- Commonwealth of Virginia
- <u>Governor</u>
- Skip to Content
- <u>Web Policy</u>
- <u>Contact Us</u>



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Close Window

» All Chapters

- BOVA Booklet
- <u>Taxonomy</u>
- <u>Status</u>
- <u>Life</u> <u>History</u>
- <u>Occurrence</u>
- <u>County</u> <u>Abundance</u>
- <u>Distributions</u> <u>within</u> <u>Administrative</u> <u>Units</u>
- <u>Management</u> <u>Practicies</u>
- <u>Food</u> <u>Habits</u>
- <u>Habitat</u>
- <u>Environmental</u> <u>Associations</u>

- <u>References</u>
- •
- <u>All</u> <u>Chapters</u>
- •
- <u>Show This</u>
 <u>Page as</u>
 <u>Printer</u>
 <u>Friendly</u>

Taxonomy chapter for Sunfish, blackbanded (010347)

| Phylum | Chordata |
|------------------|---------------|
| Subphylum | N/A |
| Class | Osteichthyes |
| Subclass | N/A |
| Species Order | Perciformes |
| Species Suborder | N/A |
| Family | Centrarchidae |
| SubFamily | N/A |
| Genus | Enneacanthus |
| Species | chaetodon |
| Subspecies | N/A |
| Authority | (Baird, 1855) |
| ITIS-TSN | 168108 |

Taxonomy Comments

Two subspecies are recognized along the Atlantic Coast *2164,825,2176*, E. c. chaetodon and E. c. elizabethae *825*. This species previously resided in the monotypic genus Mesogonistius, and was later merged with Enneacanthus. More recently insufficient variaton for subspecific recognition has been found *4205*. Chaetodon means "hairtooth", characterizing the marine butterflyfish genus, Chaetodon, some species of which this sunfish resembles in body form and color *4205*. Sweeney (1972) deemed the differences insufficient for subspecific recognition *9286*. Chaetodon means 'hair or fine toothed', a characteristic of the marine butterflyfish genus Chaetodon, to some species of which the blackbanded sunfish bears an outward resemblance *4205*.

References for Taxonomy

- 816 Lee, D.S., Gilbert, C.R., Hocutt, C.H., McAllister, R.E., Stauffer, J.R., Jr. (Ed.), 1980, Atlas of North American Freshwater Fishes, 854 pgs., Pub. 1980-12 of N. Car. Biol. Surv, N. C. State Mus. of Nat. Hist., Raleigh, NC
- 825 Schwartz, F.J., 1961, Food, age, growth and morphology of the blackbanded sunfish, Enneacanthus c. chaetodon in Smithville Pond, Maryland, Cheseapeake Sci., Vol. 2, Num. 1-2, pg. 82-88

- 2164 Bailey, R.M., 1941, Geographic variation in Mesogonistius chaetodon (Baird), with description of a new subspecies from Georgia and Florida, Occas. Pap. Mus. Zool., 7 pgs., Univ. Michigan
- 2174 Baird, S.F., 1855, Report on the fishes observed on the coasts of New Jersey and Long Island during the summer of 1854, Ann. Rep. Smiths. Instit., Vol. 9, Num. 1854, pg. 317-337
- 2176 Breder, C.M., Jr., 1936, The reproductive habits of the North American sunfishes (family Centrarchidae), Zoologica, Vol. 21, pg. 1-48
- 4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD
- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA
- 9914 American Fisheries Society, 1991, Common and scientific names of fishes from the United States and Canada, Num. 20, 183 pgs.

Status chapter for Sunfish, blackbanded (010347)

| Status Code | Status Description |
|----------------|--|
| 201 | State Endangered |
| 211 | VA Wildlife Action Plan - Tier I - Critical Conservation Need |
| 215 | VA Wildlife Action Plan - a - On the ground management strategies/actions exist and can be feasibly implemented. |
| 605 | Heritage G5 |
| 701 | Heritage S1 |
| 999 | See Comments |

Status Comments

This species was reguarded to be of special concern by Jenkins and Musick (1980) *9286*. This relatively uncritical status was chosen because of the possibility of undetected populations occurring in the Chowan and elsewhere. The Virginia status could be changed to threatened because only one additional population has been discovered in recent extensive surveys, and this pattern of rarity holds in the North Carolina section of the Chowan *4205,9286*. This species was designated State Endangered in 1987 *4205,10120*. This is the only status species in the state that might benefit from impoundment. Stocking it in vegetated ponds should be attempted using native fish, but only if local populations can sustain the losses *10120*.

Wildlife Action Plan

DGIF Staff indicated this species is currently restricted to 5 sites in the Blackwater and Nottoway river systems. Direct conservation actions include propagation and reintroduction. Staff also indicate additional survey efforts and habitat modeling are needed. This species will be prioritized as Tier 1a.

References for Status

Ref.Id Citation

4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA
- 10120 Terwilliger, K., 1991, Virginia's endangered species: Proceedings of a symposium, 672 pgs.
- 11048 Roble, S. M., 1996, Natural Heritage resources of Virginia: Rare animal species. Natural Heritage technical report 96-11, 25 pgs., DCR, Division of Natural Heritage, Richmond, VA
- 12297 Virginia's comprehensive wildlife conservation strategy (Virginia's wildlife action plan), 2005 (Ed.), pg. Virginia Department of Game and , Richmond, Virginia pgs.
- 12464 Virginia Department of Game and Inland Fisheries, 2015, Virginia Wildlife Action Plan, Virginia Department of Game and Inland Fisheries, Richmond, VA 23228

Life history chapter for Sunfish, blackbanded (010347)

Life History

Physical description: This is a small sunfish with bold black bars. The adults are usually from 30-60 mm SL and much compressed. The profile of the head dorsum is straight to slightly convex. The eye is moderate to large and the mouth is small and terminal. The dorsal fins are strongly emarginate at the juncture of the spinous and soft portions and the pectoral is narrow, slightly obtuse-angled distally. The caudal is round-truncate in the young and juvenile, becoming truncateslightly emarginate in the adult. The soft dorsal and anal are not elongate in the breeding male. The lateral series scales number (23)25-29(32) with (4)5(6) scales above the lateral line and (9)10-12(13) scales below the lateral line. There are 16-22 circumpeduncle scales (8)10(11) dorsal spines and (10)11-12(13) dorsal rays. There as 3-4 anal spines, (10)11-12(14) anal rays and (8)9-11(12) pectoral rays. The body groung color is opalescent white with brassy sheens and the dorsum is medium olive-brown except for the bars. The iris is orange-copper and the scales on the upper half body are veriegated olive-brown. The opercular spot and lateral bars, including the fin components, are black. The pelvic spine and leading pelvic ray is orange-copper. The third interspinous membrane of the dorsal fin has a pale copper sheen. The median fin tessellstions are olive-brown *4205*. Reproduction: The breeding season is from early Early May to late June in water 21-28 degrees C *4205*. The incubation period is 2 days *835,1230,2176*. During breeding the male rushes the female, the male quivers and spreads the pectoral fins. The male returns to the nest and repeats. Finally the male and female return to the nest, side by side, female reclines to side placing abdomen close to male, egg and moult are shed *2176*. The nests vary from small dish shaped depressions formed in the substrate beneath vegetation, to hollows made in plants *9286*. Behavior: Breeding and nesting behavior is found in the literature *2160*. The male defends the nest area *835,1230,2176*. Dispersion is non-random *2160* and they are nocturnal *2166*. Their range is from New Jersey to Florida, below the fall line *1178,1230,2161,825*. The nest site is on the substrate beneath vegetation *835,2166,2176,4205*. Parental care is given by the male who guards the young until they are free swimming *2176*. Origin: This species is native and quite localized in Virginia *835,2154, 2161,2164*. The diet of this species encompasses an array of small invertebrates associated with aquatic macrophytes *9286*. Population parameters: Adults in Maryland survive 3-4 years *4205*. In Delaware, the females grew over 200 mm larger than the males because the males only reached age 1, whereas the females often survived into age-class 2 and one reached age 3. Scales of 13 Virginia adults indicated that both sexes reached age 3 *9286*.

No Life History Comments

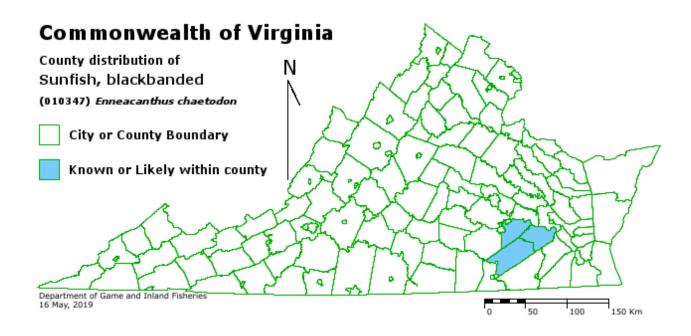
References for Life History

- 835 Cooper, E.L., 1983, The Fishes of Pennsylvania, Penn. State Univ. Press, University Park
- 1178 Carlander, K.D., 1977, Handbook of freshwater fishery biology, Vol. 2, 431 pgs., Iowa State Univ. Press, Ames
- 1230 Wang, J.C.S., Kernehan, R.J., 1979, Fishes of the Delaware estuaries, 410 pgs., Ecological Analysts, Inc., Towson, Md
- 2154 Koster, W.J., 1937, The food of sculpins (Cottidae) in central New York, Trans. Amer. Fish. Soc., Vol. 66, Num. 1936, pg. 372-382

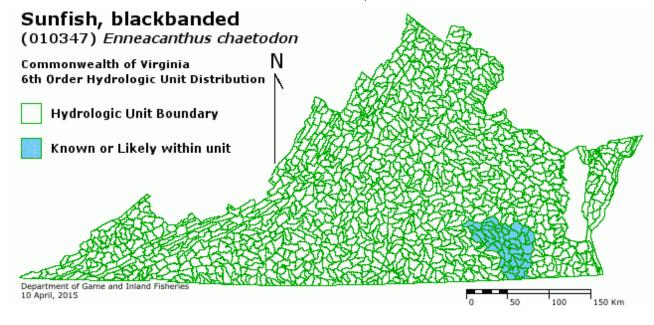
- 2160 Innes, W.T., 1951, Black-banded sunfish aquarium highlights, 519 pgs., Innes Publ. Co., Philadelphia
- 2161 Jenkins, R.E., Revelle, L.A., Zorach, T., 1975, Records of the black-banded sunfish, Enneacanthus chaetodon, and comments on the south-eastern Virginia freshwater ichthyofauna, Va. J. Sci., Vol. 26, Num. 3, pg. 128-134
- 2164 Bailey, R.M., 1941, Geographic variation in Mesogonistius chaetodon (Baird), with description of a new subspecies from Georgia and Florida, Occas. Pap. Mus. Zool., 7 pgs., Univ. Michigan
- 2166 Abbott, C.C., 1883, On the habits of certain sunfish, Amer. Natr., Vol. 17, Num. 2, pg. 1254-1257
- 2176 Breder, C.M., Jr., 1936, The reproductive habits of the North American sunfishes (family Centrarchidae), Zoologica, Vol. 21, pg. 1-48
- 4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD
- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA

Occurence chapter for Sunfish, blackbanded (010347)

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County Occurrences

| County | County Name | General Occurrence | Resident Occurrence | Seasonal Occurrence |
|--------|---------------|--------------------|----------------------------|---------------------|
| 149 | Prince George | 1 - Known | 1 - Known | |
| 181 | Surry | 1 - Known | 1 - Known | |
| 183 | Sussex | 1 - Known | 1 - Known | |

General Occurrence Comments: In Virginia, this species is known only from, and extremely localized in, the Blackwater and Nottoway systems of the Chowan drainage *9286*. This species was found in the Chowan River Drainage *2165* in Blackwater Swamp, a Blackwater River tributary, Prince George County, and Game Refuge Lake, and the Nottoway River watershed, Sussex County. They were recently reported in Dicks Branch, directly below Game Refuge Lake, Sussex County.

Resident Occurrence Comments: In Virginia, this species known only from, and extremely localized in the Blackwater and Nottoway systems of the Chowan drainage *9286*. In the Chowan River Drainage they are known from Blackwater Swamp, a Blackwater River Tributary, Prince George County, and Game Refuge Lake, Nottoway River watershed, Sussex County. They were recently reported in Dicks Branch, directly below Game Refuge Lake, Sussex County *2165*.

References for County Occurrence

Ref.Id Citation

- 2165 Musick, J.A., Linzey, D.W. (Ed.), 1979, Blackbanded sunfish from the Proceedings of the Symposium on Endangered and Threatened Plants and Animals of Virginia, pg. 349, Ext. Div., VA Tech, Blacksburg, VA
- 4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD
- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA

USGS National 6th Order Watershed Occurrences

5/16/2019

| HU6 | 6th Order Watershed Name |
|------------------|-----------------------------------|
| CL03 | Somerton Creek-March Swamp |
| CU25 | Stony Creek-Southwest Swamp |
| CU26 | Hatcher Run |
| CU27 | Gravelly Run |
| CU28 | Rowanty Creek |
| CU29 | Moores Swamp-Jones Hole Swamp |
| CU30 | Nottoway River-Cabin Point Swamp |
| CU31 | Nebletts Mill Run-Joseph Swamp |
| CU32 | Nottoway River-Austin Branch |
| CU33 | Hunting Quarter Swamp |
| CU36 | Nottoway River-Parker Run |
| CU43 | Nottoway River-Buckhorn Swamp |
| CU44 | Assamoosick Swamp-Pigeon Swamp |
| CU45 | Seacorrie Swamp |
| CU46 | Assamoosick Swamp-Mill Run |
| CU47 | Mill Swamp-Darden Pond |
| CU48 | Nottoway River-Courtland |
| CU49 | Nottoway Swamp |
| CU50 | Mill Creek |
| CU51 | Nottoway River-Round Gut |
| CU52 | Second Swamp |
| CU53 | Blackwater Swamp |
| CU54 | Warwick Swamp |
| CU55 | Blackwater River-Spring Branch |
| CU56 | Otterdam Swamp |
| CU57 | Blackwater River-Coppahaunk Swamp |
| CU58 | Cypress Swamp-Johnchecohunk Swamp |
| CU59 | Blackwater River-Terrapin Swamp |
| CU60 | Mill Swamp-Moores Swamp |
| CU61 | Rattlesnake Swamp |
| CU62 | Blackwater River-Antioch Swamp |
| CU63 | Seacock Swamp-Reddy Hole Branch |
| CU64 | Brantley Swamp |
| factor at set of | |

| CU65 | Seacock Swamp-Round Hill Swamp |
|------|--|
| CU66 | Blackwater River-Corrowaugh Swamp |
| CU67 | Black Creek-Cattail Swamp |
| CU68 | Blackwater River-Cypress Swamp |
| CU69 | Kingsale Swamp |
| CU70 | Blackwater River-Union Camp Holding Pond |

6th Order Hydrologic Unit Comments: 6th order hydrologic unit distribution reviewed in year 2009 by Virginia Department of Game and Inland Fisheries Taxonomic Advisory Committees.

References for 6th Order Hydrologic Unit

Ref.Id Citation

12325 VDGIF, 2009, Tiered Species Distributions by 6th Order Watershed, as Reviewed by VDGIF's Taxonomic Advisory Committees

Occurence chapter forSunfish, blackbanded (010347)

| County | County Name | General Occurrence | Resident Occurrence | Seasonal Occurrence |
|--------|---------------|--------------------|----------------------------|---------------------|
| 149 | Prince George | 1 - Known | 1 - Known | |
| 181 | Surry | 1 - Known | 1 - Known | |
| 183 | Sussex | 1 - Known | 1 - Known | |

General Occurrence Comments: In Virginia, this species is known only from, and extremely localized in, the Blackwater and Nottoway systems of the Chowan drainage *9286*. This species was found in the Chowan River Drainage *2165* in Blackwater Swamp, a Blackwater River tributary, Prince George County, and Game Refuge Lake, and the Nottoway River watershed, Sussex County. They were recently reported in Dicks Branch, directly below Game Refuge Lake, Sussex County.

Resident Occurrence Comments: In Virginia, this species known only from, and extremely localized in the Blackwater and Nottoway systems of the Chowan drainage *9286*. In the Chowan River Drainage they are known from Blackwater Swamp, a Blackwater River Tributary, Prince George County, and Game Refuge Lake, Nottoway River watershed, Sussex County. They were recently reported in Dicks Branch, directly below Game Refuge Lake, Sussex County *2165*.

References for County Occurrence

Ref.Id Citation

- 2165 Musick, J.A., Linzey, D.W. (Ed.), 1979, Blackbanded sunfish from the Proceedings of the Symposium on Endangered and Threatened Plants and Animals of Virginia, pg. 349, Ext. Div., VA Tech, Blacksburg, VA
- 4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD
- 9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA

USGS National 6th Order Watershed Occurrences

5/16/2019

| All | Chapters |
|-----|----------|
|-----|----------|

| 19 | | | |
|------|-----------------------------------|--|--|
| HU6 | 6th Order Watershed Name | | |
| CL03 | Somerton Creek-March Swamp | | |
| CU25 | Stony Creek-Southwest Swamp | | |
| CU26 | Hatcher Run | | |
| CU27 | Gravelly Run | | |
| CU28 | Rowanty Creek | | |
| CU29 | Moores Swamp-Jones Hole Swamp | | |
| CU30 | Nottoway River-Cabin Point Swamp | | |
| CU31 | Nebletts Mill Run-Joseph Swamp | | |
| CU32 | Nottoway River-Austin Branch | | |
| CU33 | Hunting Quarter Swamp | | |
| CU36 | Nottoway River-Parker Run | | |
| CU43 | Nottoway River-Buckhorn Swamp | | |
| CU44 | Assamoosick Swamp-Pigeon Swamp | | |
| CU45 | Seacorrie Swamp | | |
| CU46 | Assamoosick Swamp-Mill Run | | |
| CU47 | Mill Swamp-Darden Pond | | |
| CU48 | Nottoway River-Courtland | | |
| CU49 | Nottoway Swamp | | |
| CU50 | Mill Creek | | |
| CU51 | Nottoway River-Round Gut | | |
| CU52 | Second Swamp | | |
| CU53 | Blackwater Swamp | | |
| CU54 | Warwick Swamp | | |
| CU55 | Blackwater River-Spring Branch | | |
| CU56 | Otterdam Swamp | | |
| CU57 | Blackwater River-Coppahaunk Swamp | | |
| CU58 | Cypress Swamp-Johnchecohunk Swamp | | |
| CU59 | Blackwater River-Terrapin Swamp | | |
| CU60 | Mill Swamp-Moores Swamp | | |
| CU61 | Rattlesnake Swamp | | |
| CU62 | Blackwater River-Antioch Swamp | | |
| CU63 | Seacock Swamp-Reddy Hole Branch | | |
| CU64 | Brantley Swamp | | |

| CU65 | Seacock Swamp-Round Hill Swamp |
|------|--|
| CU66 | Blackwater River-Corrowaugh Swamp |
| CU67 | Black Creek-Cattail Swamp |
| CU68 | Blackwater River-Cypress Swamp |
| CU69 | Kingsale Swamp |
| CU70 | Blackwater River-Union Camp Holding Pond |

6th Order Hydrologic Unit Comments: 6th order hydrologic unit distribution reviewed in year 2009 by Virginia Department of Game and Inland Fisheries Taxonomic Advisory Committees.

References for 6th Order Hydrologic Unit

Ref.Id Citation

12325 VDGIF, 2009, Tiered Species Distributions by 6th Order Watershed, as Reviewed by VDGIF's Taxonomic Advisory Committees

County abundance chapter for Sunfish, blackbanded (010347)

County Abundance

No Records found.

Comments concerning Relative Abundance within City/County

No Comments Available.

References for Relative Abundance within City/County

No References found for Relative Abundance within City/Countys.

Average Annual Population for Last 5 years within City/County

No Records found.

Comments concerning Annual Population within City/County No Comments Available.

References for Annual Population within City/County

No References found for Annual Population within City/Countys.

Average Annual Harvest for Last 5 years within City/County

No Records found.

Comments concerning Annual Harvest within City/County

No Comments Available.

References for Annual Harvest within City/County

No References found for Annual Harvest within City/Countys.

Distributions with in administrative units chapter for Sunfish, blackbanded (010347)

USFWS Refuges Code(s)

No USFWS Refuge listed.

References for USFWS Refuge

No References found for USFWS Refuges.

NPS Park and Recreation Areas

No NPS Park and Recreation Area listed.

References for NPS Park and Recreation Area

No References found for NPS Park and Recreation Areas.

USFS Ranger Districts

No USFS Ranger District listed.

References for USFS Ranger District

No References found for USFS Ranger Districts.

VDGIF Wildlife Management Areas (VWMA)

No VDGIF Wildlife Management Area listed.

References for VDGIF Wildlife Management Area

No References found for VDGIF Wildlife Management Areas.

Physiographic Provinces

Id Physiographic Province Name

1 Coastal Plain

References for Physiographic Province

Ref.Id Citation

4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

Administrative Area Comments

Site Distribution Comments

General Distribution Comments

The blackbanded sunfish is sporadically distributed in the Coastal Plain from New Jersy to Florida *9286*.

Management practices chapter for Sunfish, blackbanded (010347)

Beneficial Management Practices

| Code | Description |
|------|---------------------------|
| 416 | Controlling sedimentation |

Existing Management Practices

| Code | Description |
|------|--|
| 999 | Other management practices [specified in comments] |

Management Practice Comments

This is a secretive sunfish, interesting to aquarists, but too small to be of use to anglers. The restricted habitat and distribution limits management possibilities *835,2154,2161*.

References for Management Practices

Ref.Id Citation

- 835 Cooper, E.L., 1983, The Fishes of Pennsylvania, Penn. State Univ. Press, University Park
- 2154 Koster, W.J., 1937, The food of sculpins (Cottidae) in central New York, Trans. Amer. Fish. Soc., Vol. 66, Num. 1936, pg. 372-382
- 2161 Jenkins, R.E., Revelle, L.A., Zorach, T., 1975, Records of the black-banded sunfish, Enneacanthus chaetodon, and comments on the south-eastern Virginia freshwater ichthyofauna, Va. J. Sci., Vol. 26, Num. 3, pg. 128-134
- 2165 Musick, J.A., Linzey, D.W. (Ed.), 1979, Blackbanded sunfish from the Proceedings of the Symposium on Endangered and Threatened Plants and Animals of Virginia, pg. 349, Ext. Div., VA Tech, Blacksburg, VA

Food habits chapter for Sunfish, blackbanded (010347)

Trophic: Omnivore

General Food Comments: Chironomid larvae is the principal food of this species *825,1178,816,4205*. The diet encompasses an array of small invertebrates associated with aquatic macrophytes *4205*. They are primarily a benthic feeder, and amphipods accounted for the greatest volume in the guts analized. Chironomids (summer) and caddisfly larvae (fall) were the predominant food items *825*.

Adults Food Comments: The adults consume mostly midge larvae, with some aquatic insects and zooplankton *2162,825,2166,4205*.

Juveniles Food Comments: The juveniles consume mostly zooplankton *2162,825,2166*.

Food Utilized By Life Stage

| Life Stage | Food | Part |
|------------|----------------------------------|-----------------|
| A-Adult | 9999-See Comments on Food Habits | S-See Comments |
| G-General | 0200-Blue-green Algae | X-Not Specified |
| G-General | 0900-PLANTS | A-Roots |

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| /16/2019 | |
|----------------------------------|--|
| 0900-PLANTS | K-Leaves/Needles |
| 4000-ANIMALS | T-Larva stage |
| 4000-ANIMALS | X-Not Specified |
| 6600-Crustaceans | T-Larva stage |
| 6630-Copecods | T-Larva stage |
| 6700-Insects | T-Larva stage |
| 6700-Insects | X-Not Specified |
| 6750-Odonata | T-Larva stage |
| 6930-Trichoptera | T-Larva stage |
| 6950-Diptera | T-Larva stage |
| 9999-See Comments on Food Habits | S-See Comments |
| 4000-ANIMALS | T-Larva stage |
| 6600-Crustaceans | T-Larva stage |
| 6630-Copecods | T-Larva stage |
| 9999-See Comments on Food Habits | S-See Comments |
| 9999-See Comments on Food Habits | S-See Comments |
| | 4000-ANIMALS 4000-ANIMALS 6600-Crustaceans 6630-Copecods 6700-Insects 6700-Insects 6750-Odonata 6930-Trichoptera 6950-Diptera 9999-See Comments on Food Habits 4000-ANIMALS 6600-Crustaceans 6630-Copecods |

References for Food Habits

Ref.Id Citation

- 816 Lee, D.S., Gilbert, C.R., Hocutt, C.H., McAllister, R.E., Stauffer, J.R., Jr. (Ed.), 1980, Atlas of North American Freshwater Fishes, 854 pgs., Pub. 1980-12 of N. Car. Biol. Surv, N. C. State Mus. of Nat. Hist., Raleigh, NC
- 825 Schwartz, F.J., 1961, Food, age, growth and morphology of the blackbanded sunfish, Enneacanthus c. chaetodon in Smithville Pond, Maryland, Cheseapeake Sci., Vol. 2, Num. 1-2, pg. 82-88
- 1178 Carlander, K.D., 1977, Handbook of freshwater fishery biology, Vol. 2, 431 pgs., Iowa State Univ. Press, Ames
- 2162 Reid, G.K., Jr., 1950, Notes on the Centrarchid fish Mesogonistius chaetodon elizabethae in peninsular Florida, Copeia, Vol. 1950, Num. 3, pg. 239-240
- 2166 Abbott, C.C., 1883, On the habits of certain sunfish, Amer. Natr., Vol. 17, Num. 2, pg. 1254-1257
- 4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

Habitat chapter for Sunfish, blackbanded (010347)

Habitat: Aquatic

References for Habitat

- 825 Schwartz, F.J., 1961, Food, age, growth and morphology of the blackbanded sunfish, Enneacanthus c. chaetodon in Smithville Pond, Maryland, Cheseapeake Sci., Vol. 2, Num. 1-2, pg. 82-88
- 2154 Koster, W.J., 1937, The food of sculpins (Cottidae) in central New York, Trans. Amer. Fish. Soc., Vol. 66, Num. 1936, pg. 372-382

- 2160 Innes, W.T., 1951, Black-banded sunfish aquarium highlights, 519 pgs., Innes Publ. Co., Philadelphia
- 2161 Jenkins, R.E., Revelle, L.A., Zorach, T., 1975, Records of the black-banded sunfish, Enneacanthus chaetodon, and comments on the south-eastern Virginia freshwater ichthyofauna, Va. J. Sci., Vol. 26, Num. 3, pg. 128-134
- 2164 Bailey, R.M., 1941, Geographic variation in Mesogonistius chaetodon (Baird), with description of a new subspecies from Georgia and Florida, Occas. Pap. Mus. Zool., 7 pgs., Univ. Michigan
- 2165 Musick, J.A., Linzey, D.W. (Ed.), 1979, Blackbanded sunfish from the Proceedings of the Symposium on Endangered and Threatened Plants and Animals of Virginia, pg. 349, Ext. Div., VA Tech, Blacksburg, VA
- 2166 Abbott, C.C., 1883, On the habits of certain sunfish, Amer. Natr., Vol. 17, Num. 2, pg. 1254-1257

Habitat Forest Size Class

No Habitat Forest Size found.

References for Habitat Forest Size

No References found for Habitat Forest Sizes.

Habitat Society of American Foresters (SAF) No Habitat SAF found.

References for Habitat SAF References

No References found for Habitat SAF Referencess.

| Code | Land Use |
|------|---------------------|
| 50 | Water |
| 51 | Streams and Canals |
| 52 | Lakes |
| 53 | Reservoirs |
| 60 | Wetland |
| 62 | Nonforested Wetland |

References for Land Use

Ref.Id Citation

Habitat Land Use

- 816 Lee, D.S., Gilbert, C.R., Hocutt, C.H., McAllister, R.E., Stauffer, J.R., Jr. (Ed.), 1980, Atlas of North American Freshwater Fishes, 854 pgs., Pub. 1980-12 of N. Car. Biol. Surv, N. C. State Mus. of Nat. Hist., Raleigh, NC
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| Major Code | Minor Code | Modifier Code | Specific Code |
|-----------------------------------|--|-----------------------------|------------------------|
| L Lacustrine | EM Emergent | A - Nontidal, temporary | 0 - Fresh |
| L2 - Lacustrine, littoral | AB2 - Aquatic bed, submergent vascular | A - Nontidal, temporary | 0 - Fresh |
| P0 - Palustrine | AB1 - Aquatic bed, submergent algal | A - Nontidal, temporary | H - Diked/impounded |
| P0 - Palustrine | AB1 - Aquatic bed, submergent algal | T - Tidal, semipermanent | 0 - Fresh |
| P0 - Palustrine | AB2 - Aquatic bed, submergent vascular | A - Nontidal, temporary | H - Diked/impounded |
| P0 - Palustrine | AB2 - Aquatic bed, submergent vascular | T - Tidal, semipermanent | 0 - Fresh |
| P0 - Palustrine | AB4 - Aquatic bed, floating-leaved [rooted] | T - Tidal, semipermanent | 0 - Fresh |
| P0 - Palustrine | EM1 - Emergent, persistent | T - Tidal, semipermanent | 0 - Fresh |
| R2 - Riverine, lower perennial | AB2 - Aquatic bed, submergent vascular | A - Nontidal, temporary | 0 - Fresh |
| R3 - Riverine, upper perennial | OW0 - Open water | A - Nontidal, temporary | 0 - Fresh |

Habitat USFWS National Wetland Inventory (NWI)

References for USFWS National Wetland Inventory (NWI)

- 816 Lee, D.S., Gilbert, C.R., Hocutt, C.H., McAllister, R.E., Stauffer, J.R., Jr. (Ed.), 1980, Atlas of North American Freshwater Fishes, 854 pgs., Pub. 1980-12 of N. Car. Biol. Surv, N. C. State Mus. of Nat. Hist., Raleigh, NC
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Habitat Potential Natural Vegetation (PNV)

| Code | Potential Natural Vegetation | |
|------|------------------------------|--|
| 101 | 101 Oak-Hickory-Pine Forest | |

References for Potential Natural Vegetation (PNV)

Ref.Id Citation

4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

Habitat Association: They are found in swampy, acid water of ponds and streams of the Atlantic Coastal Plain *2154,2160,2161,825,2166,2164*. Throughout its range it is largely restricted to quiet, shallow, heavily vegetated, non-turbid, darkly stained, acidic waters of streams, margins of rivers, ponds, and lakes *2161*. It is an inhabitant of vegetated pools of small to large streams and ponds. Virginia occurrences include two small impoundments and their immediate outlets, and a swamp, both of which have in common lush beds of aquatic macrophytes *4205*. The sunfish is weakly associated with acidic pH 4.1-6.6, dystrophis habits in New Jersey. In New Jersyey and Maryland, this species is found in neutral and slightly alkaline situations, and reproduce in neutral water *9286*. The pH at the two Virginia sites was 6.4 and 6.6 *9286*.

Animal or Plant Association:

Animal or Plant Comments They are closely associated with lush beds of submersed aquatic plants *9286*.

References for Animal or Plant Association

No References found for Animal or Plant Associations.

USFWS Habitat Evaluation Procedures

No USFWS Habitat Evaluation Procedures Found

References for USFWS Habitat Evaluation Procedures

No References found for USFWS Habitat Evaluation Proceduress.

Environmental associations chapter for Sunfish, blackbanded (010347)

| Lifestage | Environmental Association |
|----------------|------------------------------------|
| Breeding Adult | 00040C - Water pH: Between 6.5-8.5 |
| General | 00040A - Water pH: Less than 5.0 |
| General | 00040B - Water pH: Between 5.0-6.5 |
| General | 00040C - Water pH: Between 6.5-8.5 |
| | |

Environmental Association

5/16/2019

| General | 00040S - Water pH: Specified in Comments |
|---------|---|
| General | 00050A - Turbidity: Clear water |
| General | 00050S - Turbidity: Specified in Comments |
| General | 00110A - Bottom Type [Aquatic]: Mud or silt |
| General | 00110B - Bottom Type [Aquatic]: Sand |
| General | 00110H - Bottom Type [Aquatic]: Organic debris |
| General | 00110I - Bottom Type [Aquatic]: Rooted aquatic vegetation |
| General | 00110S - Bottom Type [Aquatic]: Specified in Comments |
| General | 00130S - Aquatic Vegetation [specified type]: Specified in comments |
| General | 00140B - Density of Aquatic Vegetation: Moderate |
| General | 00140C - Density of Aquatic Vegetation: High |
| General | 00140S - Density of Aquatic Vegetation: Specified in comments |
| General | 00150A - Gradient: Low |
| General | 00190A - Aquatic Habitat Zonation: Shallows with emergent vegetation [lit |
| General | 00260A - Alkalinity: Less than 30 ppm/CaCO3 |
| General | 00290A - Water Depth Preference: Less than 1 ft. |
| General | 00290B - Water Depth Preference: 1-5 ft. |
| General | 00290C - Water Depth Preference: 5-10 ft. |

Environmental Association General Comments:

They are found in acidic water with the pH unknown *816*. They are largely restricted to quiet, shallow, heavily vegetated, non-turbid, darkly stained, acidic waters of streams, margins of rivers, ponds and lakes. The apparent absence in some lakes coincided with sparseness or lack of macrophytes *2161*. It thrives in low pH waters among dense vegetative cover over an undefinable bottom of organic ooze, sand or peat. They are found in brown colored, acid waters (pH 6.0) where extensive vegetative growth covers the pond, dominated by filamentous algae, spatterdock, and milfoil *PML 62*. It is a denizen of thickly vegetated pools of small to large streams and ponds. Virginia record sites include two small impoundments and their immediate outlets, and a swamp. They are weakly associated with acidic, dystrophic habitats in New Jersey *4205*.

Environmental Association Comments for Breeding Adults:

This species breeds in water 21-28 degrees C beneath vegetation and in hollows made in plants *4205*. In New Jersey and Maryland, they have been reported breeding in neutral water *9286*.

References for Environmental Association

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References chapter for Sunfish, blackbanded (010347)

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- 1178 Carlander, K.D., 1977, Handbook of freshwater fishery biology, Vol. 2, 431 pgs., Iowa State Univ. Press, Ames
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- 12297 Virginia's comprehensive wildlife conservation strategy (Virginia's wildlife action plan), 2005 (Ed.), pg. Virginia Department of Game and , Richmond, Virginia pgs.
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