text { 12-Nov-82 } \end{array}$ | $\begin{array}{r} 37 \\ \text { 6-May-83 } \end{array}$ | $\begin{array}{r} 38 \\ \text { 22-Jul-83 } \end{array}$ | $\begin{array}{r} 39 \\ \text { 19-Sep-83 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - | - |  |  | - |  |  |  | - |  |  | - | - | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |  |  |
| 0981 | Ahnfeliopsis linearis |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0047 | Amplisiphonia pacifica |  | - | - | - | . | . | - | - | - | - | - | - | - | - | - | - |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | 0.10 | - | - | - | - | 0.05 | 0.03 | - | 0.03 | 0.05 | - | - | 0.03 | 0.08 . | 0.05 | 0.05 |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - |  |  | - |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 19.50 | 31.00 | 24.00 | 21.00 | 22.50 | 27.00 | 39.50 | 39.00 | 33.00 | 37.50 | 44.50 | 40.50 | 41.50 | 36.50 | 42.00 | 32.00 | 37.50 |
| 0064 | Callophyllis flabelluata |  | 0.08 | 1.05 | 0.10 | 0.10 | 0.10 | 0.05 | 0.10 | 0.58 | 0.03 | 0.10 | 2.03 | 0.10 | 2.55 | 0.53 | 0.03 | 0.08 | 0.58 |
| 0112 | Callophyllis spp. |  | 0.03 | 0.05 | - | 0.10 | 0.08 | 0.03 | 0.03 | 3.03 | 0.03 | 0.53 | 0.55 | 2.53 | 1.03 | 0.08 | 0.08 | 0.58 | 0.55 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - |  |
| 0125 | Chondracanthus corymbiferus |  | - | - | - | 0.50 | 1.00 | - | 0.03 | 0.05 | 0.50 | 0.05 | 0.03 | 1.53 | 1.03 | 1.05 | 1.53 | 0.55 | 1.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | $\cdot$ |  |
| 0055 | Corallina chilensis |  | 0.03 | 0.05 | 0.50 | 0.03 | 0.03 | - | 0.03 | 0.53 | 0.03 | 0.10 | 1.00 | 0.03 | 0.05 | 0.05 | 1.03 | 0.08 | 0.05 |
| 0052 | Cryptopleura ruprechtiana |  | 4.00 | 6.50 | 13.03 | 10.00 | 10.00 | 10.50 | 21.00 | 25.00 | 13.50 | 17.50 | 25.00 | 33.50 | 30.00 | 28.50 | 18.00 | 33.50 | 31.50 |
| 0115 | Cryptopleura violacea |  | - | 0.03 | - | - | - | 0.03 | 0.05 | - | - | - | 0.03 | - | 0.03 | - | - | - | 0.53 |
| 0036 | Cystoseira osmundacea |  | 0.08 | 1.05 | 0.10 | 1.53 | 1.08 | 0.58 | 1.03 | 1.55 | 2.05 | 0.10 | 2.53 | 2.53 | 5.03 | 4.03 | 2.53 | 2.53 | 1.55 |
| 1189 | Delesseria decipiens |  | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | 0.05 | ${ }^{-}$ | - | - | - | - | - | - | - | ${ }^{-}$ | - | - | - | - | - | $\stackrel{-}{-}$ |  |
| 1830 | Desmarestia ligulata |  | - | 0.58 | 4.03 | 3.50 | - | - | 0.55 | 1.50 | - | 0.05 | 2.53 | 3.50 | 0.53 | 0.50 | - | 17.00 | 27.00 |
| 0190 | Dictyota binghamiae |  | 0.05 | 1.00 | 0.05 | 0.03 | 0.08 | - | 0.03 | 0.03 | - | 0.05 | 0.55 | 0.50 | 0.05 | 0.03 | - |  |  |
| 0238 | Ectocarpales |  | - |  | - | - | - | - |  | - | - | - | - |  |  |  | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - |  | - | - | - | - | - | - | - | - | 0.50 | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.03 | 0.03 | - | - | 0.03 | 0.03 | - | 0.03 | - | 0.03 | 0.03 | - | 1.03 | 0.03 | - | - | 0.03 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Geididum coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0075 | Gelidium robustum |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | - | $\stackrel{-}{-}$ |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | 0.08 | - | - | - | - | - | - | - | 0.05 | 0.08 | 0.03 | 0.03 | - | - | 0.03 |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | 0.03 | - | - | $\cdot$ | - | - | - | - | - | - | . | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 0.10 | 1.08 | 0.58 | 0.58 | 0.58 | 0.10 | 0.10 | 0.58 | 0.58 | 0.55 | 1.08 | 0.10 | 1.05 | 0.10 | 1.03 | 1.08 | 1.55 |
| 0233 | Laminariales |  | - | 0.03 | 0.03 | 0.03 | - | - | - | 0.03 | - | - | - | - | - | - | - |  |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | ¢ | 31-Mar-80 | 20-May-80 | 7-Jul-80 | 22-Sep-80 | 19-Nov-80 | 25-Mar-81 | 26-May-81 | 20-Jul-81 | 14-Jan-82 | 26-Mar-82 | 14-May-82 | 28-Jul-82 | 1-Oct-82 | 12-Nov-82 | 6-May-83 | 22-Jul-83 | 19-Sep-83 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  |  | 0.03 | 0.03 | - | - |  | - | 0.03 | - | - | - |  | 0.50 | - | - | 0.03 |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | 0.05 | 0.08 | 0.55 | 0.03 | 0.03 | - | 0.05 | 0.08 |
| 0153 | Neoptilota spp. |  | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |  |
| 0096 | Opuntiella californica |  | 0.03 | - | - | - | - | 0.03 | 0.53 | - | - | - | - | 0.50 | - | - | - | 0.03 | 0.03 |
| 0184 | Osmundea spp. |  | - | - | 0.03 | - | - | 0.03 | - | - | - | 0.50 | 0.53 | - | 0.50 | 0.50 | 0.05 | 0.03 | 0.03 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | 0.03 | - | - | - | - | - | - | - | - |  | - | - | - | - | 0.03 |
| 0117 | Plocamium paciifum |  | - | - | 0.03 | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |  |
| 0118 | Polyneura latissima |  | 0.03 | 2.53 | 2.05 | 2.00 | 1.08 | 0.05 | 3.05 | 2.55 | 0.50 | 1.55 | 4.03 | 3.53 | 2.50 | 0.55 | 1.05 | 5.50 | 8.00 |
| 0099 | Porphyra spp. |  |  |  | - |  |  | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - |  |
| 0106 | Prionitis spp. |  | - | - | - | - | - | - |  |  | - | - | - | - | - | - | - | 0.05 | 0.05 |
| 0221 | Ptercladiella caloglossoides |  | - | 0.05 | 0.03 | - | - | 0.03 | 0.53 | 0.03 | 0.03 | 0.08 | 0.08 | 0.05 | 0.55 | 0.03 | 0.03 | - | 0.03 |
| 0192 | Pterosiphonia dendroidea |  | 0.05 | 0.05 | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 | 0.08 | 0.53 | 0.03 | 0.08 | 0.05 | 0.03 | - | 0.03 |
| 0042 | Pterygophora californica |  | 4.03 | 5.03 | 3.50 | 2.53 | 4.00 | 4.50 | 1.53 | 5.00 | 2.05 | 3.50 - | 5.50 | 1.05 | 4.00 | 1.58 | 0.10 | 0.10 | 2.53 |
| 0187 | Pugetia firma |  | - | - | - | .- | - | 0.03 | - | - | - |  |  | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | - | - |  | 0.05 | - | - | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 0.08 | 0.58 | 0.58 | 0.55 | 0.55 | 0.08 | 0.10 | - | 0.08 | 0.05 | 0.55 | 0.55 | 2.50 | 1.55 | 0.55 | 1.55 | 3.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | . | 0.03 | - | - | - | - | 0.03 | - | - | 0.05 | 0.03 | 0.03 | - | - | - |  |
| 0988 | Weeksia spp. |  |  |  |  | - | - | - | 0.03 | - | - | - | - | - | 0.03 | 0.03 | - | - |  |
| 0057 | coralline crust |  | 61.50 | 63.50 | 55.50 | 62.50 | 64.00 | 55.50 | 58.50 | 62.50 | 51.50 | 64.00 | 61.50 | 53.50 | 61.50 | 56.00 | 69.00 | 55.50 | 54.50 |
| 1300 | filamentous red algae complex |  |  |  |  |  |  | 0.50 | 0.53 | 0.03 | - | 0.55 | 1.53 | 0.05 | 0.08 | 0.03 | 0.55 | 1.55 | 0.05 |
| 0059 | non-coralline crust |  | 0.10 | 0.58 | 0.10 | 0.08 | 0.08 | 0.58 | 0.05 | 0.05 | 0.05 | 2.50 | 0.08 | - | 0.10 | 0.08 | 0.10 | 0.05 | 0.10 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: $6=$ Coverage Based on \# of Contact Points



| Species Code (spcode) | Species | ! | 13-Jan-84 | 5-Apr-84 | 30-May-84 | 19-Jul-84 | 28-Sep-84 | 16-Nov-84 | 28-Jan-85 | 14-Mar-85 | 6-May-85 | 16-Jul-85 | 18-Sep-85 | 15-Nov-85 | 8-Apr-86 | 29-Jul-86 | 23-Sep-86 | 19-Nov-86 | 26-Mar-87 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | - |  | 0.53 | 0.03 | - |  | 0.55 | 0.03 | 0.03 | 0.03 | 0.53 | 0.03 | 0.03 | 0.03 | 0.55 | 0.53 |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | 0.05 | 0.03 | - | - | - | 0.08 |  |  |  | 0.03 |
| 0095 | Microcladia coulteri |  | 0.08 | 0.08 | 0.08 | 2.03 | 0.10 | 0.08 | 0.05 | 0.08 | 1.50 | 1.05 | 0.08 | 0.08 |  | 0.08 | 0.10 | 0.03 | 0.05 |
| 0153 | Neoptilota spp. |  | - | - | . | - | - | 0.03 | - | 0.05 | 1.00 | 0.05 | 0.03 | 0.08 | 0.03 |  |  | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - |  | - |  |  | - | - |  | - | - |  | - |  |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |
| 0096 | Opuntiella californica |  |  |  | 0.03 | 0.03 | 1.00 |  | 0.53 | 1.00 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 | 0.03 | - |  |
| 0184 | Osmundea spp. |  | 0.53 | 0.05 |  | 0.03 | 0.05 | 0.05 | 0.10 | 0.55 | 3.53 | 0.55 | 2.03 | 3.03 | 2.00 | 0.58 | 3.00 | 0.53 | 1.08 |
| 0199 | Phaeophyta |  | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | 0.05 | 0.05 | - | - | - | 0.03 | - | - | 0.03 | 0.05 | 0.03 | - | - |
| 0117 | Plocamium paciicum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | 0.03 |
| 0118 | Polyneura latissima |  | 3.50 | 3.53 | 0.05 | 0.03 | 0.05 | 0.08 | 0.10 | 0.55 | 1.55 | 0.05 | 0.53 | 0.50 | 0.05 | 1.03 | 0.08 | 0.03 | 1.05 |
| 0099 | Porphyra spp. |  | - |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | 0.03 |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |
| 0106 | Prionitis spp. |  | - | 0.03 | - | 0.03 | 0.03 | - | 0.05 | 0.03 | - | 0.03 | 0.03 | 0.08 | 0.08 | 0.08 | 0.05 | 0.03 | 0.03 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | 0.03 | 0.05 | - | 0.03 | 0.03 | 0.03 | 0.08 | 0.05 | - | - | 0.10 | 0.03 | 0.05 |
| 0192 | Pterosiphonia dendroidea |  | - | 0.53 | 0.05 | 0.03 | - | - | - | 0.03 | 0.03 | 0.03 | - | - | 0.05 | 0.05 | 0.03 | 0.03 | 0.05 |
| 0042 | Pterygophora californica |  | 2.53 | 0.10 | 0.58 | 3.00 | 0.10 | 0.10 | 0.10 | 0.08 | 0.58 | 0.08 | 1.08 | 0.08 | 0.05 | 0.08 | 1.55 | 0.08 | 1.03 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 |  |
| 0219 | Rhodophyta (juv. blades) |  | 0.08 | - | - | - | - | - | - | - | . - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | 0.03 | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - |
| 0159 | Rhodymenia spp. |  | 1.50 | 0:55 | 0.55 | - | - | 0.03 | 0.08 | - | 0.05 | 0.53 | 0.03 | 0.03 | 0.05 | 0.55 | 0.10 | 0.50 | 0.03 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | . - | - | - | - | 0.03 | 0.08 | 0.08 | 0.08 | - | 0.05 | 0.03 | 0.08 | 0.05 | 0.05 | - | 0.53 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | 0.05 | - |  | - |  | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | 0.10 | 19.50 | 16.00 | 8.53 | 2.03 | 3.50 | 3.50 | 0.03 | 0.10 | 0.08 | - | - | - | - | - |
| 0988 | Weeksia spp. |  | - | - |  |  | - | 0.03 |  |  |  |  |  | - | - | - | - | - |  |
| 0057 | coralline crust |  | 67.50 | 61.00 | 49.00 | 59.50 | 47.50 | 57.00 | 56.00 | 64.00 | 64.00 | 60.00 | 69.50 | 63.50 | 64.00 | 65.50 | 67.00 | 62.00 | 68.00 |
| 1300 | filamentous red algae complex |  | 0.08 | 0.08 | 0.05 | 2.05 | 0.58 | 0.10 | 0.10 | 0.58 | 0.08 | 0.08 | 0.05 | 0.08 | - | 0.03 | 0.05 | 0.05 | 0.05 |
| 0059 | non-coralline crust |  | 0.10 | 0.10 | 0.55 | 1.50 | 0.08 | 0.58 | 0.10 | 0.10 | 0.03 | 0.08 | 1.58 | 0.10 | 0.10 | 0.08 | 1.08 | 0.05 | 3.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Points

| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | ! | 20-May-87 ${ }^{61}$ | [ $\begin{array}{r}62 \\ \text { 22-Jul-87 }\end{array}$ | 30-Sep-87 $\begin{array}{r}63\end{array}$ | 20-Nov-87 $\begin{array}{r}64 \\ \hline\end{array}$ | [ $\begin{array}{r}73 \\ 23-\mathrm{Feb}-90\end{array}$ | 3-May-90 | 24-Aug-90 | 6-Nov-90 | 1-Feb-91 | 8-May-91 | 3-Sep-91 | 2-Dec-91 | 24-Mar-92 | 8-Jun-92 | 83 | 84 | 8523-Mar-93 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10-Sep-92 | 23-Oct-92 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - |  | - |  |  |  |  |  |  |  |  |  |  |  | - |  |
| 1549 | Acrosorium ciliolatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.03 | - | 0.03 | 0.03 | 0.50 | 0.03 | 0.03 | 0.03 | 0.50 | 0.03 | 0.03 | 0.03 | 0.03 | 0.08 | 0.50 |  | 0.55 |
| 0047 | Amplisiphonia pacifica |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | - | - | - | - | - |  |  | - |  | 0.03 |  | 0.05 |  |  |
| 0245 | Bryopsis spp. |  | - | - | - | $\cdot$ | - | - | - |  |  |  |  |  |  |  |  |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 26.00 | 18.50 | 23.00 | 15.50 | 13.50 | 23.50 | 25.00 | 14.50 | 8.00 | 21.00 | 16.50 | 13.50 | 17.50 | 16.50 | 22.00 | 22.00 | 19.50 |
| 0064 | Callophyllis flabelluata |  | 0.53 | 0.03 | 0.03 | $0.03{ }^{-}$ | 0.10 | 0.08 | 0.03 | 0.08 | 0.05 | 0.53 | 0.08 | 0.58 | 2.03 | 0.08 | 0.08 | 0.05 | 2.05 |
| 0112 | Callophyllis spp. |  | 0.03 | 1.55 | 0.55 | 1.55 | 2.00 | 1.50 | 0.55 | 0.08 | 1.50 | 5.50 | 4.00 | 1.50 | 4.00 | 2.00 | 1.00 | 2.00 | 1.55 |
| 0239 | Chlorophyta (flamentous) |  |  | - |  | - | - | - | - | - |  |  |  |  |  |  |  |  |  |
| 0077 | Chondracanthus canaliculatus |  |  | - |  | - | - | - | - | - | - | - | - |  | - | - | - |  |  |
| 0125 | Chondracanthus corymbiferus |  | 10.50 | 10.03 | 8.50 | 8.00 | 5.50 | 11.50 | 19.50 | 8.50 | 5.00 | 17.00 | 17.00 | 14.00 | 7.00 | 21.00 | 15.00 | 10.00 | 8.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  |  | - | - |  | - |  |  |  |  |  |  |  |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | 0.05 | - |  | - | 0.03 | - | - | 0.08 |  | - |  | 3.50 |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - |  | - |  | - |  |  |  | - |  |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - |  | - |  | - |  | - |  |  |  |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - | - | - |  | - |  | 0.03 | - |  |
| 0146 | Colpomenia spp. |  | - | - | - | - | - | - | - | - |  |  |  |  |  |  | 0.10 | - |  |
| 0055 | Corallina chilensis |  | 1.50 | 0.08 | 0.03 | - | - | - | 0.05 | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.53 | 0.50 | - | - |  |
| 0052 | Cryptopleura ruprechtiana |  | 47.00 | 66.50 | 66.50 | 42.50 | 32.50 | 60.50 | 53:00 | 53.00 | 43.00 | 53.50 | 46.50 | 40.00 | 34.00 | 41.00 | 41.00 | 31.50 | 16.00 |
| 0115 | Cryptopleura violacea |  | 45.00 | 30.00 | 8.00 | 14.50 | 0.05 | 3.00 | - | 0.03 | 0.03 | 0.03 | 1.03 | 1.00 | 4.50 | 1.00 | 4.50 | 1.50 | 6.00 |
| 0036 | Cystoseira osmundacea |  | 0.08 | 0.08 | 0.55 | 0.53 | 0.55 | 0.03 | 1.05 | 1.03 | 0.55 | 0.55 | 1.50 | 0.05 | 1.50 | 1.03 | 1.53 | 2.00 | 1.00 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - |  | - | - | - |  | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | $\checkmark$ | - | - |  |  |  |  |  |  | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | - | - | 11.50 | 17.53 | 0.08 | - | 0.05 | - | - |  | 1.03 |  | - |  |
| 0190 | Dictyota binghamiae |  | 0.50 | - | - | - | 0.03 | - | - | - | 0.03 |  | - |  |  |  |  | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - |  | - | - |  |  |  | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - - | - | - | - | - |  | - |  | - |  | 0.50 |  |
| 0071 | Erythrophyllum delesserioides |  | $\stackrel{-}{-}$ | $\stackrel{-}{-}$ | $0 \cdot$ | 5 | - | 5 | - | $0 \cdot$ | - | $\stackrel{-}{-}$ | $0 \cdot$ | 0 |  | $\stackrel{-}{-}$ |  |  |  |
| 1304 | Farlowia/Pikea spp.complex |  | 0.58 | 0.55 | 0.03 | 0.55 | 0.55 | 0.55 | 0.10 | 0.05 | 0.08 | 0.55 | 0.05 | 0.10 | 0.58 | 2.05 | 1.50 | 1.55 | 3.50 |
| 0193 | Fauchea laciniata |  |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Geidium robustum |  | 0.03 | - | 0.03 | 0.05 | 0.05 | - | 0.53 | 0.03 | 0.03 | 0.03 | - | 0.08 | 0.03 | 0.03 | 1.03 | 0.55 | 0.05 |
| 0206 | Gelidium spp. |  | - | - | - |  | - | - | - | - | - | 0.03 | 0.03 | - | 0.03 | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | $\stackrel{-}{-}$ | $\stackrel{-}{-}$ | - | - | $\stackrel{-}{-}$ | - | - | 0. | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | 0.08 | - | - | - | 0.05 | 0.05 | 0.03 | - | 0.03 | 0.03 | - | - | 0.05 | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | 0.03 | - | - | - | - | 0.03 | - | - | 0.03 | - | - | $\bigcirc$ | - | - | - | - |  |
| 0212 | Hymenena spp. |  |  | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 0.08 | 0.03 | 0.03 | 0.55 | 0.08 | 0.08 | 0.05 | 0.05 | 0.08 | 0.05 | 0.53 | 0.55 | 0.55 | 1.05 | 1.00 | 2.00 | 0.05 |
| 0233 | Laminariales |  | - | - | - | - | - | 0.08 | 0.05 | - | - | 0.05 | 0.05 | - | 0.05 |  | 0.03 |  |  |
| 1640 | Macrocystis pyrifera |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | 0.03 |  |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  | 0.03 | - | 0.03 | - | - | - | - | - | - | 0.03 | - | - | - | 0.03 | - | - |  |


| Species Code (spcode) | Species | ! | 20-May-87 | 22-Jul-87 | 30-Sep-87 | 20-Nov-87 | 23-Feb-90 | 3-May-90 | 24-Aug-90 | 6-Nov-90 | 1-Feb-91 | 8-May-91 | 3-Sep-91 | 2-Dec-91 | 24-Mar-92 | 8-Jun-92 | 10-Sep-92 | 23-Oct-92 | 23-Mar-93 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | 0.55 | 2.00 | 3.50 | 1.55 | 0.03 | 1.53 | 1.03 | 2.05 | 0.55 | 1.05 | 1.55 | 1.00 | - | 0.10 | 3.50 | 0.53 | 0.08 |
| 1242 | Membranoptera/Branchioglossum spp. |  |  |  |  |  | 0.03 |  |  |  |  |  | - |  |  |  |  |  |  |
| 0095 | Microcladia coulteri |  | 0.55 | 0.10 | 0.03 | 0.08 | 0.10 | 0.10 | 0.10 | 0.08 | 0.10 | 0.10 | 0.10 | 0.10 | - | - | 0.10 | 0.08 | 0.10 |
| 0153 | Neoptilota spp. |  | - | - | - | - |  | 0.03 | - | - | - |  | - |  | 0.03 |  |  |  |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | 0.03 |  | - |  |  |  |  | $\cdots$ |
| 1154 | Nienburgia andersoniana |  | - | - | - | - | - | - | - | - | 0.05 | 0.50 | - | 1.00 | 0.03 | 2.00 | 0.03 | 0.50 | 3.00 |
| 0096 | Opuntiella californica |  | 0.50 | 0.03 | - | 0.03 | - | 0.03 | 0.03 | - |  |  | 0.03 |  |  |  |  |  | 0.03 |
| 0184 | Osmundea spp. |  | 4.00 | 2.05 | 0.55 | 3.03 | 2.03 | 0.05 | 0.10 | 0.58 | 0.55 | 2.55 | 3.03 | 1.00 | 1.53 | 4.03 | 0.55 | 2.50 | 2.53 |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - |  | - |  | - | .- |  |  |  |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - |  | - | - | - |  |  |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| 0117 | Plocamium pacificum |  | 0.03 | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | 0.05 |
| 0118 | Polyneura latissima |  | 4.00 | 0.05 | 0.05 | 0.08 | - | 0.08 | - | - | - | 0.05 | - | 0.53 | - | - | - | - | 1.53 |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | - | - | - | - | 1.50 | 0.05 | 0.53 | - | 0.03 | 0.05 | 1.00 | 1.53 | 0.05 | 0.05 | 0.53 | 0.03 |  |
| 0106 | Prionitis spp. |  | 0.03 | 0.03 | 0.50 | 0.03 | 0.50 | 0.05 | 0.53 | 0.58 | 1.53 | 0.55 | 2.03 | 4.03 | 2.03 | 1.03 | 1.05 | 3.50 | 1.53 |
| 0221 | Ptercladiella caloglossoides |  | 0.05 | 0.10 | 0.03 | - | 0.05 | 0.05 | 0.03 |  | - | - |  |  | - | 0.03 |  |  |  |
| 0192 | Pterosiphonia dendroidea |  | 1.03 | 0.03 | - | 0.03 | 0.50 | 0.03 | - |  | 0.03 | - | 0.03 | 0.03 | 0.03 | 0.05 | - | - | 0.53 |
| 0042 | Pterygophora californica |  | 1.05 | 0.10 | 0.10 | 1.03 | 1.55 | 0.10 | 1.03 | 0.10 | 0.58 | 1.08 | 5.53 | 3.03 | 0.55 | 0.55 | 3.50 | 3.53 | 2.55 |
| 0187 | Pugetia firma |  | - | 0.03 | 0.03 | - | - | - | 0.03 | 0.03 | - | 0.03 | 0.03 | 0.05 | - |  | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - |  | - | - | - |  | - | 0.50 |  |
| 0122 | Rhodoptilum plumosum |  | 0.03 | - | - | - | - | - | - |  | 0.03 | - | - | - | - |  | - |  |  |
| 0159 | Rhodymenia spp. |  | 0.05 | 1.53 | 1.55 | 0.53 | 1.05 | 2.03 | 3.03 | 3.03 | 1.08 | 3.00 | 0.55 | 1.53 | 2.03 | 5.00 | 6.50 | 6.00 | 5.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | 0.58 | 0.03 | 0.03 | - | 0.10 | 0.05 | - | 0.05 | 0.05 | 0.08 | 0.03 | 0.05 | 0.03 | 0.03 |  |  | 0.05 |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | $\cdot$ |  |  |  |  |  |  |  | - |  |  |
| 0155 | Scinaia confusa |  | - | - | - | 0.03 | - | - | 0.03 | - |  | 0.03 | - |  | - | 0.03 | - | - |  |
| 0014 | Ulva spp. |  | - | 0.03 | - |  | 0.08 | 0.03 | 0.05 | 0.03 | - | 0.03 | 0.05 | - | - |  | 0.10 | - |  |
| 0988 | Weeksia spp. |  | - |  | - |  |  |  |  |  | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 73.00 | 70.50 | 69.00 | 72.00 | 65.00 | 63.50 | 69.00 | 62.50 | 61.00 | 61.00 | 62.00 | 64.00 | 64.00 | 65.00 | 60.00 | 58.50 | 59.50 |
| 1300 | filamentous red algae complex |  | 0.08 | 0.03 |  |  |  | 0.05 | 0.03 | - | 0.03 | 0.50 | 0.03 | 0.03 | 0.05 | 0.03 | 0.53 | - | 0.03 |
| 0059 | non-coralline crust |  | 1.03 | 0.55 | 0.08 | 1.55 | 1.05 | 0.03 | 0.53 | 0.08 | 0.08 | - | 0.58 | 4.00 | 2.50 | 1.00 | 1.53 | 1.53 | 2.00 |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points



| Species Code (spcode) | Species | ! | 26-May-93 | 24-Aug-93 | 26-Oct-93 | 28-Mar-94 | 19-May-94 | 3-Aug-94 | 26-Oct-94 | 7-Mar-95 | 21-Jul-95 | 2-Apr-96 | 13-May-97 | 14-Oct-97 | 5-May-98 | 5-Oct-98 | 13-Apr-99 | 3-Jun-99 | 23-Aug-99 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | 0.53 | 2.50 | 1.00 | - | 0.50 | - | - |  | 0.03 | - | - | - | - | - | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | 0.05 | 0.03 | 0.03 | - | 0.03 | 0.05 | - | - | 0.08 | - | - | - | - | - | - | - | - |
| 0153 | Neoptilota spp. |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | 0.03 | - | - |  | - | - | - | - | - | - | - | - | - | - | - | $0{ }^{-}$ |  |
| 1154 | Nienburgia andersoniana |  | 0.05 | 0.03 | - | 0.53 | - | 1.00 | - | - | - | - | - | 0.05 | - | - | - | 0.03 |  |
| 0096 | Opuntiella californica |  |  |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | 1.50 | 0.03 | 0.03 | 0.08 | 0.03 | - | - | - | - | $\cdots$ | - | - | - - | - | - | - |  |
| 0199 | Phaeophyta |  | - |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | 0.03 | - | - | 0.03 | - | - | - | - | - |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0220 | Prionitis australis |  | - | 0.03 | - | 1.50 | 0.03 | 1.50 | 0.50 | - | - | - | - | - | - | - | 0.03 | 0.03 | 1.00 |
| 0106 | Prionitis spp. |  | 3.55 | 2.00 | 0.55 | 3.50 | 3.53 | 3.50 | 1.55 | 2.53 | 2.00 | 1.50 | 0.05 | 0.50 | 2.03 | 3.50 | 1.00 | 2.50 | 1.03 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | - | - | 0.05 | - | 0.08 | 0.05 | - | 0.50 | 1.50 | - | 0.53 | 0.03 | - | 0.03 | 2.53 | - |
| 0042 | Pterygophora californica |  | 4.03 | 0.10 | 2.03 | 2.00 | 1.08 | 2.53 | 0.10 | 1.55 | 3.50 | 0.58 | 0.58 | 0.58 | 0.03 | 0.08 | 0.08 | 0.08 | 0.08 |
| 0187 | Pugetia firma |  | - | - | - | 0.08 | - | - | - | - | 0.05 | - | - | - | .- | - | - | - | 0.03 |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | 0.03 | - | 0.03 | - | - | 0.05 |  | - | - | - |  |
| 0159 | Rhodymenia spp. |  | 8.00 | 8.00 | 6.50 | 11.00 | 9.50 | 10.00 | 6.00 | 6.00 | 12.50 | 8.00 | 3.50 | 5.53 | 6.50 | 5.03 | 4.50 | 5.53 | 5.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 | - | - | - | - | - | - | . | - | - | - | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | 0.03 | - | - | - | - | - | - | - | 0.05 | - | - | - | 㖪 | - | - | - | - |
| 0014 | Ulva spp. |  | - | - | - | 0.03 | - | 0.05 | 0.05 | 0.03 | 0.03 | - | - | - | 0.05 | - | - | - | 0.03 |
| 0988 | Weeksia spp. |  | - | - | - |  | - |  | - | - |  | - | - | - |  | - | - | - |  |
| 0057 | coralline crust |  | 56.50 | 60.00 | 51.50 | 59.00 | 49.50 | 51.00 | 42.50 | 51.00 | 35.50 | 42.00 | 48.50 | 50.00 | 53.00 | 38.50 | 54.50 | 51.00 | 47.50 |
| 1300 | filamentous red algae complex |  | 1.00 | 0.03 | 0.03 | 2.00 | 1.53 | 0.53 | 1.53 | 5.00 | 2.00 | 0.03 | - | - | 0.55 | -- | 0.03 |  | 8.00 |
| 0059 | non-coralline crust |  | 2.05 | 0.05 | 0.10 | 1.08 | 3.03 | 1.05 | 0.53 | 0.58 | - | 1.03 | 1.53 | 4.00 | 2.50 | 0.58 | 2.55 | 2.03 | 0.03 |


|  |  |  | $\begin{array}{r} 107 \\ \text { 2-Nov-99 } \end{array}$ | $\begin{array}{r} 108 \\ \text { 3-Mav-00 } \end{array}$ | $\begin{array}{r} 109 \\ \text { 6-Jul-00 } \end{array}$ | $\begin{array}{r} 110 \\ \text { 18-Sep-00 } \end{array}$ | $\begin{array}{r} 111 \\ \text { B-Nov-no } \end{array}$ | $\begin{array}{r} 112 \\ \text { 23-Mar-01 } \end{array}$ | $\begin{array}{r} 113 \\ \text { 31-Mav-01 } \end{array}$ | $\begin{array}{r} 114 \\ \text { 6-Sep-01 } \end{array}$ | $\begin{array}{r} 115 \\ \text { 13-Dec-01 } \end{array}$ | $\begin{array}{r} 116 \\ \text { 22-Mar-02 } \end{array}$ | $\begin{array}{r} 117 \\ \text { 20-Jun-02 } \end{array}$ | $\begin{array}{r} 118 \\ \text { 19-Аио } 0 \text { ? } \end{array}$ | $\begin{array}{r} 119 \\ \text { 25-Nov. } 02 \end{array}$ | 120 <br> 2-Apr-03 | $\begin{array}{r} 121 \\ \text { 18-Jun-03 } \end{array}$ | 122 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code (spcode) | Species | , |  |  |  |  |  |  |  |  |  |  |  | 19-Aug-02 |  |  |  | 3-Sep-03 |  |
| 0013 | Acrosiphonia spp. |  | - |  | - | - | - |  |  | - |  | - | - | - | - | - |  |  |  |
| 1549 | Acrosorium ciliolatum |  | 0.10 | 0.53 | - | - | - | 11.50 | 7.50 | 0.50 | 0.55 | 9.50 | 3.00 | - | - | 7.50 | 2.53 | - | 1.03 |
| 0126 | Ahnfeltiopsis leptophylla |  | - | - | - | - | 0.50 | - |  | - | - |  | - | - | - | - | . | - |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.05 | 0.53 | 0.55 | 0.08 | - | 0.03 | 1.50 | 2.53 | - | 0.53 | - | 0.03 | - | - | 1.00 | - | 0.53 |
| 0047 | Amplisiphonia pacifica |  | - | - |  | . | - | - | - | - | - | - | - |  | - | - | . | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | - | - | 0.10 | - | 0.08 | 0.08 | - | - | - | - | - |  | - | - | - | - |  |
| 0245 | Bryopsis spp. |  | - |  |  |  | - |  | - | - | - | - | - |  |  | - | - | - | - |
| 0049 | Calliarthron/Bossiella spp.complex |  | 22.00 | 21.00 | 34.50 | 29.00 | 17.00 | 29.50 | 28.50 | 33.00 | 21.50 | 18.50 | 13.50 | 24.50 | 21.50 | 15.00 | 12.50 | 36.00 | 15.00 |
| 0064 | Callophyllis flabellulata |  | 0.50 | 0.53 | 0.08 | 1.00 | - | 0.03 | 0.55 | 3.03 | 0.05 | 0.53 | 0.55 | 0.10 |  | 0.03 | 0.08 | 0.10 | 0.05 |
| 0112 | Callophyllis spp. |  | - | 0.53 | 2.50 | 0.53 | 0.03 | 0.03 | 1.50 | 0.03 | 0.03 | 0.55 | 1.03 | 0.05 | 0.03 | 0.53 | 0.53 | - | 0.03 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | . | - | - | - |  | - | - | - | - | - | - |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0125 | Chondracanthus corymbiferus |  | 1.58 | 3.53 | 6.00 | 6.50 | 6.50 | 3.03 | 7.00 | 11.00 | 7.00 | 7.50 | 8.00 | 9.50 | 6.00 | 4.00 | 8.00 | 4.03 | 4.03 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - |  | - |  |  | . | - | - | - | - | . | - | - |  |  |
| 1302 | Chrysophyta |  | - | 30.50 | - | 0.10 | - | 0.10 | 7.50 | - | - | 1.50 | - | 2.50 | . | 3.00 | 4.00 | - |  |
| 0010 | Cladophora spp. |  | - |  | - | - | - | - | - | - | - | - | - | - |  |  | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0146 | Colpomenia spp. |  | 0.03 |  |  | - | 0.03 | - | - | - | - | 0.03 | 0.03 . | - | - | - | - | - | - |
| 0055 | Corallina chilensis. |  | 0.05 |  | 0.05 | 0.03 | - | - | - | 0.05 | - | - |  | 0.03 | - | - | . | - | - |
| 0052 | Cryptopleura ruprechtiana |  |  | 0.55 | 5.00 | 3.50 | 4.03 | 1.00 | - | 7.00 | 6.00 | - | 7.00 | 13.50 | 7.50 | - | - | 8.50 | 3.50 |
| 0115 | Cryptopleura violacea |  | 0.03 | 1.00 | 4.50 | 1.00 | 0.50 | 3.00 | 7.00 | 21.50 | 0.58 | 10.00 | 10.50 | 9.00 | 1.03 | 7.50 | 5.00 | 10.00 | 17.00 |
| 0036 | Cystoseira osmundacea |  | 0.08 | 1.00 | 0.53 | 0.50 | 2.00 | 0.53 | 2.53 | 1.05 | 1.50 | 1.53 | 5.50 | 1.50 | 1.53 | 1.50 | 2.50 | 1.03 | 0.05 |
| 1189 | Delesseria decipiens |  | . | - | - | . | . | - | - | - | , | . |  |  | , | , | , |  |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | 4.05 | 53.50 | 15.50 | 1.03 | 0.03 | 1.05 | 0.05 | - | 1.05 | 2.00 | 4.00 | 0.03 | 1.53 | 3.50 | 0.03 |  |
| 0190 | Dictyota binghamiae |  | 0.03 | - | - | - | - | - | - | - | - | . | - | - | 0.03 | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | 0.50 | - |  |
| 1304 | Farlowia/Pikea spp.-complex |  | 0.03 | 0.05 | 0.55 | 0.53 | 2.00 | 1.50 | 2.00 | 1.50 | 2.00 | 1.53 | 2.00 | 1.05 | 2.03 | 1.05 | 3.50 | 3.03 | 2.53 |
| 0193 | Fauchea laciniata |  | - | - | 0.03 | - | 0.03 | - | - | - | - | - | - | . | . | - |  | . |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | . | - | - | - | - | . | - | . | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |  |
| 0075 | Gelidium robustum |  | 0.05 | 0.08 | 0.55 | - | 3.50 | 0.05 | - | 0.05 | 0.53 | 1.03 | 0.53 | - | 0.03 | 0.03 | 1.03 | 1.00 | 1.00 |
| 0206 | Gelidium spp. |  | 0.03 |  | - | - |  | - | - | - | - | . |  |  |  | , |  | . |  |
| 1224 | Gloiosiphonia californica |  | , | - | - | - | . | - | - | - | - | - | . | . | . | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | - | . | - | - | - | - | - | - | 1.00 | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - | 0.05 | - | - | . | 1.00 | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | - | . | . | - | - | - | 0.05 | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - |  | - | - | - | - | - | - |  | . | 1.00 | - |  |
| 0035 | Laminaria setchellii |  | 0.03 | 0.03 | 0.03 | - | 0.53 | 0.05 | - | 0.53 | 0.55 | 0.08 | 0.03 | 0.10 | 0.10 | - | 0.50 | 0.05 | 0.05 |
| 0233 | Laminariales |  | 0.03 | 0.03 | - | - |  |  | 0.05 |  | 0.03 |  | 0.03 | 0.10 |  | 0.05 | 0.03 |  | 0.03 |
| 1640 | Macrocystis pyrifera |  | 5.05 | 1.55 | 2.55 | 4.55 | 3.00 | 1.03 | 1.55 . | 1.08 | 2.08 | 1.53 | 4.53 | 11.00 | 2.55 | 2.05 | 3.00 | 0.50 | 2.00 |
| 0133 | Maripelta rotata |  |  |  |  |  | 㖪 |  | . |  | , |  |  |  |  | . 0 | . 0 |  |  |
| 0230 | Mazzaella rosea |  | - |  |  | - | - | - | - | - | - |  |  |  |  | - | - |  |  |


| $\begin{gathered} \text { Species } \\ \text { Code } \\ \text { (spcode) } \\ \hline \end{gathered}$ | Species | $\leqslant$ | 2-Nov-99 | 3-May-00 | 6-Jul-00 | 18-Sep-00 | 8-Nov-00 | 23-Mar-01 | 31-May-01 | 6-Sep-01 | 13-Dec-01 | 22-Mar-02 | 20-Jun-02 | 19-Aug-02 | 25-Nov-02 | 2-Apr-03 | 18-Jun-03 | 3-Sep-03 | 7-Nov-03 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | - | 0.50 | - | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - |  |
| 1242 | Membranopter/Branchioglossum spp. |  | - | - | - | - | - | - | . - | - | - | - | - | - | - | - | - |  |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | 0.05 | - | - | - | - | - | - | 0.03 | - | - | - | 0.03 | $\bigcirc$ |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | 0.03 | - | - | 0.03 |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - |  |  |
| 1154 | Nienburgia andersoniana |  | . | - | 0.55 | 0.53 | - | 2.00 | 0.10 | 2.50 | 0.50 | 0.05 | 3.00 | 0.05 | 1.08 | 0.50 | - | - | 1.53 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | - | - | - | - | - | $\cdot$ | - | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | $\bigcirc$ | - | - | - | - |  |
| 0118 | Polyneura latissima |  | - | - | 0.05 | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - |  |
| 0099 | Porphyra spp. |  |  | - | - | - | - | - | - | - | - | - | $0{ }^{-}$ | - | - | - | $\bigcirc$ | - |  |
| 0220 | Prionitis australis |  | 1.03 | 0.08 | - | 1.03 | 3.00 | 1.03 | 1.00 | 0.53 | 3.00 | 0.03 | 0.03 | - | - | .- | 0.03 | - | 0.50 |
| 0106 | Prionitis spp. |  | 1.00 | 2.50 | 0.55 | 4.03 | 0.03 | 2.53 | 1.00 | 5.00 | - | 0.05 | 0.55 | 1.53 | 0.58 | 2.03 | 1.00 | 5.03 | 0.50 |
| 0221 | Ptercladiella caloglossoides |  |  | - |  | - | - | - | - | - | $0 \cdot$ | - |  | - | - | $\bigcirc$ | $\bigcirc$ | - |  |
| 0192 | Pterosiphonia dendroidea |  | 7.00 | - | 0.05 | 0.50 | 6.00 | 3.53 | 1.05 | 0.03 | 0.08 | 2.03 | 0.05 | $00^{-}$ | $0 \cdot$ | 0.10 | 0.08 | 0.03 | 0.58 |
| 0042 | Pterygophora californica |  | 0.03 | - | 0.03 | 0.05 | - | 0.03 | - | 0.53 | - | - | - | 0.05 | 0.05 | - | - | - | 0.03 |
| 0187 | Pugetia firma |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | $\cdots$ | - | - | 5 | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | 0.05 | $\bigcirc$ | $\cdots$ | - | - | - | - | $\bigcirc$ | - | 0.50 | - | - | 0.58 | - | - |  |
| 0159 | Rhodymenia spp. |  | 3.05 | 7.03 | 8.00 | 9.00 | 8.00 | 6.50 | 7.03 | 5.50 | 8.00 | 8.00 | 7.50 | 11.50 | 2.53 | 15.00 | 9.00 | 8.00 | 7.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.50 | 0.05 | 0.03 | - | - | - | 0.03 | - | 0.05 | 0.50 | 0.03 | - | - | - | - |  |
| 1326 | Sargassum muticum |  | - | - |  | - | - | 0.03 | - - | - | - | - | - | - - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | 0.03 | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - | 0.03 |
| 0988 | Weeksia spp. |  | - | - |  | - | - | - | - | - | - | - | - | - | - | - | $7{ }^{\circ}$ | - |  |
| 0057 | coralline crust |  | 37.00 | 22.00 | 55.50 | 50.50 | 48.00 | 47.00 | 62.00 | 51.00 | 75.00 | 76.00 | 74.50 | 29.50 | 43.00 | 73.00 | 72.00 | 64.00 | 71.00 |
| 1300 | filamentous red algae complex |  | - | 0.50 | 0.55 | 0.53 | 0.53 | 1.53 | 0.08 | 4.00 | 0.10 | 0.10 | 0.10 | 0.03 |  | 0.03 | 0.08 | 0.53 | 0.05 |
| 0059 | non-coralline crust |  | 1.05 | 0.10 | 2.00 | 1.05 | 2.00 | 0.05 | - | 0.08 | 1.53 | 0.50 | 0.50 | 1.50 | 0.08 | 0.50 | 0.50 | 0.55 | 2.50 |

## Subtidal Line Contact - Survey Algal and Substrate Abund

## Sampling code: 6 = Coverage Based on \# of Contact Points

| Species Code (spcode) | Species | ! | $\begin{array}{r} 124 \\ \text { 12-Mar-04 } \end{array}$ | $\begin{array}{r} 125 \\ 28-M a y-04 \end{array}$ | $\begin{array}{r} 126 \\ 7 \text { 7-Sep-04 } \end{array}$ | $\begin{array}{r} 127 \\ \text { 1-Dec-04 } \end{array}$ | $\begin{array}{r} 128 \\ \text { 18-Mar-05 } \end{array}$ | $\begin{array}{r} 129 \\ \text { 31-May-05 } \end{array}$ | $\begin{array}{r} 130 \\ \text { 3-Aug-05 } \end{array}$ | $\begin{array}{r} 131 \\ \text { 17-Nov-05 } \end{array}$ | $\begin{array}{r} 132 \\ 22-\mathrm{Feb}-06 \end{array}$ | $\begin{array}{r} 133 \\ \text { 22-May-06 } \end{array}$ | $\begin{array}{r} 134 \\ \text { 17-Aug-06 } \end{array}$ | $\begin{array}{r} 135 \\ 23-\mathrm{Oct}-06 \end{array}$ | $\begin{array}{r} 136 \\ 5-\mathrm{Feb}-07 \end{array}$ | $\begin{array}{r} 137 \\ \text { 23-May-07 } \end{array}$ | $\begin{array}{r} 138 \\ \text { 20-Aug-07 } \end{array}$ | $\begin{array}{r} 139 \\ \text { 15-Nov-07 } \end{array}$ | $\begin{array}{r} 140 \\ \text { 7-Mar-08 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0013 | Acrosiphonia spp. |  |  |  | - | - | - | - | - | - |  |  |  |  |  |  | - |  |  |
| 1549 | Acrosorium ciliolatum |  | 0.08 | 2.53 | 0.03 | - | 0.10 | 5.50 | - | 0.53 | 4.50 | 7.00 | - | 0.03 | 1.55 | 0.55 | - | 0.03 | 6.00 |
| 0126 | Ahnfeltiopsis leptophylla |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 0.55 | 0.03 | 0.03 | 0.50 | - | 0.10 | - | 1.53 | 1.05 | 1.05 | 0.58 | 1.03 | 1.03 | 0.05 | 0.03 | - | 0.0 |
| 0047 | Amplisiphonia pacifica |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |  | - |  |
| 1303 | Antithamnion/Pterothamnion spp.complex |  | 0.03 | 0.03 | - | - | - | - | - | 0.08 | 0.08 | - | - | - | 0.03 | - | - | 0.03 | 0.0 |
| 0245 | Bryopsis spp. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - | ${ }^{-}$ |  |  |
| 0049 | Calliarthron/Bossiella spp.complex |  | 31.50 | 18.50 | 23.00 | 18.00 | 11.53 | 29.50 | 12.50 | 24.50 | 26.00 | 36.50 | 19.00 | 29.00 | 35.50 | 37.00 | 27.50 | 19.00 | 22.50 |
| 0064 | Callophyllis flabelluata |  | 0.08 | 0.05 | 0.55 | - | . - | 0.05 | - | 1.05 | 0.08 | 0.05 | 0.05 | 0.58 | 0.05 | 0.03 | - | 0.03 |  |
| 0112 | Callophyllis spp. |  | 0.03 | 1.50 | 1.00 | - | - | - | - | 0.03 | 0.53 | 0.03 | 0.03 | - | - | 0.03 | - | - |  |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | - | - |  |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0125 | Chondracanthus corymbiferus |  | 5.00 | 9.50 | 10.00 | 6.00 | 1.05 | 5.00 | 1.53 | 6.50 | 4.00 | 8.50 | 5.00 | 6.00 | 6.00 | 6.03 | 6.00 | 6.00 | 5.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1302 | Chrysophyta |  | - | 22.50 | - | - | - | 0.50 | 3.00 | - | 4.50 | - | 11.00 | - | 0.05 | - | - | - | 2.03 |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - | - | - |  |  |  | - |  |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - |  | - | - |  | - | - | - | - | - |  |  |
| 0146 | Colpomenia spp. |  | - | - |  | - | - | - | 0.03 | - | - |  | - | - | - | - | - | - |  |
| 0055 | Coralina chilensis |  | - | - | 0.05 | - | - | 0.03 |  | 0.03 | 0.03 | - | - | - | 0.05 | - | - | - | 0.03 |
| 0052 | Cryptopleura ruprechtiana |  | 1.50 | 1.55 | 4.00 | 1.00 | 0.03 | 0.55 | 0.05 | 1.03 | - | 4.00 | 3.00 | 5.00 | - | 5.00 | 1.50 | 1.00 | 0.55 |
| 0115 | Cryptopleura violacea |  | 7.50 | 3.50 | 34.00 | 6.50 | 0.03 | - | 0.53 | 1.53 | 8.50 | 15.50 | 0.53 | 1.53 | 5.50 | 4.00 | 0.03 | - | 0.05 |
| 0036 | Cystoseira osmundacea |  | 0.53 | 1.53 | 0.53 | 0.03 | 1.53 | 1.05 | 6.50 | 3.50 | 1.53 | 6.03 | 2.53 | 3.53 | 3.50 | 4.53 | 2.53 | 1.50 | 1.50 |
| 1189 | Delesseria decipiens |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | 0.50 | 2.50 | - | - | 0.05 | - | - | - | 0.10 | - | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | 0.03 | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 3.50 | 4.00 | 2.53 | 1.50 | 0.03 | 0.50 | 0.03 | 2.03 | 1.50 | 4.50 | 5.50 | 6.50 | 4.53 | 6.00 | 5.00 | 3.03 | 5.00 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0142 | Fryeella gardneri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 1.00 | 1.00 | 0.50 | 1.50 | 0.05 | 0.05 | 0.05 | 0.05 | 0.03 | - | - | 0.53 | 1.53 | 0.05 | 0.03 | 0.05 | 0.05 |
| 0206 | Gelidium spp. |  | - | - | - | - | 0.05 | - | - | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.-complex |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | $\stackrel{-}{-}$ | - | - | - | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | - | 0.05 | - | 0.05 | - | 0.03 | 0.05 | 0.03 | - | - | - | - | - | - | - | - |  |
| 0233 | Laminariales |  | 0.03 | - | - | - | - | 0.03 | 0.03 | 0.05 | 0.03 | - | - | - | 0.03 | 0.08 | - | - |  |
| 1640 | Macrocystis pyrifera |  | 0.05 | 8.00 | 14.50 | 4.00 | 0.55 | 6.50 | 5.53 | 3.00 | 1.03 | 4.03 | 2.03 | 3.03 | 0.58 | 3.00 | 6.50 | 3.03 | 4.00 |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0230 | Mazzaella rosea |  |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | : | 12-Mar-04 | 28-May-04 | 7-Sep-04 | 1-Dec-04 | 18-Mar-05 | 31-May-05 | 3-Aug-05 | 17-Nov-05 | 22-Feb-06 | 22-May-06 | 17-Aug-06 | 23-Oct-06 | 5-Feb-07 | 23-May-07 | 20-Aug-07 | 15-Nov-07 | 7-Mar-08 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - |  |  |  |  |  |  | - |  | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - |  |  | - | - | - | - | - | - |  |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | 0.03 | - |  | - | - | - | - | - | - |  |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | 0.03 |  | - | - |  | - | - | - | - | - | - |  |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | 0.05 | - | - | - | - | - |  |  |
| 1154 | Nienburgia andersoniana |  | 0.58 | 1.03 | 1.00 | 0.03 | - | 0.03 |  | 1.00 | 0.03 | 1.05 | - | 0.05 | 0.53 | 0.50 | 0.53 | 1.53 | 0.05 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - |  |  |  |
| 0184 | Osmundea spp. |  | - | 0.03 | 0.03 | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - |  |
| 0199 | Phaeophyta |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | . | - | - | - | - | - | - | - | - | - | - |  |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | . | . | - | - | - |  |
| 0203 | Pikea robusta |  | . | - | . | - | . | . | - | - | - | - | - | - | . | - | - | - |  |
| 0117 | Plocamium pacificum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.03 | . | 0.03 |  |
| 0118 | Polyneura latissima |  | - | 0.03 | 0.03 | - | - | . | - | - | - | - | - | - | - | - | - | - |  |
| 0099 | Porphyra spp. |  | - |  |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | 0.50 | 0.05 | 0.50 | - | - | - | - | - | - | - | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 1.03 |  |
| 0106 | Prionitis spp. |  | 3.00 | 0.08 | 0.05 | 1.50 | 1.05 | 3.50 | 0.53 | 3.50 | 2.50 | - | 1.03 | 3.00 | 3.00 | 3.50 | 3.53 | 2.53 | 2.03 |
| 0221 | Ptercladiella caloglossoides |  |  | - | - | - |  |  |  | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | 0.55 | - | - | - | 0.03 | 0.03 |  | 0.03 | 0.05 | - | - | - | 5 | - | $\cdots$ | $\stackrel{-}{-}$ |  |
| 0042 | Pterygophora californica |  | 0.05 | 0.03 | - | 0.08 | 0.08 | 0.08 | 0.08 | 0.55 | 0.10 | 0.05 | 0.05 | 0.10 | 0.05 | 0.08 | 0.10 | 0.08 | 0.05 |
| 0187 | Pugetia firma |  | - | - | - | . | - | - | - - | - | - | 0.03 | - | 0.03 | - | 0.03 | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0122 | Rhodoptilum plumosum |  | - | - | - | - | - | - | - | 0.03 | - | ${ }^{-}$ | - | - | - | - | - | 0.03 | 0.03 |
| 0159 | Rhodymenia spp. |  | 5.50 | 12.00 | 8.53 | 3.00 | 7.05 | 6.00 | 9.00 . | 9.00 | 10.00 | 10.50 | 12.00 | 14.00 | 17.00 | 9.00 | 10.00 | 12.50 | 5.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | 0.03 | - | - | - | - | - | - | 0.03 | 0.05 | - | - | 0.03 | - | - | 0.03 |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | 0.03 | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | - | - | - | - | - | - | . | . | - | - | - | 0.03 | 0.03 | - |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 53.00 | 19.00 | 24.00 | 40.50 | 47.50 | 39.50 | 36.50 | 42.50 | 34.50 | 29.00 | 32.00 | 36.00 | 43.00 | 31.50 | 48.00 | 47.50 | 46.00 |
| 1300 | filamentous red algae complex |  | 1.05 |  | 0.03 |  |  | 2.03 | - | 2.00 | 3.53 | 2.05 | - | 2.03 | 5.50 | 1.55 | - | 6.50 | 0.05 |
| 0059 | non-coralline crust |  | 1.05 | - | 0.03 |  | 0.55 | 0.05 | 1.50 | 1.50 | 0.05 | 0.05 | 0.03 | 0.08 | 0.03 |  | 0.03 | 0.05 |  |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

Sampling code: $6=$ Coverage Based on \# of Contact Points


| Species Code (spcode) | Species | ! | 10-Jun-08 | 8-Sep-08 | 19-Nov-08 | 30-Jan-09 | 2-Jun-09 | 27-Aug-09 | 20-Oct-09 | 5-Mar-10 | 27-May-10 | 27-Aug-10 | 20.0ct-10 | 14-Jan-11 | 21-Apr-11 | 16-Aug-11 | 31-Oct-11 | 30-Jan-12 | 22-May-12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | - | - | - | - | - | - | - |  | - | - | - | = | - |  | - | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0153 | Neoptilota spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 1154 | Nienburgia andersoniana |  | - | 0.03 | - | 0.05 | - | 0.03 | - | - | - | 0.05 | - | 0.03 | 0.05 | 0.03 | 0.55 | 0.05 | 0.03 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0184 | Osmundea spp. |  | - | - | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . |  |
| 0203 | Pikea robusta |  | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - |
| 0117 | Plocamium pacificum |  | - | - | - | - | . | 0.03 | 0.03 | 0.03 | - | - | - | 0.03 | 0.03 | - | - | . |  |
| 0118 | Polyneura latissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.05 |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0220 | Prionitis australis |  | 0.03 | 0.05 | 2.00 | 1.03 | 0.53 | 0.05 | 0.03 | - | - | - | - | - | - | 0.50 | 0.50 | - |  |
| 0106 | Prionitis spp. |  | 0.53 | 3.03 | 1.03 | 0.58 | 2.50 | 2.53 | 3.50 | 1.50 | 1.53 | 2.03 | 0.08 | 0.03 | 2.00 | 2.53 | 1.00 | 0.03 | 1.53 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - |  |  |
| 0192 | Pterosiphonia dendroidea |  | 0.03 | - | - | 0.03 | - | 2.50 | - | - | 5.00 | - | - | - | - | - | - | - | 0.03 |
| 0042 | Pterygophora californica |  | 0.05 | 0.50 | 0.05 | 0.08 | 0.08 | 0.05 | 0.05 | 0.03 | 0.08 | 0.58 | 0.08 | 0.58 | 0.10 | 0.08 | 0.08 | 0.10 | 0.08 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0122 | Rhodoptilum plumosum |  | 0.03 | - | - | 0.08 | - | 2.50 | - | - | 0.05 | - | - | 0.05 | 0.03 | - | - | - | 0.05 |
| 0159 | Rhodymenia spp. |  | 4.53 | 5.50 | 10.50 | 12.00 | 10.00 | 18.00 | 11.50 | 7.50 | 20.50 | 17.00 | 15.50 | 21.00 | 20.50 | 18.00 | 23.00 | 11.00 | 22.00 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | 0.05 | - | - | - | - |  |  | - | - | 0.03 |  |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |
| 0155 | Scinaia confusa |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - | - | - | - - | - | - | - | - | 0.05 | 0.03 | - | - | - | - | - | - | 0.05 |
| 0988 | Weeksia spp. |  | - | - | - | - | - |  |  |  |  |  | - | - | - | - | - | - |  |
| 0057 | coralline crust |  | 38.00 | 50.00 | 48.50 | 37.00 | 42.50 | 30.50 | 43.00 | 52.00 | 25.00 | 49.00 | 51.00 | 44.50 | 41.50 | 51.50 | 40.50 | 50.50 | 42.50 |
| 1300 | filamentous red algae complex |  |  |  | 0.05 | 6.03 | 3.50 | 10.00 | 0.03 | 1.03 | 8.50 | 4.50 | 1.50 | 6.00 | 6.00 | - | 4.50 | 0.03 | 7.50 |
| 0059 | non-coralline crust |  | 0.50 | 0.05 | 0.03 |  | 0.03 |  | 0.05 | 0.53 |  |  | 0.50 | 0.03 |  | - |  |  |  |

## Subtidal Line Contact - Survey Algal and Substrate Abunda

## Sampling code: 6 = Coverage Based on \# of Contact Points

|  |  | 158 |  | $159$ | $160$ | $161$ | $162$ | $163$ | $164$ |  | $166$ | $\begin{array}{r} 167 \\ \text { 5-Nov-14 } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code |  | ! | 27-Aug-12 | 27-Nov-12 | 14-Feb-13 | 22-Apr-13 | 24-Jul-13 | $25-\mathrm{Oct}-13$ | $24-\mathrm{Feb}-14$ | 2-Jun-14 | 17-Jul-14 |  |
| (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |
| 0013 | Acrosiphonia spp. |  | - | - |  | - | - | - |  | - | - |  |
| 1549 | Acrosorium ciliolatum |  | - | 0.05 | 1.03 | 2.00 | 0.05 | - | 3.53 | 2.53 | 1.00 | 0.53 |
| 0126 | Ahnfeltiopsis leptophylla |  | - |  |  |  |  |  |  |  |  |  |
| 0981 | Ahnfeltiopsis linearis |  | 2.50 | 1.55 | - | 0.05 | 1.00 | 0.03 | 0.55 | 1.58 | 0.10 | 3.53 |
| 0047 | Amplisiphonia pacifica |  | . | - | - |  | - |  |  |  |  |  |
| 1303 | Antithamnion/Pterothamnion spp.-complex |  | - | - | - | 0.03 | - | - | 0.05 | - | - |  |
| 0245 | Bryopsis spp. |  | - | - | - | - | - | - | - | - | - |  |
| 0049 | Calliarthron/Bossiella spp.-complex |  | 26.50 | 31.50 | 31.00 | 41.00 | 44.00 | 31.00 | 28.50 | 35.50 | 39.00 | 29.50 |
| 0064 | Callophyllis flabelluata |  | 0.50 | 0.08 | - | 3.50 | 0.05 | 0.03 | 0.10 | 2.53 | 0.10 | 0.10 |
| 0112 | Callophyllis spp. |  | - | - | - | 0.03 | - | 0.05 | - | - | - | 0.03 |
| 0239 | Chlorophyta (filamentous) |  | - | - | - | - | - | - - | - | - | - |  |
| 0077 | Chondracanthus canaliculatus |  | - | - | - | - | - | - - | - | - | - |  |
| 0125 | Chondracanthus corymbiferus |  | 2.50 | 6.00 | 3.03 | 4.00 | 5.50 | 5.00 | 5.00 | 6.50 | 5.50 | 8.00 |
| 1305 | Chondracanthus harveyanus/spinosus |  |  | - | - | - | - | - |  | - | - |  |
| 1302 | Chrysophyta |  | - | - | - | - | - | - | - | - | - |  |
| 0010 | Cladophora spp. |  | - | - | - | - | - | - | - | - | - |  |
| 1143 | Clathromorphum parcum |  | - | - | - | - | - | - | - | - | - |  |
| 0025 | Coilodesme californica |  | - | - | - | - | - | - | - | - | - |  |
| 0146 | Colpomenia spp. |  |  | - | - | - | - | - | - | - | - |  |
| 0055 | Corallina chilensis |  | 0.05 | 0.05 | 0.03 | 0.08 | - | 0.03 | 0.03 | 0.05 | 0.03 | 0.05 |
| 0052 | Cryptopleura ruprechtiana |  | 1.03 | 3.53 | 1.53 | 1.55 | 5.50 | 3.00 | 2.50 | 10.00 | 8.50 | 4.03 |
| 0115 | Cryptopleura violacea |  | 3.50 | 3.03 | 1.05 | 7.00 | 2.00 | 2.03 | 3.50 | 11.00 | 16.50 | 5.00 |
| 0036 | Cystoseira osmundacea |  | 3.03 | 3.50 | 2.00 | 2.00 | 1.03 | 0.05 | 1.05 | 0.53 | 0.05 | 2.50 |
| 1189 | Delesseria decipiens |  |  |  | - |  | - |  |  |  |  |  |
| 0235 | Delesseriaceae (juv.) |  | - | - | - | - | - | - | - | - | - |  |
| 1830 | Desmarestia ligulata |  | - | - | - | 0.03 | - | - | - | - | - |  |
| 0190 | Dictyota binghamiae |  | - | - | - | - - | - | - | - | - | - |  |
| 0238 | Ectocarpales |  | - | - | - | - | - | - | - | 0.50 | - |  |
| 0031 | Egregia menziesii |  | - | - | - | - | - | - | - | - | - |  |
| 0071 | Erythrophyllum delesserioides |  | - | - | - | - | - | - | - | - | - |  |
| 1304 | Farlowia/Pikea spp.complex |  | 1.53 | 5.53 | 2.03 | 3.53 | 3.55 | 2.50 | 6.00 | 7.50 | 5.50 | 3.00 |
| 0193 | Fauchea laciniata |  | - | - | - | - | - | - | 0.03 | - | - |  |
| 0142 | Fryeella gardneri |  |  | 0.03 | - | - | - | - | - | - | - |  |
| 0072 | Gastroclonium subarticulatum |  | - | - | - | - | - | - | - | - | - |  |
| 0073 | Gelidium coulteri |  | - | - | - | - | - | - | - | - | - |  |
| 0075 | Gelidium robustum |  | 0.03 | 0.08 | - | 0.03 | 0.03 | 0.53 | - | - | - |  |
| 0206 | Gelidium spp. |  | - | - | - | - | - | - | - | - | - |  |
| 1224 | Gloiosiphonia californica |  | - | - | - | - | - | - | - | - | - |  |
| 0083 | Gracilariopsis andersonii |  | - | - | - | - | - | - | - | - | - |  |
| 0149 | Halicystis ovalis (=Derbesia marina) |  | - | - | - | - | - | - | - | - | - |  |
| 0152 | Halymenia/Schizymenia spp.complex |  | - | - | - | - | - | - | - | - | - |  |
| 0212 | Hymenena spp. |  | - | - | - | - | - | - | - | - | - |  |
| 0035 | Laminaria setchellii |  | 0.03 | 0.05 | 0.05 | 0.03 | - | - | - | - | 0.05 |  |
| 0233 | Laminariales |  | - | . | - | - | 0.05 | - | - | - | - |  |
| 1640 | Macrocystis pyrifera |  | 1.03 | 1.55 | 2.05 | 3.50 | 3.53 | 4.50 | 3.50 | 4.50 | 8.00 | 6.00 |
| 0133 | Maripelta rotata |  | - | - | - | - | - | - | - | - | - |  |


| Species Code (spcode) | Species | ! | 27-Aug-12 | 27-Nov-12 | 14-Feb-13 | 22-Apr-13 | 24-Jul-13 | 25-Oct-13 | 24-Feb-14 | 2-Jun-14 | 17-Jul-14 | 5-Nov-14 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 3383 | Mazzaella splendens |  | - | - | - | - | - |  | - |  | - |  |
| 1242 | Membranoptera/Branchioglossum spp. |  | - | - | - | - | - | - | - | - | - | - |
| 0095 | Microcladia coulteri |  | - | - | - | - | - | - | - | - | - | - |
| 0153 | Neoptilota spp. |  | - | - | - | 0.03 | - | - | - | - | - | - |
| 0041 | Nereocystis luetkeana |  | - | - | - | - | - | - | - | - | - | - |
| 1154 | Nienburgia andersoniana |  | - | 0.50 | - | - | - | - | 0.50 | 1.00 | 1.53 | 3.03 |
| 0096 | Opuntiella californica |  | - | - | - | - | - | - | - | - | - |  |
| 0184 | Osmundea spp. |  | - | - - | - | - | - | 0.03 | 0.03 | - | - |  |
| 0199 | Phaeophyta |  | - | - | - | - | - | - | - | - | - | - |
| 0247 | Phaeostrophion irregulare |  | - | - | - | - | - | - | - | - | - | - |
| 1144 | Phycodrys spp. |  | - | - | - | - | - | - | - | - | - | - |
| 0135 | Phyllospadix spp. |  | - | - | - | - | - | - | - | - | - |  |
| 0203 | Pikea robusta |  | - | - | - | - | - | - | $\because$ | - | - |  |
| 0117 | Plocamium pacificum |  | - | 0.03 | - | 0.50 | 0.03 | - | - | 0.03 | - |  |
| 0118 | Polyneura latissima |  | - | - | - | 0.03 | - | - | - | 0.55 | 0.03 | - |
| 0099 | Porphyra spp. |  | - | - | - | - | - | - | - | . - | - | - |
| 0220 | Prionitis australis |  | - | - | - | 0.03 | - | - | - | - | 0.03 |  |
| 0106 | Prionitis spp. |  | 2.00 | 1.05 | 1.50 | 0.08 | 0.03 | 0.50 | 1.50 | 0.03 | 0.05 | 0.55 |
| 0221 | Ptercladiella caloglossoides |  | - | - | - | - | - | - | - | - | - |  |
| 0192 | Pterosiphonia dendroidea |  | $\cdot$ | - | - | - | - | - | 0.03 | 0.03 | - |  |
| 0042 | Pterygophora californica |  | 0.08 | 0.08 | 0.05 | 0.08 | 0.08 | 0.08 | 0.05 | 0.03 | - | 0.03 |
| 0187 | Pugetia firma |  | - | - | - | - | - | - | - | - | - |  |
| 0219 | Rhodophyta (juv. blades) |  | - | - | - | - | - | - | 1.00 | - | - | - |
| 0122 | Rhodoptilum plumosum |  | - | - | - | 0.03 | - | - | - | 0.08 | 0.03 |  |
| 0159 | Rhodymenia spp. |  | 26.50 | 20.00 | 14.00 | 20.50 | 17.00 | 14.50 | 15.00 | 24.50 | 15.50 | 15.50 |
| 0104 | Sarcodiotheca gaudichaudii |  | - | - | - | - | - | - | - |  | : - |  |
| 1326 | Sargassum muticum |  | - | - | - | - | - | - | - | - | - |  |
| 0155 | Scinaia confusa |  | - | - | . - | - | - | - | - | - | - |  |
| 0014 | Ulva spp. |  | - - | - | - | 0.03 | - | - | - | - | - |  |
| 0988 | Weeksia spp. |  | - | - | - | - | - | - | - | 0.03 | - | - |
| 0057 | coralline crust |  | 38.50 | 40.50 | 46.50 | 47.00 | 36.50 | 48.50 | 40.50 | 45.00 | 44.00 | 52.00 |
| 1300 | filamentous red algae complex |  | 0.03 | 0.03 | 1.55 | 1.03 | 0.03 | - | 0.58 | 0.05 | - | - |
| 0059 | non-coralline crust |  | 0.08 | 0.55 | 0.10 | - | - | 0.58 | - | 0.05 | 0.03 | 0.03 |

## Sampling code: 6 = Coverage Based on \# of Contact Points

|  |  | Survey: | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Species Code |  | Survey Date: Sampling | 13-Oct-76 | 6-Jan-77 | 8-Jun-77 | 16-Nov-77 | 24-Mar-78 | 31-May-78 | 6-Jul-78 | 21-Sep-78 | 15-Nov-78 | 30-Jan-79 | 30-Mar-79 | 30-May-79 | 27-Jul-79 | 21-Sep-79 | 26-Nov-79 | 28-Jan-80 | 31-Mar-80 |
| (spcode) | Species | Code |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima | 6 | - | - | - | 0.50 | - | - | - | - | - | - | - | 0.50 |  |  |  |  | - |
| 0265 | Anthopleura xanthogrammica | 6 | - | 0.53 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 0773 | Balanus/Tetracila spp. | 6 | - | - | - | - | - | - | - | - | - |  | - | - | - | - | - | - | - |
| 0683 | Dendropoma spp. | 6 | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| 0735 | Phragmatopoma californica | 6 | - | - | - | - | - | - | - | - | - | - | - | 0.50 | - | - | 0.50 | - |  |
| 0492 | Porifera (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | . | - | - |
| 0615 | Serpulidae | 6 | 0.50 | $\checkmark$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0479 | Styela spp. | 6 |  | 0.03 | - | 0.03 | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0480 | tunicates, compound/social | 6 | - | - | - | - | - | 2.00 | - | - | - | - | - | - | - | - | 0.50 | - | - |

# Sampling code: $6=$ Coverage Based on \# of Cc 



## Subtidal Line Contact - Survey Invertebrate Ab



## Subtidal Line Contact - Survey Invertebrate Ab

## Sampling code: $6=$ Coverage Based on \# of Cc

\section*{Code <br> | (spcode) | Species |
| :---: | :--- |
| 0264 Anthopleura elegantissima |  |}



264 Anthopleura elegantissima
0265 Anthopleura xanthogrammic
0773 Balanus/Tetracilta spp
$\begin{array}{ll}0683 & \text { Dendropoma spp. } \\ 0735 & \text { Phragmatopoma californica }\end{array}$
0735 Phragmatopoma califor
0615 Serpulidae
0615 Serpulidae
$\begin{array}{ll}0479 & \text { Styela spp. } \\ 0507 & \text { bryozoa (encrusting) }\end{array}$
$\begin{array}{ll}0480 & \text { bryozoa (encrussing) } \\ \text { tunicates, compound/social }\end{array}$
0.50

| Sampling code: 6 = Coverage Based on \# of Cc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 90 | 91 | 92 | 93 | 94 | 96 | 98 | 99 | 101 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
| Species |  | $\leqslant$ | 19-May-94 | 3-Aug-94 | 26-Oct-94 | 7-Mar-95 | 21-Jul-95 | 2-Apr-96 | 13-May-97 | 14-Oct-97 | 5-May-98 | 5-Oct-98 | 13-Apr-99 | 3-Jun-99 | 23-Aug-99 | 2-Nov-99 | 3-May-00 | 6-Jul-00 | 18-Sep-00 | 8-Nov-00 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0265 | Anthopleura xanthogrammica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 0735 | Phragmatopoma californica |  | - | . | - | - | - | - | 1.00 | 2.50 | 2.50 | 2.00 | 2.00 | 1.00 | - | 0.50 | - | - | 0.50 |  |
| 0492 | Porifera (encrusting) |  | - | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0615 | Serpulidae |  | - | . | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0479 | Styela spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Ab



| Species Code (spcode) | Species |  | ${ }^{130}$ | 1731 | 132 | $133$ | $134$ | ${ }^{135}$ | 136 $5-07$ | $137$ | $138$ | $139$ | 140 | $141$ | $142$ | $143$ | $144$ | $\begin{array}{r} 145 \\ 2-140 n-10 \end{array}$ | $\begin{array}{r} 146 \\ \text { 27.هuo_na } \end{array}$ | $\begin{array}{r} 147 \\ \text { 20_Ot_na } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ! | 3-Aug-05 | 17-Nov-05 | 22-Feb-06 | 22-May-06 | 17-Aug-06 | 23-Oct-06 | 5-Feb-07 | 23-May-07 | 20-Aug-07 | 15-Nov-07 | 7-Mar-08 | 10-Jun-08 | 8-Sep-08 | 19-Nov-08 | 30-Jan-09 | 2-Jun-09 | 27-Aug-09 | 20-Oct-09 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |  |  |  |
| 0265 | Anthopleura xanthogrammica |  | - | - | - | - | - | - | - |  | - | - | - | - |  | - |  |  |  |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |  |  |  |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - | - | - | - | - |  |  |  |  |  |  |  |  |
| 0735 | Phragmatopoma californica |  | - | - | 0.50 | - | - | - | - | 1.00 | - | - | - | - | - | 1.50 | - | - |  | 0.50 |
| 0492 | Porifera (encrusting) |  | - | 0.50 | - | - | - | - | - |  | - | - | - | - | 0.50 | - | 0.50 | - |  |  |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |  |  |
| 0479 | Styela spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | - |  |  |
| 0507 | bryozoa (encrusting) |  | - | 1.50 | - | - | 0.50 | - | - | - | 0.50 | - | - | - | 0.50 | 1.00 |  | - | - | - |
| 0480 | tunicates, compound/social |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |


| Subtidal Li | Contact - Survey Invertebra |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sampling code: 6 = Coverage Based on \# of Cc |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 |
| Species |  | ! | 5-Mar-10 | 27-May-10 | 27-Aug-10 | 20-Oct-10 | 14-Jan-11 | 21-Apr-11 | 16-Aug-11 | 31-Oct-11 | 30-Jan-12 | 22-May-12 | 27-Aug-12 | 27-Nov-12 | 14-Feb-13 | 22-Apr-13 | 24-Jul-13 | 25-Oct-13 | 24-Feb-14 | 2.Jun-14 |
| Code (spcode) | Species |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 0264 | Anthopleura elegantissima |  | - |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0265 | Anthopleura xanthogrammica |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0773 | Balanus/Tetracila spp. |  | - | - | 2.50 | 5.00 | - | - | 4.50 | 2.50 | - | - | - | - | - | - | 1.50 | 2.00 | - | $\sim$ |
| 0683 | Dendropoma spp. |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | . | - |  |
| 0735 | Phragmatopoma californica |  | - | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - | 0.50 |
| 0492 | Porifera (encrusting) |  | - | - | - | - | - | - | 0.50 | - | - | - | - | - | - | - | - | - | - |  |
| 0615 | Serpulidae |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0479 | Styela spp. |  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| 0507 | bryozoa (encrusting) |  | - | - | - | 0.50 | - | - | - | - | - | - | $=$ | - | - | - | - | - | - |  |
| 0480 | tunicates, compound/social |  | - | - | - | - | - | - | - | - | - | - | - | . - | - | - | - | - | - |  |

## Subtidal Line Contact - Survey Invertebrate Ab

## Sampling code: $6=$ Coverage Based on \# of Cc


Species
Code
(spcode) Species
0264 Anthopleura elegantissima
0265 Anthopleura xanthogrammica
773 Balanus/Tetracilita sp
0683
0492 Phragmatopoma californica
Porifera (encrusting)
615 Serpulidae
0507 Sryozoa (encrusting)
0480 tunicates, compound/social

