Ecoregions of Idaho

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources; they are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance (Bryce and others, 1999). These general purpose regions are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographical areas (Omernik and others, 2000).

The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of the spatial patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity (Wiken, 1986; Omernik, 1987, 1995). These phenomena include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology.

The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. A Roman numeral hierarchical scheme has been adopted for different levels of ecological regions. Level I is the coarsest level, dividing North America into 15 ecological regions. Level II divides the continent into 52 regions (Commission for Environmental Cooperation Working Group, 1997). At level III, the continental United States contains 104 ecoregions and the conterminous United States has 84 ecoregions (United States Environmental Protection Agency [USEPA], 2000). Level IV is a further subdivision of level III ecoregions. Explanations of the methods used to define the USEPA's ecoregions are given in Omernik (1995), Omernik and others (2000), Griffith and others (1994), and Gallant and others (1989).

Idaho is made up of semiarid shrub- and grass-covered plains, irrigated agricultural valleys, volcanic plateaus, forested mountains, woodland- and shrubland-covered hills, glaciated peaks, lava fields, and wetlands. Ecological diversity is enormous. There are 10 level III ecoregions and 71 level IV ecoregions in Idaho and many continue into ecologically similar parts of adjacent states.

The level III and IV ecoregion map on this poster was compiled at a scale of 1:250,000 and depicts revisions and subdivisions of earlier level III ecoregions that were originally compiled at a smaller scale (USEPA, 2000; Omernik, 1987). This poster is part of a collaborative project primarily between USEPA Region X, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Idaho Division of Environmental Quality (IDEQ), United States Department of Agriculture–Forest Service (USFS), United States Department of Agriculture–Natural Resources Conservation Service (NRCS), United States Department of the Interior–Bureau of Land Management (BLM), and United States Department of the Interior–Geological Survey (USGS)–Earth Resources Observation Systems (EROS) Data Center.

The project is associated with an interagency effort to develop a common framework of ecological regions. Reaching that objective requires recognition of the differences in the conceptual approaches and mapping methodologies applied to develop the most common ecoregion-type frameworks, including those developed by the USFS (Bailey and others, 1994), the USEPA (Omernik, 1987, 1995), and the NRCS (U.S. Department of Agriculture–Soil Conservation Service, 1981). As each of these frameworks is further refined, their differences are becoming less discernible. Regional collaborative projects such as this one in Idaho, where agreement has been reached among multiple resource management agencies, are a step toward attaining consensus and consistency in ecoregion frameworks for the entire nation.

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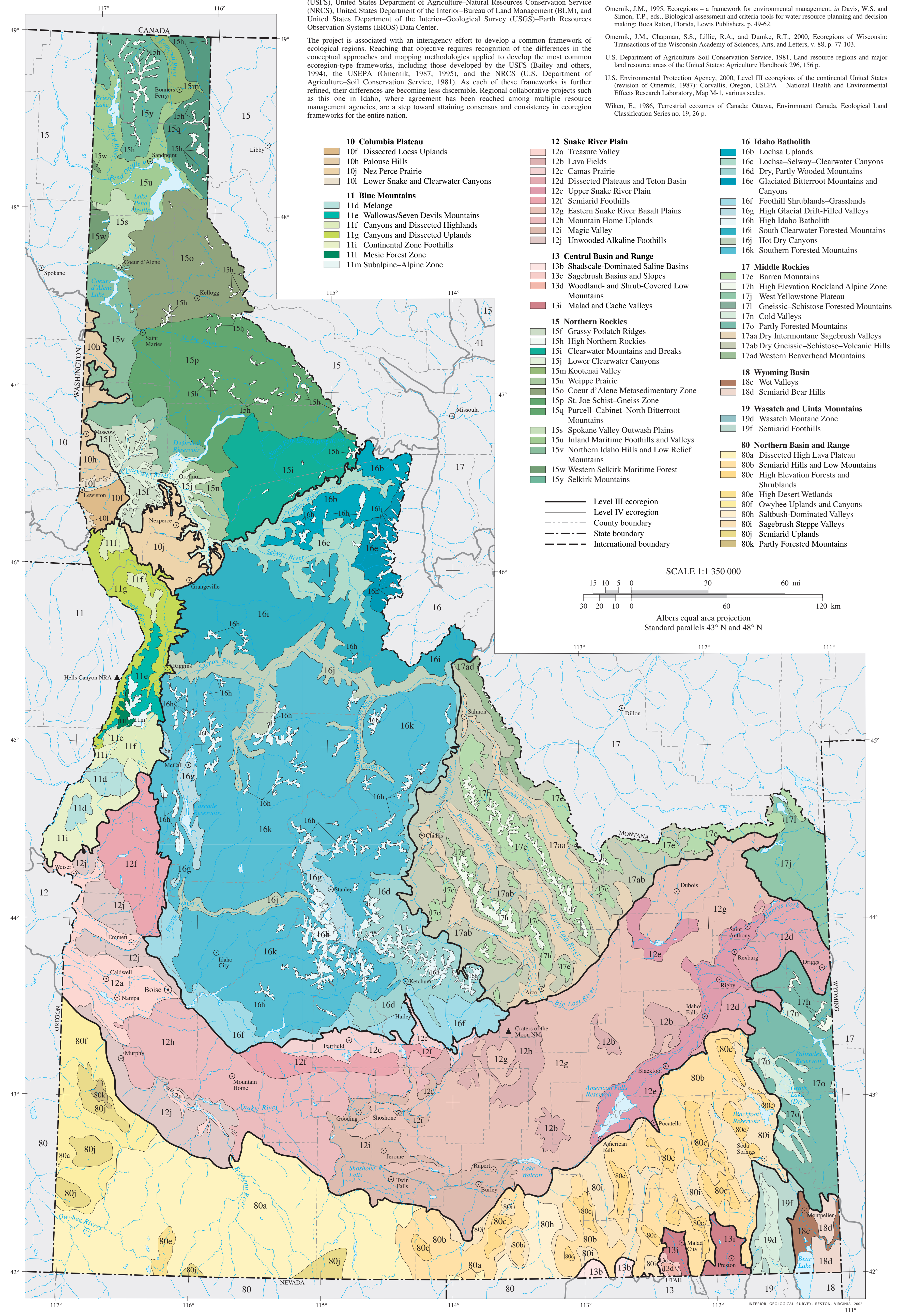


10 Columbia Plateau
- 10f Dissected Loess Uplands
- 10h Palouse Hills
- 10j Nez Perce Prairie
- 10l Lower Snake and Clearwater Canyons

11 Blue Mountains
- 11d Melange
- 11e Wallowas/Seven Devils Mountains
- 11f Canyons and Dissected Highlands
- 11g Canyons and Dissected Uplands
- 11i Continental Zone Foothills
- 11l Mesic Forest Zone
- 11m Subalpine–Alpine Zone

12 Snake River Plain
- 12a Treasure Valley
- 12b Lava Fields
- 12c Camas Prairie
- 12d Dissected Plateaus and Teton Basin
- 12e Upper Snake River Plain
- 12f Semiarid Foothills
- 12g Eastern Snake River Basalt Plains
- 12h Mountain Home Uplands
- 12i Magic Valley
- 12j Unwooded Alkaline Foothills

13 Central Basin and Range
- 13b Shadscale-Dominated Saline Basins
- 13c Sagebrush Basins and Slopes
- 13d Woodland- and Shrub-Covered Low Mountains
- 13i Malad and Cache Valleys

15 Northern Rockies
- 15f Grassy Potlatch Ridges
- 15h High Northern Rockies
- 15i Clearwater Mountains and Breaks
- 15j Lower Clearwater Canyons
- 15m Kootenai Valley
- 15n Weippe Prairie
- 15o Coeur d'Alene Metasedimentary Zone
- 15p St. Joe Schist–Gneiss Zone
- 15q Purcell–Cabinet–North Bitterroot Mountains
- 15s Spokane Valley Outwash Plains
- 15u Inland Maritime Foothills and Valleys
- 15v Northern Idaho Hills and Low Relief Mountains
- 15w Western Selkirk Maritime Forest
- 15y Selkirk Mountains

16 Idaho Batholith
- 16b Lochsa Uplands
- 16c Lochsa–Selway–Clearwater Canyons
- 16d Dry, Partly Wooded Mountains
- 16e Glaciated Bitterroot Mountains and Canyons
- 16f Foothill Shrublands–Grasslands
- 16g High Glacial Drift-Filled Valleys
- 16h High Idaho Batholith
- 16i South Clearwater Forested Mountains
- 16j Hot Dry Canyons
- 16k Southern Forested Mountains

17 Middle Rockies
- 17e Barren Mountains
- 17h High Elevation Rockland Alpine Zone
- 17j West Yellowstone Plateau
- 17l Gneissic–Schistose Forested Mountains
- 17n Cold Valleys
- 17o Partly Forested Mountains
- 17aa Dry Intermontane Sagebrush Valleys
- 17ab Dry Gneissic–Schistose–Volcanic Hills
- 17ad Western Beaverhead Mountains

18 Wyoming Basin
- 18c Wet Valleys
- 18d Semiarid Bear Hills

19 Wasatch and Uinta Mountains
- 19d Wasatch Montane Zone
- 19f Semiarid Foothills

80 Northern Basin and Range
- 80a Dissected High Lava Plateau
- 80b Semiarid Hills and Low Mountains
- 80c High Elevation Forests and Shrublands
- 80e High Desert Wetlands
- 80f Owyhee Uplands and Canyons
- 80h Saltbush-Dominated Valleys
- 80i Sagebrush Steppe Valleys
- 80j Semiarid Uplands
- 80k Partly Forested Mountains

- Level III ecoregion
- Level IV ecoregion
- County boundary
- State boundary
- International boundary

SCALE 1:1 350 000

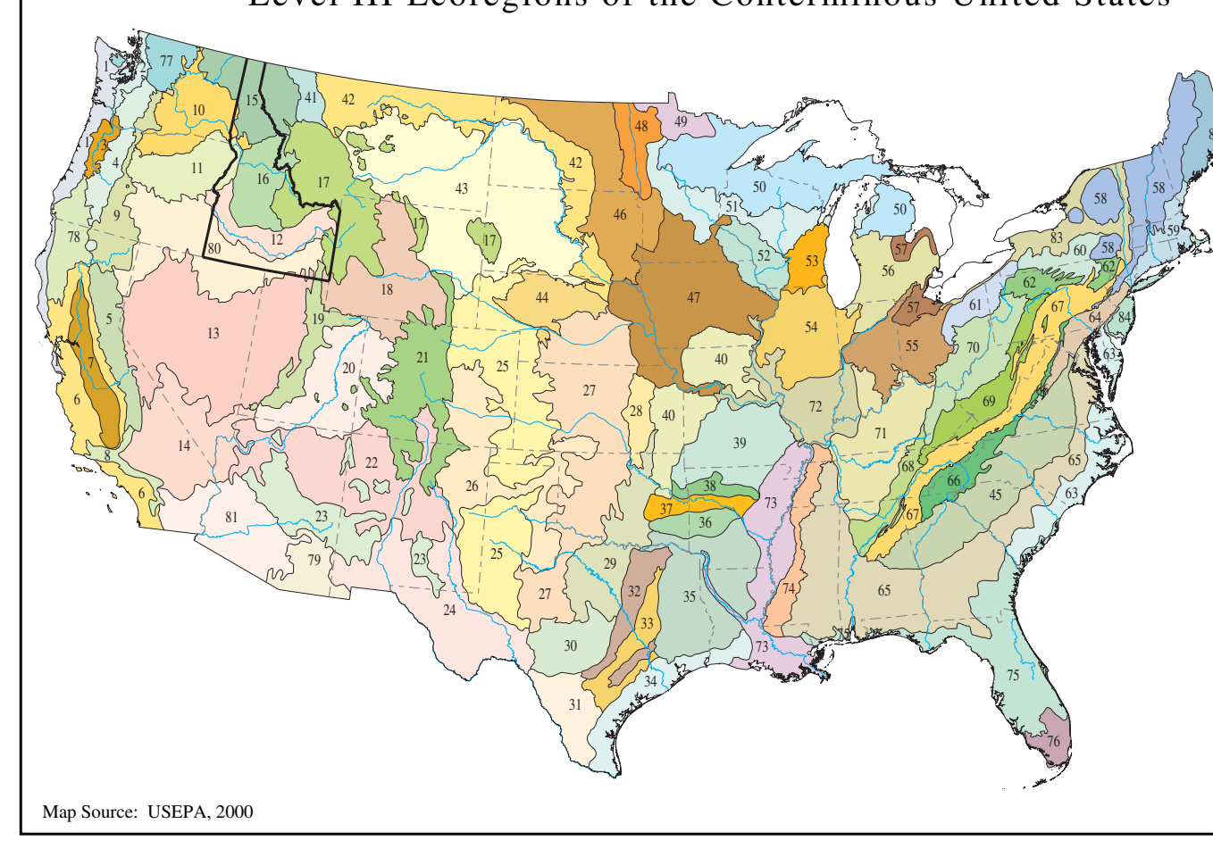
15 10 5 0 30 60 mi

30 20 10 0 60 120 km

Albers equal area projection
Standard parallels 43° N and 48° N

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—2002

Level III Ecoregions of the Conterminous United States



1 Coast Range
2 Puget Lowland
3 Willamette Valley
4 Cascades
5 Sierra Nevada
6 Southern and Central California Chaparral and Oak Woodlands
7 Central California Valley
8 Southern California Mountains
9 Eastern Cascades Slopes and Foothills
10 Columbia Plateau
11 Blue Mountains
12 Snake River Plain
13 Central Basin and Range
14 Mojave Basin and Range
15 Northern Rockies
16 Idaho Batholith
17 Middle Rockies
18 Wyoming Basin
19 Wasatch and Uinta Mountains
20 Colorado Plateaus
21 Southern Rockies
22 Arizona/New Mexico Plateau
23 Arizona/New Mexico Mountains
24 Chihuahuan Deserts
25 Western High Plains
26 Southwestern Tablelands
27 Central Great Plains
28 Flint Hills
29 Central Oklahoma/Texas Plains
30 Edwards Plateau
31 Southern Texas Plains
32 Texas Blackland Prairies
33 East Central Texas Plains
34 Western Gulf Coastal Plain
35 South Central Plains
36 Ouachita Mountains
37 Arkansas Valley
38 Boston Mountains
39 Ozark Highlands
40 Central Irregular Plains
41 Canadian Rockies
42 Northwestern Glaciated Plains
43 Northwestern Great Plains
44 Nebraska Sand Hills
45 Piedmont
46 Northern Glaciated Plains
47 Western Corn Belt Plains
48 Lake Agassiz Plain
49 Northern Minnesota Wetlands
50 Northern Lakes and Forests
51 North Central Hardwood Forests
52 Driftless Area
53 Southeastern Wisconsin Till Plains
54 Central Corn Belt Plains
55 Eastern Corn Belt Plains
56 Southern Michigan/Northern Indiana Drift Plains
57 Huron/Erie Lake Plains
58 Northeastern Highlands
59 Northeastern Coastal Zone
60 Northern Appalachian Plateau and Uplands
61 Erie Drift Plain
62 North Central Appalachians
63 Middle Atlantic Coastal Plain
64 Northern Piedmont
65 Southeastern Plains
66 Blue Ridge
67 Ridge and Valley
68 Southwestern Appalachians
69 Central Appalachians
70 Western Allegheny Plateau
71 Interior Plateau
72 Interior River Lowland
73 Mississippi Alluvial Plain
74 Mississippi Valley Loess Plains
75 Southern Coastal Plain
76 Southern Florida Coastal Plain
77 North Cascades
78 Klamath Mountains
79 Madrean Archipelago
80 Northern Basin and Range
81 Sonoran Basin and Range
82 Laurentian Plains and Hills
83 Eastern Great Lakes and Hudson Lowlands
84 Atlantic Coastal Pine Barrens

Map Source: USEPA, 2000

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10. Columbia Plateau

The rolling Nez Perce Prairie (10j) is covered in loess. Its potential natural vegetation is fescue–wheatgrass. Today, the ecoregion is dominated by extensive wheat farming.

Ecoregion 10 is an arid grassland and sagebrush steppe that is surrounded by moister, predominantly forested, mountainous ecoregions. It is underlain by thick basalt. In the east, where precipitation is greater, deep loess soils have been extensively cultivated for wheat.

10f The unforested hills and plateaus of the **Dissected Loess Uplands** ecoregion are cut by the canyons of Ecoregion 10l and are disjunct. Pure grasslands dominate lower elevations. Mountain brush grows on higher, moister sites. Grazing and farming have eliminated much of the original plant cover. Nevertheless, Ecoregion 10f is not as suited to farming as Ecoregions 10h and 10j because it has thinner soils.

10h The largely unforested, loess-covered **Palouse Hills** ecoregion abuts the Rocky Mountains and has more available moisture than other parts of Ecoregion 10. Mountain fed perennial streams occur and intermittent, loess-bottomed streams rise within Ecoregion 10h. Soils, rich in organic matter and very productive, support extensive wheat farming but are easily eroded. Dry stream channels may be tilled.

10j The **Nez Perce Prairie** is a loess-covered plateau. It is higher, cooler, less hilly, and has shallower soils than Ecoregion 10h. Idaho fescue and bluebunch wheatgrass are native. Cropland is now extensive and grows wheat, barley, peas, and hay. The headwaters of many perennial streams are impacted by agricultural land use, negatively impacting the water quality of downstream canyon reaches.

10l The **Lower Snake and Clearwater Canyons** cut through the basalts of the Columbia Plateau (10). Canyon depths exceed 1,400 feet and create drier conditions than in Ecoregions 10f or 10h; mean annual precipitation is only 12 to 25 inches. Outside of towns and transportation corridors, Ecoregion 10l's canyons provide good habitat for bighorn sheep and game birds.

13. Central Basin and Range

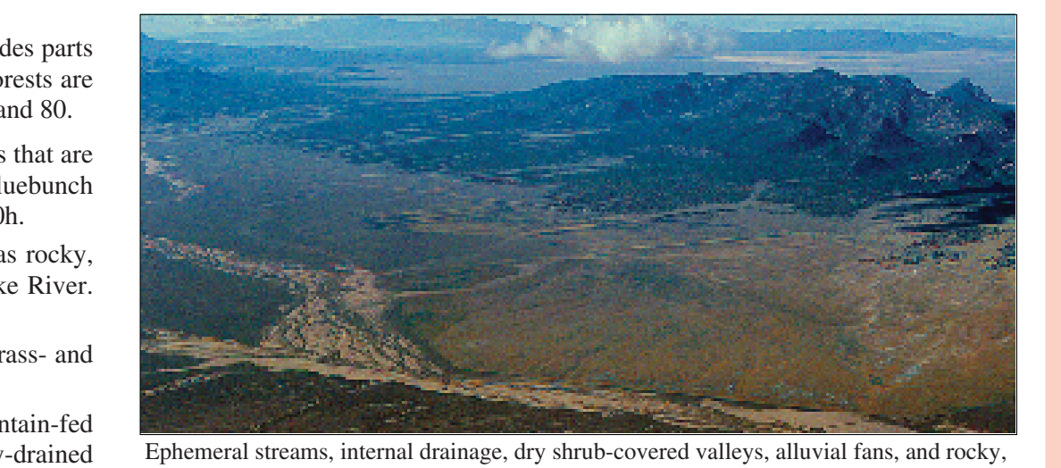
Ecoregion 13 is internally-drained and composed of north-trending, fault-block ranges and intervening, drier basins. It is vast and includes parts of Nevada, Utah, California, and Idaho. In Idaho, sagebrush grassland, saltbush–greasewood, mountain brush, and woodland occur; forests are absent unlike in the cooler, wetter, more rugged Ecoregion 19. Grazing is widespread. Cropland is less common than in Ecoregions 12 and 80.

13b The arid **Shadscale-Dominated Saline Basins** ecoregion is nearly flat, internally-drained, and has light-colored alkaline soils that are dry for long periods. Its salt- and drought-tolerant shadscale and greasewood are unlike the Wyoming big sagebrush and bluebunch wheatgrass of the less saline Ecoregion 13c. Ecoregion 13b is mostly rangeland. Irrigated farming is rarer than in Ecoregions 13i and 80h.

13c The semiarid **Sagebrush Basins and Slopes** ecoregion is not as saline, dry, or level as Ecoregions 13b or 80h and is not as rocky, rugged, or wooded as Ecoregion 80b. It is internally drained in contrast to Ecoregions 80a and 80i which drain to the Snake River. Livestock grazing is the primary land use.

13d The **Woodland- and Shrub-Covered Low Mountains** ecoregion is higher, wetter, rockier, and more rugged than nearby grass- and shrub-covered ecoregions. Shallow soils support mountain big sagebrush, mountain brush, Utah juniper, and grasses.

13i The **Malad and Cache Valleys** ecoregion is wetter, more widely farmed, and more populated than Ecoregion 13c. Mountain-fed perennial streams and canals supply water to pastureland, towns, and cropland growing hay and small grains. It is internally-drained and was inundated by Lake Bonneville unlike Ecoregion 80i. The Cache Valley has a shorter growing season than the Malad Valley.



Ephemeral streams, internal drainage, dry shrub-covered valleys, alluvial fans, and rocky, rugged, fault-block ranges are characteristic of the Central Basin and Range (13).

11. Blue Mountains

Open, dry forest is typical of sheltered canyons and higher elevations in the Blue Mountains (11) of Idaho. Stream and riparian systems are highly attractive to cattle during the heat of summer. *Photo: M. McIntyre, IDEQ*

Ecoregion 11 is a complex of mountain ranges that are lower and much more open than the neighboring Cascades (4) and Northern Rockies (15). Like the Cascades (4), but unlike the Northern Rockies (15) and the Idaho Batholith (16), the Blue Mountains (11) is mostly volcanic in origin. Only its highest ranges, particularly the Wallowa and Elkhorn mountains in Oregon, consist of intrusive rocks that rise above the dissected lava surface of the region. Much of Ecoregion 11 is grazed by cattle in contrast to Ecoregions 4 and 15.

11d The dissected mountains of the **Melange** ecoregion are mostly blanketed in Tertiary basalt but have a core of mixed metamorphic, metavolcanic, metasedimentary, and sedimentary rocks. Forests dominated by Douglas-fir, ponderosa pine, and lodgepole pine, as well as shrublands and grasslands occur. Lithology affects soil, vegetation, and the quantity and quality of surficial water. Grazing is common but logging is limited by the difficulty of reforesting droughty soils such as those that are derived from metamorphic rocks.

11e In Idaho, the **Wallowas/Seven Devils Mountains** ecoregion ranges in elevation from about 4,000 to 9,200 feet. Lowest elevations support a dry forest community. Douglas-fir and ponderosa pine forests are widespread and have a shrub understory. Streams follow fault lines, have steep gradients and have eroded deep canyons. Land uses include grazing, logging, recreation, and wildlife habitat.

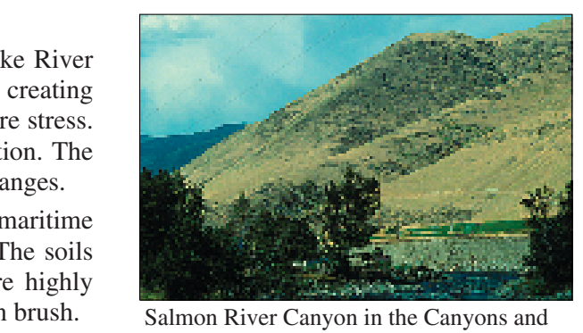
11f The **Canyons and Dissected Highlands** ecoregion includes the southern Seven Devils Mountains and pieces of the uplifted Columbia Plateau. Elevations range from 4,000 to 6,400 feet. Ecoregion 11f is lower, drier, and less maritime-influenced than the Mesic Forest Zone (11l). Douglas-fir and ponderosa pine forests are common and contrast with the grassland of the lower, drier Ecoregion 11g.

11g In the **Canyons and Dissected Uplands** ecoregion, the Snake and Salmon river systems have cut into the Columbia Plateau to depths of over 3,000 feet. Basalt and metamorphosed rocks are typically exposed in the canyon walls; the rock assemblage differs from the basalts of the Lower Snake and Clearwater Canyons (10l). The depth of the canyons and the exposed metamorphic rocks result in stony soils on canyon slopes that retain little moisture. Bluebunch wheatgrass and Sandberg's bluegrass are adapted to grow under these hot, dry conditions. Land use includes grazing and recreation in the Hells Canyon National Recreation Area.

11i The **Continental Zone Foothills** ecoregion lies between Oregon's Blue and Wallowa mountains and the northwestern Snake River Plain (12). The combined masses of the Cascade Range and the Blue and Wallowa mountains block any maritime influence, creating a continental climate. As a result, plants are subject to wide temperature ranges, high evapotranspiration, and high early-season moisture stress. The vegetation is characterized by a diverse bunchgrass and shrub community that varies according to soil depth, texture, and elevation. The shrublands provide valuable winter habitat for wildlife. Only a few perennial streams occur and originate in the surrounding mountain ranges.

11l The **Mesic Forest Zone** is found between 6,000 and 7,400 feet in the western Seven Devils Mountains. It is influenced by maritime air coming through Oregon's Columbia River Gorge. Precipitation mostly falls as snow that persists late into the spring. The soils typically retain moisture during the dry season because they often contain volcanic ash and are not rocky. As a result, forests are highly productive and diverse. Vegetation includes Douglas-fir, grand fir, ponderosa pine, subalpine fir, mountain big sagebrush, and mountain brush.

11m The **Subalpine–Alpine Zone** includes the highest areas of the Seven Devils Mountains. It begins near tree line at an elevation of 6,500 feet, where the forest cover becomes broken by alpine meadows, and continues through alpine meadowland to include the exposed rock, snowfields, and glacial ice of the highest mountain peaks. Cold soils, deep snowpack, and a very short growing season are characteristic and support very open, non-commercial stands of subalpine fir, Engelmann spruce, and whitebark pine. Historically, green fescue and sedges covered the high alpine meadows, but, following intense grazing pressure by sheep early in the 20th century, many high elevation plant associations reverted to seral or exotic species.



Salmon River Canyon in the Canyons and Dissected Uplands (11g) has steep, stony slopes that are dry and grass-covered.

The Little Salmon River gorge near the boundary between Ecoregions 11e and 16k was highly modified by the storm of January, 1997. Channel migration, undercutting of banks and roads, and landslides occurred.

12. Snake River Plain

The Snake River is incised into the volcanic rocks of the Snake River Plain (12). Flow is interrupted by dams and diversions. Reservoirs and an extensive network of canals provide water to irrigated pastureland and cropland as well as expanding cities, suburban areas, and industries.

The plains and low hills of Ecoregion 12 are part of the xeric intermontane west. Where irrigation water and soil depth are sufficient, sugar beets, potatoes, alfalfa, small grains, or vegetables are grown. Elsewhere, livestock grazing is widespread. Cattle feedlots and dairy operations are found locally. Potential natural vegetation is mostly sagebrush steppe but barren lava fields and saltbush–greasewood also occur. Streams generally have lower gradients, are warmer, and have finer grained substrates than do streams in the montane ecoregions. Streams typically have higher primary productivity than streams with a forest canopy overstory. Natural stream fish assemblages in Ecoregion 12 are typically a mix of mesothermal minnows and suckers but some stenothermal salmonids and sculpins are also present. Ecoregion 12j has many large springs along the Snake River that support endemic fish and mollusc species. Shoshone Falls is a major zoogeographic barrier and different species occur above and below it.

12a The **Treasure Valley** ecoregion has irrigated cropland, pastureland, and rapidly growing cities, suburbs, and industries. Many canals, reservoirs, and diversions occur. Aridic soils predominate and require irrigation to grow commercial crops. Surface water quality has been significantly affected by channel alteration, dams, irrigation return flow, and urban, industrial, and agricultural pollution. Crops include wheat, barley, alfalfa, sugar beets, potatoes, and beans. Crop diversity is greater, temperatures are warmer, and the mean frost free season is longer than in Ecoregions 12e and 12i. Population density is much greater than in nearby, rangeland-dominated ecoregions.

12b The **Lava Fields** ecoregion contains basalt flows, cinder cones, and spatter cones. Exposed basalt or very shallow loessial soils over volcanics are characteristic and are either barren or sparsely covered by hardy shrubs and grasses. Livestock carrying capacity is low. Surface water availability is very limited. Ecoregion 12b includes the Craters of the Moon National Monument and parts of the Idaho National Engineering Laboratory. Lithology, depth to bedrock, stock carrying capacity, and water availability are unlike neighboring ecoregions.

12c The **Camas Prairie** ecoregion is a cold, wet valley used for small grain and alfalfa farming, pasture, range, and wildlife refuge. It is flanked by the foothills of Ecoregions 12f and 16f. These foothills trap mountain runoff in Ecoregion 12c. Resultant wet soils and flooding occur and are local and seasonal problems. Frigid Mollisols are common and are colder than the soils of the lower Treasure Valley (12a). Wet bottomlands support meadow grasses and sedges. Alluvial fans and terraces are covered by grasses and sagebrush.

12d The **Dissected Plateaus and Teton Basin** ecoregion is used as cropland and rangeland. Potatoes are an important cash crop. Sprinkler-irrigated land supports potatoes, alfalfa, and pasture; surface irrigation is far less common than in Ecoregion 12e which is lower, flatter, and adjacent to the Snake River. Non-irrigated land grows small grains. Mollisols developed in thick loess deposits or alluvium and are subject to wind erosion. Loess is far more extensive than in Ecoregion 12e. Potential natural vegetation is sagebrush steppe and is unlike the forests of the higher, more rugged Ecoregion 17. Wet meadows occur in the poorly-drained, relatively cold Teton Basin.

12e The nearly level **Upper Snake River Plain** contains cropland, pastureland, cities, suburbs, and industries. Extensive surface-irrigated small grain, sugar beet, potato, and alfalfa farming occurs. Frost-free season is shorter and crop variety is less than downstream in Ecoregions 12a and 12i. Ecoregion 12e is lower and less rugged than Ecoregions 12d and 80b. Aquatic resources have been degraded by irrigation diversions, channelization, dams, sewage treatment, nonpoint pollution, food processing, and phosphate processing.

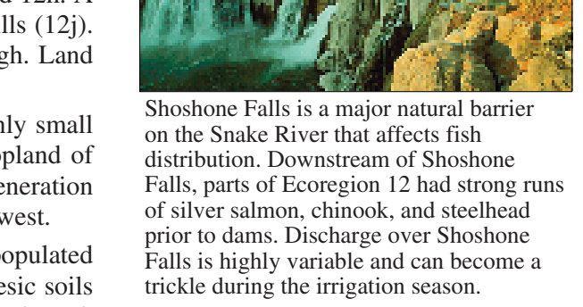
12f The shrub- and grass-covered **Semiarid Foothills** ecoregion is higher and more rugged than nearby Ecoregions 12a, 12c, and 12h. A few perennial streams flow across the ecoregion but are absent on the lacustrine deposits of the Unwooded Alkaline Foothills (12j). Shallow, clayey soils are common and often support medusahead wildrye, cheatgrass, and scattered shrubs. Wildfire frequency is high. Land use is primarily livestock grazing and is distinct from the irrigated agriculture of the Treasure Valley (12a).

12g The **Eastern Snake River Basalt Plains** ecoregion typically has shallow, stony soils that are unsuitable for cultivation. Only small areas have soils deep enough to be farmed under sprinkler irrigation. Rangeland is widespread and contrasts with the cropland of Ecoregions 12d, 12e, and 12i. Potential natural vegetation is mostly sagebrush and bunchgrass. It is cool enough to have some regeneration capacity and still contains native plants unlike Ecoregion 12h. Eastern parts of Ecoregion 12g are higher and more continental than the west.

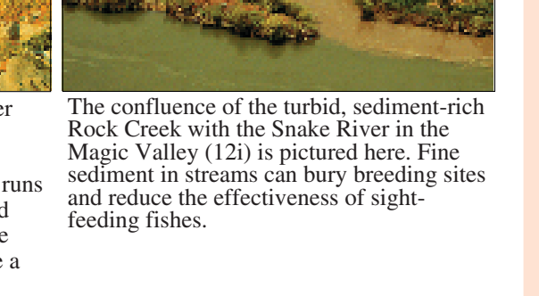
12h The **Mountain Home Uplands** ecoregion is arid and shrub- and grass-covered. It is mostly rangeland and is sparsely populated unlike Ecoregions 12a and 12i. Local relief is between that of the flanking foothills and the Magic and Treasure valleys. Mesic soils are common and are warmer than the frigid soils of Ecoregion 80a. Today, cheatgrass, medusahead wildrye, and sagebrush occur and stock carrying capacity is low; native grasses are much rarer and vegetative regeneration capacity is more limited than in the cooler Ecoregion 12g.

12i The **Magic Valley** ecoregion is underlain by alluvium, loess, and basalt flows. Its aridic soils require irrigation to grow commercial crops. Many canals, reservoirs, and diversions supply water to its pastureland, cropland, and residential, commercial, and industrial developments. Small grains, alfalfa, sugar beets, potatoes, and beans are grown. Livestock and dairy farms occur; dairying is more common than in Ecoregion 12a. Dams, irrigation diversions, pollution, and channel alteration have affected water quality. Over-watering from sprinkler-irrigated portions of Ecoregion 12g has raised ground water levels and created artificial wetlands. Natural vegetation is mostly sagebrush and bunchgrass but low terraces have salt tolerant plants. Population density is greater than in the rangeland-dominated Ecoregions 12g and 12h.

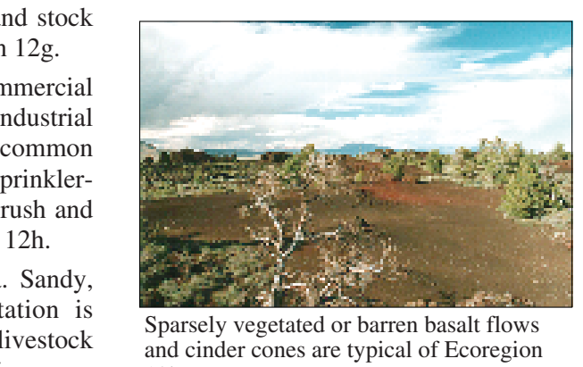
12j The shrub- and grass-covered **Unwooded Alkaline Foothills** ecoregion is higher and more rugged than Ecoregion 12a. Sandy, alkaline lacustrine deposits occur unlike in other ecoregions and support a unique flora. Potential natural vegetation is saltbush–greasewood and sagebrush steppe. Today, cheatgrass and crested wheatgrass are also common and the ecoregion is used for livestock grazing. Land use is unlike that of Ecoregions 12a and 12i. Perennial streams are rare and are much less common than in Ecoregion 12f.



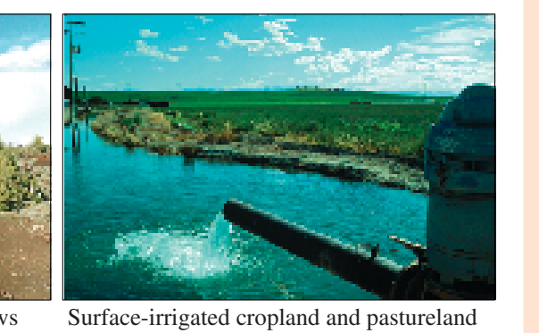
Shoshone Falls is a major natural barrier on the Snake River that affects fish distribution. Downstream of Shoshone Falls, parts of Ecoregion 12 had strong runs of silver salmon, chinook, and steelhead prior to dams. Discharge over Shoshone Falls is highly variable and can become a trickle during the irrigation season.



The confluence of the turbid, sediment-rich Rock Creek with the Snake River in the Magic Valley (12i) is pictured here. Fine sediment in streams can bury breeding sites and reduce the effectiveness of sight-feeding fishes.



Sparsely vegetated or barren basalt flows and cinder cones are typical of Ecoregion 12b. *Photo: Don A. Essig, IDEQ*



Surface-irrigated cropland and pastureland is widespread in the Treasure Valley (12a).

15. Northern Rockies

The Northern Rockies (15) ecoregion is rugged and forested. Precipitation is often orographically controlled but, generally, Ecoregion 15 receives more Pacific climatic influence than Ecoregions 16 and 17. Granitic rocks and associated management problems are much less extensive than in Ecoregion 16.

Ecoregion 15 is mountainous and rugged. Climate, trees, and understory species are characteristically maritime-influenced. Douglas-fir, subalpine fir, Englemann spruce, western larch, lodgepole pine, and ponderosa pine as well as Pacific indicators such as western redcedar, western hemlock, mountain hemlock, and grand fir occur. Pacific tree species are more numerous than in the Idaho Batholith (16) and are never dominant in the Middle Rockies (17). Western white pine was once common but has been decimated by blister rust, early to mid-20th century logging, and fire suppression. Whitebark pine is also undergoing a massive population decline due to the effects of white pine blister rust, mountain pine beetle, and fire. Ecoregion 15 is not as high nor as extensively snow- and ice-covered as the Canadian Rockies (41). Granitic rocks and associated management problems are less extensive than in the Idaho Batholith (16). Thick volcanic ash deposits are more widespread than in Ecoregion 16. Logging and mining are common and have caused stream water quality problems in the region. Natural stream fish assemblages have low diversity and seldom have more than four native species present. Streams have a nearly universal cold-water adapted fish assemblage of salmonids, sculpin, sucker and dace. Salmon, steelhead, and lamprey formerly occurred in Ecoregion 15i prior to dam construction.

15f The **Grassy Potlatch Ridges** ecoregion is underlain by volcanics and mantled by loess and volcanic ash. Idaho fescue, bluebunch wheatgrass, bluegrass, snowberry, and, on cooler, moister sites, scattered ponderosa pine occur and contrast with the forests of Ecoregion 15v and the forests and savannas of Ecoregion 15j. Today, small grain farming, hay operations, and livestock grazing are extensive.

15h The **High Northern Rockies** ecoregion traps large amounts of Pacific moisture and is characterized by mixed high elevation vegetation, rock outcrops, deep winter snow pack, a short growing season, tarns, and talus. Soils are very stony but often contain volcanic ash. Above treeline, tundra, alpine grassland, meadows, and wetlands occur. Subalpine fir, lodgepole pine, whitebark pine, mountain hemlock, and alpine larch grow in rocky glacial cirques or on exposed sites as scattered trees, very open-canopied parklands, or krummholz.

15i The **Clearwater Mountains and Breaks** ecoregion is exposed to substantial maritime influence, mantled by thick volcanic ash, and underlain by granitics. It is lithologically unlike Ecoregions 15o and 15p and higher than Ecoregions 15n and 15v. Its moist coniferous forests lack western hemlock and are transitional between those of the Idaho Panhandle and the drier forests of the southern Idaho Batholith.

15j The deep, narrow **Lower Clearwater Canyons** are lower, drier, warmer, and have been more developed than Ecoregion 16c or the physiographically distinct hills and mountains of Ecoregions 15i, 15n, 15p, and 15v. Savanna, Douglas-fir–ponderosa pine forest, and, in riparian areas, western redcedar–western white pine–grand fir forest occur. Forests are more widespread on canyon bottoms than on slopes.

15m The broad, glacial-scoured **Kootenai Valley** is drier than the valleys of Ecoregion 15u because it lies in the rain shadow of the Selkirk Range. Tree species diversity is high; representatives of both moist and dry gradients occur. The Kootenai River winds across a wide flood plain that has been reclaimed with levees and intensively farmed. Logging is common in the east near the mountainous Ecoregion 15q.

15n The **Weippe Prairie** ecoregion is a gently sloping basalt plateau that is mantled by loess and volcanic ash. It is lithologically unlike Ecoregions 15i and 15p. Maximum elevations are lower than in the more rugged Ecoregions 15i, 15p, and 15v. Its mixed coniferous forest contains ponderosa pine, Douglas-fir, grand fir, western redcedar, and western larch. Hay farming, grazing, and logging are common.

15o The **Coeur d'Alene Metasedimentary Zone** is forested and underlain by fractured quartzite and argillaceous rock. It is more rugged than Ecoregions 15s, 15u, and 15v and lithologically unlike Ecoregions 15i and 15p. Slope instability and channel sedimentation is usually less than in Ecoregions 15p or 15y but fault crush zones are notably unstable. Douglas-fir, grand fir, western redcedar, western hemlock, and, at higher elevations, mountain hemlock, subalpine fir, Engelmann spruce, and whitebark pine occur. Smelter emissions have denuded some slopes. Acid drainage from mine tailings have left some streams nearly devoid of aquatic life. Massive restoration efforts are now underway.

15p The **St. Joe Schist–Gneiss Zone** is mountainous, mantled by volcanic ash, and prone to landslides. Rocks are more weathered and slopes are more unstable than in Ecoregion 15o. High gradient streams dissect the region and receive episodic sedimentation from slides. Streams were used to transport logs to mills; log drives greatly altered aquatic ecosystems and stream morphology. Pacific influence is greater than to the south. Potential natural vegetation is mapped as cedar–hemlock–pine but hemlock is absent in the south. Near treeline, mountain hemlock, subalpine fir, Engelmann spruce, and whitebark pine occur.

15q The **Purcell–Cabinet–North Bitterroot Mountains** ecoregion is mantled by volcanic ash and glacial deposits and is underlain by quartzite and argillaceous rocks. Continental ice shaped its terrain but did not extend further south. Potential for natural and management-induced slope instability exists where water tables are perched in compacted tills and glacio-fluvial deposits. However, in general, slopes yield less sediment to streams after disturbance than in nearby granitic and schistic areas. Cedar–hemlock–pine forest and, at higher elevations, western spruce–fir forest occur. Birch and aspen grow on floodplains and are seral species on moist, low to mid-elevation uplands.

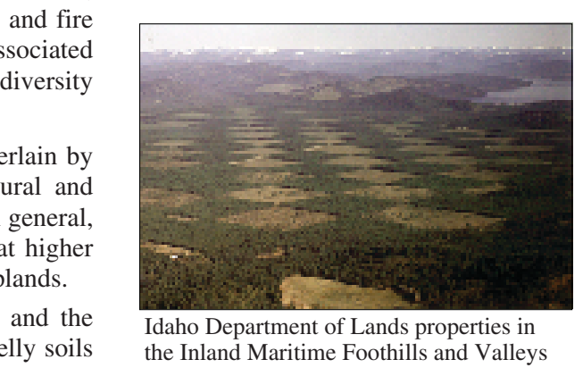
15s The **Spokane Valley Outwash Plains** ecoregion is gently rolling and includes the southern end of the Purcell Trench and the Spokane Valley. It once served as the main outlet for the Pleistocene Missoula Floods. In the northern valleys, coarse, gravelly soils developed from glacial outwash. In the southern Spokane Valley, more arable soils occur and developed from glacial lake sediment. Dry, open ponderosa pine and Douglas-fir woodlands occur and are distinct from the moist, maritime-influenced forests of Ecoregions 15s and 15u.

15u The **Inland Maritime Foothills and Valleys** ecoregion includes the wide, glaciated Pend Oreille and Priest valleys. Soils have more volcanic ash and water holding capacity than the drier Columbia, Kettle, and Sanpoil valleys of northeast Washington. Forests contain western hemlock, western redcedar, grand fir, Douglas fir, ponderosa pine, lodgepole pine, and an unusually large proportion of western larch. Birch and aspen grow on floodplains and are also common seral species on moist, low to mid-elevation uplands. These upland hardwoods may reflect boreal influence; they also occur in Ecoregion 15q but are not widespread elsewhere in the Northern Rockies (15) of Idaho.

15v The **Northern Idaho Hills and Low Relief Mountains** ecoregion is not as rugged nor as high as Ecoregions 15o and 15p. It is mantled by volcanic ash and loess and has rich, forest-type soils that are unlike the grassland-type soils of Ecoregion 10. Grand fir, western redcedar, Douglas fir, and ponderosa pine are common. Western hemlock is less widespread than in Ecoregions 15o and 15p, never abundant, and absent from the south. Its productive forests are widely logged; logging is easier and cheaper than in more rugged terrain.

15w The mountainous **Western Selkirk Maritime Forest** ecoregion is more rugged than Ecoregion 15v. Douglas-fir dominates or co-dominates most overstories. Maritime species such as grand fir, western redcedar, and western hemlock are more common than in the rain shadow of the North Cascades in Washington's Okanogan Highland. Boreal influence is absent in contrast to northern Ecoregion 15y.

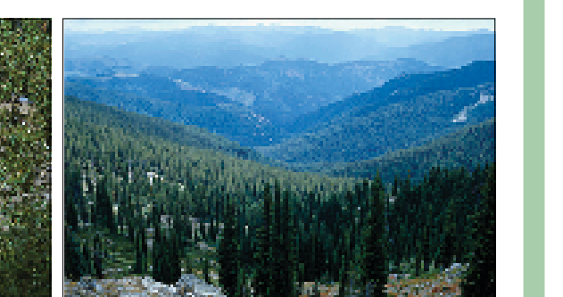
15y The dissected, partly glaciated **Selkirk Mountains** ecoregion is rugged, covered in mixed coniferous forest, and mantled by volcanic ash that increases forest productivity. Both Pacific species (grand fir, western redcedar, and western hemlock) and Rocky Mountain species (western larch, western white pine, and lodgepole pine) are common. Ecoregion 15y is wetter and has more maritime influence than Ecoregion 15w. A combination of weather patterns, high relief, and very narrow valleys result in more summer precipitation, fog, and relative humidity at low and mid-elevations than elsewhere in northern Idaho. Boreal influence is stronger, subalpine fir–spruce forests are lower, and whitebark pine forests are more extensive than in the rest of the Northern Rockies (15). Boreal influence increases toward the north and some north-facing valleys have extensive peatlands. Ecoregion 15y includes the largest contiguous old growth cedar–hemlock forest in the interior U.S., extensive peatlands, and important lynx and grizzly bear habitat. It supports the only woodland caribou herd in the conterminous U.S.. Erosion hazards can be high where road beds intercept perched water tables above subsurface compacted tills. Avalanche chutes are common.



Idaho Department of Lands properties in the Inland Maritime Foothills and Valleys (15u) near Priest Lake. Checkerboard of 80 acre clearcuts and lodgepole pine stands is the result of studies to determine the effects of various management practices on the area's volcanic ash-rich soils. *Photo: Don A. Essig, IDEQ*

Elk commonly are found in the high mountain pastures of Ecoregion 15 during the summer and on lower, densely forested slopes during the winter. *Photo: Jerry Wolff*

Placer mining severely alters channel conditions and aquatic habitat. Here, tailings cover a valley floor in the Northern Rockies (15); placer mining tailings are more common in the Idaho Batholith (16), particulary in Ecoregion 16i.



Rocky, steep, subalpine fir-covered mountain slopes of Ecoregion 15i are in the foreground. Beyond is the Lochsa Canyon (in Ecoregion 16c) and the Lochsa Uplands (16b) where logging is common.

16. Idaho Batholith

Typically, the Idaho Batholith (16) is underlain by granitics and is lithologically and climatically distinct from the Northern Rockies (15). High elevation areas in Ecoregion 16 are far more widespread than in Ecoregion 15. The rugged, glaciated Sawtooth Range is pictured here. Rockland, talus, tarns, and open high elevation forests occur.

Ecoregion 16 is mountainous, deeply dissected, partially glaciated, and characteristically underlain by granitic rocks. The lithological mosaic and related slope stability and water quality issues are different from Ecoregions 15 and 17. Soils derived from granitics are droughty and have limited fertility, and therefore provide only limited amounts of nutrients to aquatic ecosystems. They are highly erodible when vegetation is removed. Maritime influence is slight and lessens toward the south. Grand fir, Douglas-fir, western larch, and, at higher elevations, Engelmann spruce and subalpine fir occur; ponderosa pine, shrubs, and grasses grow in deep canyons. Pacific tree species are less numerous than in Ecoregion 15; western hemlock is absent and western redcedar is limited to the north. Overall, the vegetation is unlike that of Ecoregions 15 and 17. Land uses include logging, grazing, and recreation. Streams are likely to suffer from increased loads of fine sediments after disturbance by humans. Declining anadromous fish runs once brought much needed nutrients but are now in danger of extirpation due to dams on the Columbia and lower Snake rivers, hatchery operations, and habitat degradation. Fish assemblage composition is similar to Ecoregion 15. Macroinvertebrate assemblages are more similar to those found in Ecoregions 12, 17, and 80 than to those found in Ecoregion 15.

16b The mountainous **Lochsa Uplands** ecoregion is dissected but not as deeply as Ecoregion 16c. It is mostly underlain by granitic rocks and mantled by volcanic ash deposits that increase the fertility and water retention of upland soils. Grand fir, Douglas-fir, and western larch are common, Engelmann spruce and subalpine fir grow at high elevations, and redcedar occurs on north-facing slopes and in canyons. Maritime influence is less than to the north but greater than to the south. Logging and road building cause landslides and stream sedimentation.

16c The deeply dissected **Lochsa–Selway–Clearwater Canyons** ecoregion contains cold, fast-flowing rivers. Local relief is greater than in the nearby mountains. Canyons become warmer and drier with increasing depth. Ecoregion 16c is dominated by Douglas-fir, grand fir, western redcedar, western larch, and western white pine. Ponderosa pine grows on lower, drier sites. The forest canopy is more closed than in the warmer and drier Ecoregion 16j. Extensive wilderness occurs and includes the Selway River watershed. Elsewhere, logging is common.

16d The **Dry, Partly Wooded Mountains** ecoregion is largely underlain by sedimentary and extrusive rocks; granitics are less common than in other parts of the Idaho Batholith (16). Ecoregion 16d is in the rain shadow of high mountains. Winter precipitation is less than in Ecoregions 16h and 16k and maritime influence is absent. A mosaic of shrubland, open Douglas-fir forest, and aspen occurs and is unlike other parts of Ecoregion 16. Mining has affected water quality. Rapid residential and commercial growth is occurring near Ketchum.

16e The **Glaciated Bitterroot Mountains and Canyons** ecoregion is underlain by granitic rocks and mantled by volcanic ash and glacial till. Peaks, lakes, wetlands, and deep glaciated valleys occur. Landforms and lithology are different from nearby ecoregions. Summits are high enough to trap Pacific moisture. Grand fir, Douglas-fir, and western larch are common and Engelmann spruce and subalpine fir occur at high elevations and on north-facing slopes. Ecoregion 16e is mostly roadless or designated wilderness and recreation is an important land use.

16f The **Foothill Shrublands–Grasslands** ecoregion is in the rain shadow of high mountains. Its hills and benches are dry, treeless, and covered by shrubs and grasses. The vegetation mosaic is unlike the open forests of Ecoregion 16k and the mountain sagebrush/forest mosaic of the lithologically distinct Ecoregion 16d. Land use is mostly grazing but rural residential development is expanding near Boise.

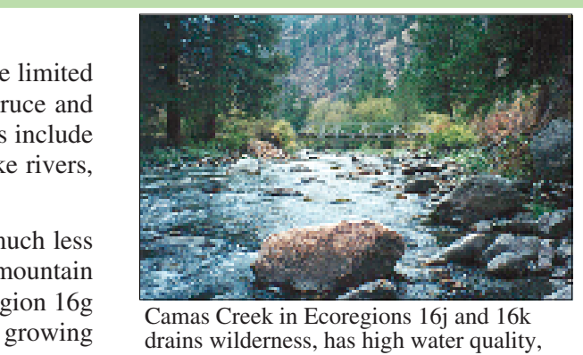
16g The **High Glacial Drift-Filled Valleys** ecoregion contains terraces, outwash plains, moraines, wetlands, and hills that are much less rugged and less forested than Ecoregion 16k. Originally, sedges and rushes were common on wet soils, bunchgrasses and mountain big sagebrush occurred on drier soils, and lodgepole pine and ponderosa pine grew on valley floors. Winters are cold and snowy. Ecoregion 16g receives large amounts of spring runoff from mountain snow pack. It is summer pasture for large numbers of livestock; cropland and growing residential and recreational developments also occur. Flood irrigation and grazing have raised sediment and phosphorus levels in streams.

16h The wet, severely exposed, glaciated **High Idaho Batholith** contains jagged peaks, tarns, and rockland. It is often snowcapped and annual precipitation is greater than in nearby, lower ecoregions. Soils are very stony and have a cryic temperature regime. Above treeline, tundra, alpine grassland, meadows, and wetlands occur. Subalpine fir, lodgepole pine, whitebark pine, mountain hemlock, and alpine larch grow in rocky glacial cirques or on exposed sites as scattered trees, very open-canopied parklands, or krummholz.

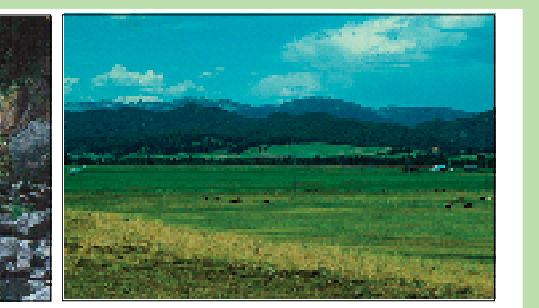
16i The **South Clearwater Forested Mountains** ecoregion receives more maritime influence than ecoregions to the south but less than those to the north. Grand fir is usually the sole maritime tree species in the elevational zone between Douglas-fir and subalpine fir. Logging has caused slope instability (especially in granitic areas) and stream sedimentation. Placer gold mining has also heavily affected rivers.

16j The **Hot Dry Canyons** ecoregion is deeply dissected. Local relief can approach 5,000 feet and canyons become warmer and drier with increasing depth. Overall, it is warmer and drier than Ecoregions 16i and 16k. There is little winter snowfall. Ponderosa pine, mountain sagebrush, and grasses are widespread; Douglas-fir also occurs but is less common than in Ecoregion 16c. South-facing slopes are drier and less wooded than north-facing slopes. Mining has affected canyon bottoms some of which now serve as transportation corridors.

16k The **Southern Forested Mountains** ecoregion is mantled by droughty soils derived from granitic rocks and is only marginally affected by maritime influence. Forest diversity is less than in wetter Ecoregion 16b. Open Douglas-fir is common, grand fir and subalpine fir occur at higher elevations, and ponderosa pine grows in canyons. Mountain sagebrush and forest are found in the south. Streams are subject to high sediment loading when soils are disturbed. Macroinvertebrate assemblages are distinct from those of Ecoregion 16i.



Camas Creek in Ecoregions 16j and 16k drains wilderness, has high water quality, and is excellent habitat for aquatic life. It has been nominated as an Outstanding National Resource Water. *Photo: Darren Brandt, IDEQ*



The High Glacial Drift-Filled Valleys (16g) ecoregion is summer pasture for large numbers of livestock. Associated surficial water quality problems occur.

Cutthroat, steelhead, sockeye, chinook, and bull trout depend on the Middle Fork Salmon River, a National Wild and Scenic River flowing through Impassable Canyon. *Photo: Don A. Essig, IDEQ*

The Foothill Shrublands-Grasslands (16f) ecoregion occupies the dry, southern fringe of the mountains of central Idaho. Land use is primarily grazing but residential development is expanding near Boise.

17. Middle Rockies

Trees are restricted to a narrow elevational belt in the drier parts of the Middle Rockies (17). Here, south of Challis, the open-canopied Douglas-fir and lodgepole pine forests of Ecoregion 17e lie between the High Elevation Rockland Alpine Zone (17h) and the lower semiarid shrub- and grass-covered hills of Ecoregion 17ab. The much flatter grass- and shrub-covered valleys of Ecoregion 17aa are in the foreground.

The climate of Ecoregion 17 lacks the strong maritime influence of Ecoregion 15. Mountains have Douglas-fir, subalpine fir, and Engelmann spruce forests and alpine areas; Pacific tree species are never dominant and forests can have open canopies. Foothills are partly wooded or shrub- and grass-covered. Intermontane valleys are grass- and/or shrub-covered and contain a mosaic of terrestrial and aquatic fauna that is distinct from nearby mountains. Many mountain-fed streams occur. Granitics and associated management problems are less extensive than in Ecoregion 16. Recreation, logging, mining, and summer livestock grazing are common land uses. Stream fish assemblages are similar to those found in Ecoregions 15 and 16 and are dominated by salmonids and cottids. The Lost Streams of Idaho constitute an unique set of isolated lotic environments that are separated from other systems by the Eastern Snake River Basalt Plains (12g). Fish populations may also be seasonally isolated by the intermontane valleys of Ecoregion 17aa. The Pahsimeroi and Lemhi rivers are important chinook salmon spawning streams.

17e The **Barren Mountains** ecoregion is largely underlain by quartzite and carbonate-rich rocks and is drier than mountainous ecoregions to the north. Elevations are higher than those of Ecoregion 17ab and range from about 6,800 to 10,000 feet. Open-canopied Douglas-fir–lodgepole pine–subalpine fir forests, aspen groves, sagebrush, mountain brush, and grasses occur. Forests are limited to a narrow elevational band and are most widespread on north-facing slopes. Pacific forest elements are absent and barrens are common.

17h The wet, severely exposed, glaciated **High Elevation Rockland Alpine Zone** contains jagged peaks, tarns, rockland, and talus deposits. It is often snowcapped and maximum annual precipitation is greater than in surrounding, but lower, ecoregions. Soils are stony and have a cryic temperature regime. Alpine tundra, alpine grassland, subirrigated meadows, and wetlands occur above timberline. Krummholz vegetation occupies windswept areas near timberline. Subalpine fir and whitebark pine are found in glacial cirques.

17j The **West Yellowstone Plateau** ecoregion contains rhyolite and basalt flows, lakes, springs, outwash plains, moraines, canyons, and wetlands. Its terrain is generally subdued in contrast to the more mountainous portions of Ecoregion 17 but scattered ridges and buttes occur. Ecoregion 17j has a coniferous forest–shrubland mosaic. Forests dominated by Douglas-fir, lodgepole pine, and aspen are most common on north-facing slopes and flatter uplands. Recreation is a very important land use but mining, grazing, and logging also occur.

17l The rugged **Gneissic–Schistose Forested Mountains** ecoregion is glaciated, wet, and lithologically unlike nearby ecoregions. Its streams have flashy hydrographs; they experience only a short delay between rainfall and runoff peaks and have low flows during drought and freezing periods. Douglas-fir, lodgepole pine, and subalpine fir are common. Land uses include recreation, logging, and grazing.

17n The **Cold Valleys** contain bottomlands, terraces, marshlands, alluvial fans, and foothills that are nestled below the Partly Forested Mountains (17o). Mean annual frost-free season is brief, 40 to 90 days, and shorter than in the Sagebrush Steppe Valleys (80i). Potential natural vegetation is mostly sagebrush steppe. Wet bottomlands support sedges, rushes, and willows. Pastureland, rangeland, and small grain, alfalfa, and potato farming occur. Fields, streams, and marshes are important habitat for both nesting and migratory birds.

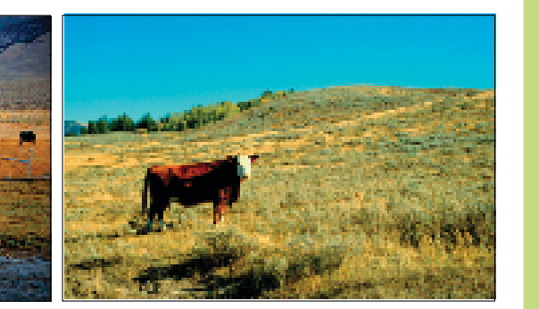
17o The steep, dry **Partly Forested Mountains** vary in elevation from about 6,000 to over 9,000 feet. Soils have a cryic temperature regime and are rocky and shallow. They support open-canopied forests, shrublands, and grasslands; Douglas-fir, lodgepole pine, and aspen are most common on north-facing slopes and gently sloping uplands while mountain big sagebrush and mountain brush dominate south-facing slopes. Its vegetation is distinct from surrounding ecoregions. Ecoregion 17o is used as summer range and for timber production.

17aa The **Dry Intermontane Sagebrush Valleys** ecoregion contains stream terraces, floodplains, saline areas, and alluvial fans. Water availability and potential for cropland agriculture are low because Ecoregion 17aa is in the rain shadow of high mountains, receives little mountain runoff, and is underlain by highly permeable valley fill deposits. Its deep gravels are unlike the basalts of Ecoregion 12. Sagebrush grassland is widespread and contrasts with the open-canopied forests of the more rugged and higher Ecoregion 17e. Shadscale and greasewood grow on alkaline soils that receive less than 8 inches of precipitation annually. Grazing is the dominant land use. Both the Pahsimeroi and Lemhi rivers were once important salmon and steelhead fisheries.

17ab The semiarid **Dry Gneissic–Schistose–Volcanic Hills** ecoregion is shrub- and grass-covered and is underlain by Quaternary and Tertiary volcanics. It is less rugged and drier than the higher Barren Mountains (17e) but is more rugged and receives more precipitation than the lower Dry Intermontane Sagebrush Valleys (17aa). Its sagebrush-grassland vegetation contrasts with the open-canopied forest–shrubland–grassland mosaic of Ecoregion 17e. Grazing is the most common land use in Ecoregion 17ab.

17ad The **Western Beaverhead Mountains** ecoregion occupies the elevational band between the High Elevation Rockland Alpine Zone (17h) and the lower, less rugged Ecoregion 17ab. It is underlain by quartzite and argillite; the lithologic mosaic and related slope stability and water quality issues are unlike those of Ecoregion 16k. Vegetation is affected by elevation and slope aspect. Mountain big sagebrush, mountain brush, and understory grasses grow on south-facing slopes and Douglas-fir, lodgepole pine, aspen, and subalpine fir occur on north-facing slopes. Land uses include grazing, mining, recreation, and logging.

Grazing is the primary land use in the intermontane valleys of Ecoregion 17aa. Ecoregion 17e is in the background.



Livestock grazing is the dominant land use in the Cold Valleys (17n). Cattle have affected range and water quality.

Black bears inhabit the forests of the Middle Rockies (17). *Photo: Jerry Wolff*

The high mountains of Ecoregion 17 are snow-covered in winter. Melting snow pack provides water to lower, drier valleys. *Photo: Don A. Essig, IDEQ*

18. Wyoming Basin

Ecoregion 18 is a vast sagebrush grassland. Grazing and repeated fires have affected its natural vegetation and non-native annual grasses can be common.

Ecoregion 18 is a broad intermontane basin containing rolling plains, high hills, and mesas. It is most extensive in Wyoming but also extends into other states including Idaho. Ecoregion 18 is dominated by arid grasslands and shrublands and lacks the extensive forests of neighboring, mountainous Ecoregions 17 and 19. Land use is primarily livestock grazing but irrigated hayland also occurs.

18c The **Wet Valleys** ecoregion is characterized by wetlands, lakes, canals, cold winters, and a short growing season. Nearly flat, poorly-drained floodplains and low terraces are widespread and support sedges, rushes, cattails, marsh grasses, annual bluegrass, and clover. Well-drained alluvial fans and foothills covered in sagebrush grassland act as a transition to the surrounding and much more rugged Partly Forested Mountains (17o), Semiarid Bear Hills (18d), and Semiarid Foothills (19f). Mollisols occur and have a frigid temperature regime. Land use is irrigated hayland, meadow pastureland, and rangeland. Land use and drainage conditions are all different from neighboring ecoregions.

18d The **Semiarid Bear Hills** ecoregion is located in the rain shadow of high mountains. Its terrain is hilly and is distinct from the nearly flat Wet Valleys (18c) and the much more rugged Wasatch and Uinta Mountains (19). Bunchgrasses and mountain big sagebrush occur and contrast with the forests of nearby, mountainous ecoregions. Land use is primarily grazing and is unlike the mosaic of irrigated hayland, meadow pastureland, and rangeland of Ecoregion 18c.

19. Wasatch and Uinta Mountains

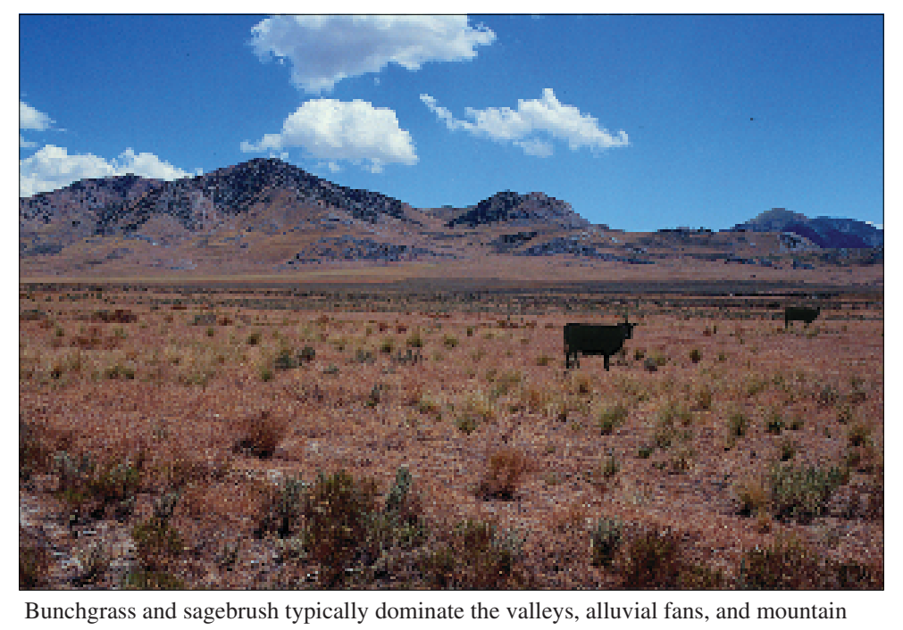
Ecoregion 19 contains a core area of high, precipitous mountains with narrow crests and valleys. At middle elevations, Douglas-fir and aspen parkland are common. At highest elevations and on steep, north-facing slopes, Engelmann spruce and subalpine fir occur. Semiarid foothills support widely spaced juniper in a matrix of sagebrush grassland. Perennial streams provide water to lower, more arid regions. Summer livestock grazing is an important land use and is more common than in Ecoregion 17. Bear Lake supports three endemic species of fish.

19d The **Wasatch Montane Zone** is found above about 7,400 feet elevation. Its mountains are covered in a mixture of mountain big sagebrush, mountain brush, and conifer forests. Douglas-fir and aspen parkland are common on north-facing slopes and many less sloping areas. Mountain big sagebrush, snowberry, and understory grasses grow on south-facing slopes. Engelmann spruce and subalpine fir grow at highest elevations and on steep, north-facing slopes. The vegetation mosaic is unlike the sagebrush grassland and widely spaced junipers of the lower Semiarid Foothills (19f).

19f The **Semiarid Foothills** ecoregion ranges in elevation from about 5,500 to 8,200 feet. Widely spaced junipers occur in a matrix dominated by mountain big sagebrush and bluebunch wheatgrass. Overall, the vegetation is distinct from that of the higher, wetter Wasatch Montane Zone (19d). Livestock grazing is common. Some rangeland has been cleared of trees and reseeded to grasses.

Douglas-fir forests and aspen parkland are found on north-facing slopes and flatter areas in the Wasatch Montane Zone (19d).

80. Northern Basin and Range



Bunchgrass and sagebrush typically dominate the valleys, alluvial fans, and mountain flanks of the Northern Basin and Range (80). Much of the region is used as rangeland. Scattered junipers are found amid bunchgrasses and sagebrush in higher, more rocky locations.

Ecoregion 80 consists of dissected lava plains, rolling hills, alluvial fans, valleys, and scattered mountains. It is higher and cooler than Ecoregion 12 and has more available moisture than Ecoregion 13. Basins support sagebrush grassland or saltbush greasewood vegetation; cool season grasses and Mollisols are more common in the basins of Ecoregion 80 than in the hotter and drier basins of Ecoregion 13 where Aridisols support sagebrush, shadscale, and greasewood. Ranges are covered in mountain sagebrush, mountain brush, Idaho fescue, Douglas-fir, or aspen. Juniper woodlands occur on rugged, stony uplands. Both rangeland and cropland occurs. Ecoregion 80 lies between Ecoregion 13 to the south and Ecoregions 11 and 12 to the north; its southern boundary is the highest shoreline of Pleistocene Lake Bonneville which once inundated much of Ecoregion 13 but not Ecoregion 80. Stream fish communities share features of Ecoregions 12 and 17. In the Owyhee Mountains, Ecoregions 80j and 80k, isolated by the surrounding lower, warmer regions, once supported anadromous fish.

80a The **Dissected High Lava Plateau** ecoregion has alluvial fans, rolling plains, and shear-walled canyons that are cut into extrusive rocks. Sagebrush grassland is common and scattered woodland grows on rocky uplands. Overall, Ecoregion 80a is less wooded, lower, and more arid than Ecoregions 80b, 80c, 80j, or 80k. Ecoregion 80a has more cool season grasses than Ecoregion 13c and lacks the saltbush–greasewood of Ecoregion 80h. Frigid and mesic Aridisols and Mollisols occur. Grazing is the primary land use. Cropland is much less common than in Ecoregions 12a and 12i. Areas of high water quality and native fish assemblages occur in isolated canyons.

80b The **Semiarid Hills and Low Mountains** ecoregion occupies the elevational band between Ecoregion 80c and the lower, less rugged Ecoregions 12e, 80a, and 80i. Potential natural vegetation is mostly sagebrush steppe. Cool season grasses are more common than in the drier Ecoregion 13c which has less available moisture and has a potential natural vegetation of Great Basin sagebrush. Forest components are much less common than in Ecoregion 80c. Juniper woodland grows on rock outcrops but is not as common as in Ecoregion 13d. Land use is primarily livestock grazing.

80c The **High Elevation Forests and Shrublands** ecoregion is mountainous and occupies the elevational band above Ecoregion 80b. It is characterized by a mix of conifers, mountain brush, and sagebrush grassland. North-facing slopes and many flatter areas support open stands of Douglas-fir, aspen and lodgepole pine; overall, forest components are more common than in Ecoregions 80a and 80b which are dominated by sagebrush grassland or juniper woodland. Winters are colder and mean annual precipitation is greater than in lower ecoregions.

80e The **High Desert Wetlands** ecoregion is critical habitat for nesting and migratory birds. Sedges, meadow barley, creeping wildrye, and Nevada bluegrass are found in wetter areas. Water levels in its lakes and wetlands fluctuate seasonally and annually.

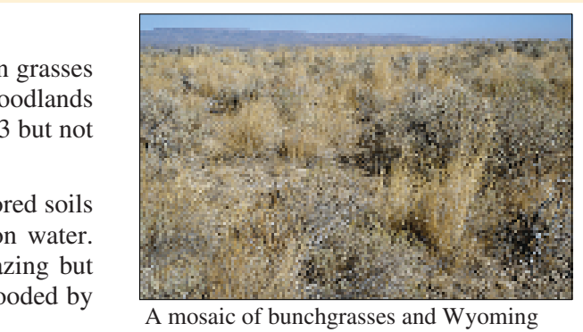
80f The **Owyhee Uplands and Canyons** ecoregion contains deep, precipitous river canyons, barren lava fields, badlands, and tuffaceous outcrops that are riddled by caves. Lithology is more varied, stream density is higher, and water availability is greater than in Ecoregion 80a. Ecoregion 80f is important wildlife habitat. Sagebrush grassland occurs; it is unlike the saltbush–greasewood of Ecoregion 12j.

80h The **Saltbush-Dominated Valleys** ecoregion is arid, gently sloping, and dominated by shadscale and greasewood. Light-colored soils with high salt and alkali content are common; they are dry for extended periods and may be leached of salt by irrigation water. Potential natural vegetation is saltbush–greasewood; it is distinct from that of surrounding ecoregions. The primary land use is grazing but irrigated cropland occurs and is much more common than in Ecoregion 13b. Ecoregion 80h drains to the Snake River and was not flooded by Pleistocene Lake Bonneville in contrast to Ecoregion 13b.

80i The **Sagebrush Steppe Valleys** ecoregion is flanked by the hills and mountains of Ecoregions 80b and 80c. It is dominated by sagebrush grassland and lacks the woodland of Ecoregion 80b, the open conifer forest of Ecoregion 80c, and the saltbush–greasewood of Ecoregions 13b and 80h. Perennial bunchgrasses are more abundant than in the Sagebrush Basins and Slopes (13c) in Utah. Valleys mostly drain to the Snake River and fish assemblages are unlike those of the internally-drained basins to the south in Ecoregion 13. Grazing is the dominant land use but non-irrigated wheat and barley farming is much more common than in the semiarid basins of Ecoregion 13. The Sagebrush Steppe Valleys (80i) ecoregion is less suitable for cropland agriculture and has less available water than many parts of the Snake River Plain (12).

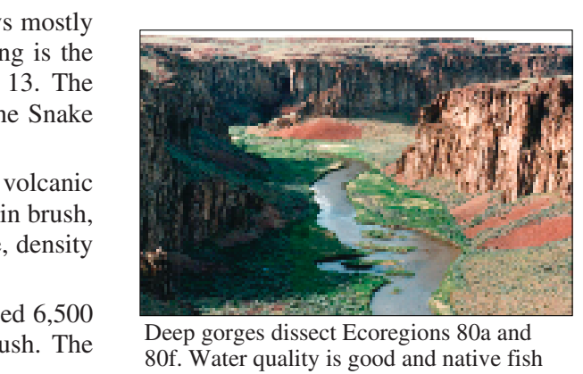
80j The disjunct **Semiarid Uplands** ecoregion includes mid-elevation zones in the Owyhee and Jarbidge mountains and hills, volcanic cones, buttes, and rocky outcrops that rise out of neighboring, drier lava plains. Mountain sagebrush, western juniper, mountain brush, and grasses grow in the ecoregion. In the Jarbidge Mountains, juniper woodland can be of limited extent or entirely absent. Elsewhere, density and extent of juniper woodland varies with long term climate changes, grazing pressure, and fire suppression.

80k The **Partly Forested Mountains** ecoregion occupies the elevational belt above the Semiarid Uplands (80j). Elevations exceed 6,500 feet. Annual precipitation is sufficient to support Douglas-fir, ponderosa pine, mountain big sagebrush, and mountain brush. The vegetation mosaic is unlike the western juniper woodland and sagebrush steppe of Ecoregion 80j.

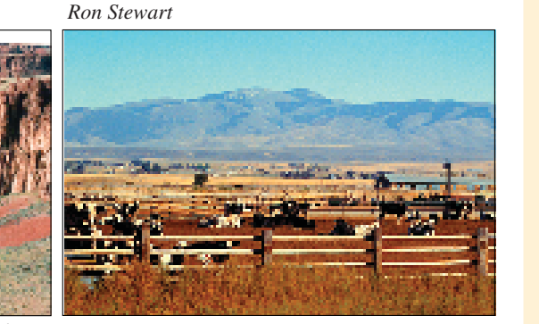


A mosaic of bunchgrasses and Wyoming big sagebrush are native to Ecoregion 80a. Cool season grasses are more common in Ecoregion 80 than in Ecoregion 13.

Declining numbers of sage grouse are found amid the sagebrush of the Northern Basin and Range (80). They winter on the plains and summer in the foothills. *Photo: Ron Stewart*



Deep gorges dissect Ecoregions 80a and 80f. Water quality is good and native fish assemblages occur in these isolated areas.



The sagebrush grassland of Ecoregion 80b is primarily used for livestock grazing. Feedlots also occur.

Summary Table: Characteristics of the Ecoregions of Idaho

10. COLUMBIA PLATEAU

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964; Franklin and Dyrness, 1969	
10f. Dissected Loess Uplands	224	Unglaciated. Rolling, hills, flat plateau remnants, and canyons.	1500-3600/ 400-1000	Quaternary loess on plateaus with colluvium and alluvium on canyon slopes and floors, respectively. Fractured Tertiary basalt.	Mollisols (Argixerolls, Durixerolls, Argialbolls, Haploxerolls)	Endicott, Kettenbach, Thatuna, Uhlorn, Broadax, Waha, Palouse, Gwin, Naff	Mesic/ Xeric	12-28	90-170	24/39; 59/89	Wheatgrass–bluegrass/ Bluebunch wheatgrass, Idaho fescue, bluegrass. North-facing slopes and higher, moister sites: snowberry, rose.	Grass- or brush-covered or cropland. Small grain, pea, and hay farming, grazing, and wildlife habitat.
10h. Palouse Hills	453	Unglaciated. Western foothills of the Northern Rocky Mountains.	2500-3000/ 100-500	Quaternary loess and alluvium. Tertiary basalt.	Mollisols (Argixerolls, Argialbolls, Haploxerolls), Alfisols (Fragixeralfs)	Palouse, Southwick, Taney, Santa, Naff, Larkin, Joel, Lahtahco. Soils are rich in organic matter and productive.	Frigid, Mesic/ Xeric	18-30	80-160	24/39; 47/83	Fescue–wheatgrass, fescue–snowberry, fescue–hawthorn, open ponderosa pine–Douglas-fir forest, ponderosa pine savanna/ Idaho fescue, bluebunch wheatgrass, wild rose, snowberry, riparian woodlands.	Extensive small grain farming; also cropland growing peas, lentils, and hay and pastureland. Intermittent, loess-bottomed streams are often plowed and tiled.
10j. Nez Perce Prairie	725	Unglaciated. Rolling plateau.	2000-4100; buttes to 5700/ 100-1000	Quaternary loess and colluvium. Tertiary extrusive rocks, Cretaceous granitic rocks, and Permian metamorphosed volcanic rock.	Mollisols (Argixerolls, Argialbolls)	Nez Perce, Uhlorn, Shebang, Taney, Boles, Suloaf	Frigid, Mesic/ Xeric	19-28	70-140	22/36; 50/79	Fescue–wheatgrass/ Idaho fescue, bluebunch wheatgrass. North-facing slopes: Douglas-fir, ponderosa pine.	Cropland growing small grains, peas, and hay, pastureland, rangeland, and woodland.
10l. Lower Snake and Clearwater Canyons	80	Unglaciated. Deep canyons.	1000-2400/ 1000-1400	Quaternary alluvium and colluvium. Fractured Tertiary basalt.	Mollisols (Haploxerolls, Argixerolls)	Chard, Bridgewater, Alpowa, Kuhl, Bluesprin, Kettenbach	Mesic/ Xeric	12-25	100-190	24/38; 60/90	Wheatgrass–bluegrass/ Bluebunch wheatgrass, Idaho fescue, bluegrass, Wyoming big sagebrush.	Grass-covered. Grazing, recreation, and wildlife habitat.

11. BLUE MOUNTAINS

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F) or **Seasonality**	*Source: Kuchler, 1964	
11d. Melange	285	Unglaciated. Dissected mountains.	4200-7500/ 800-3100	Quaternary colluvium. Tertiary basalt with a core of Tertiary metavolcanics, volcaniclastics, and metasediments and Jurassic granitic, metasedimentary, and sedimentary rocks.	Mollisols (Haplocryolls, Argicryolls, Haploxerolls, Argixerolls)	Bluebell, Ticanot, McDaniel, Rockly	Mesic, Frigid, Cryic/ Xeric, Udic	14-30	60-150	24/38; 62/94	Western ponderosa pine forest, sagebrush steppe/ Douglas-fir, ponderosa pine, lodgepole pine, mountain mahogany, snowberry, serviceberry, Idaho fescue, bluebunch wheatgrass.	Partly forested. Mostly livestock grazing and wildlife habitat.
11e. Wallowas/Seven Devils Mountains	251	Partly glaciated. Mountains. Steep gradient streams following fault lines have steep longitudinal gradients and have eroded deep canyons.	4000-9200/ 1200-2500	Quaternary colluvium. Mostly Tertiary basalt with a core of Permian metavolcanic, volcanic, pyroclastic, and volcaniclastic rocks.	Mollisols (Argixerolls), Andisols (Haplocryands)	Vay, Klickson, Suloaf, Bluesprin, Gaib	Frigid, Mesic, Cryic/ Xeric, Udic	12-55	30-160	Long, cold winters.	Grand fir–Douglas-fir, western ponderosa pine, and western spruce–fir forests/ Douglas-fir, ponderosa pine, lodgepole pine, mountain big sagebrush, low sagebrush, Idaho fescue, bluebunch wheatgrass. Higher sites: subalpine fir.	Covered in dry forests with a shrub understory. Livestock grazing, recreation, logging, and wildlife habitat.
11f. Canyons and Dissected Highlands	535	Unglaciated. Deep river canyons and dissected highlands in the rain shadow of mountains.	4000-6400/ 200-1400	Quaternary colluvium, alluvium and glacial deposits. Tertiary basalt. Many faults.	Mollisols (Argixerolls, Haplocryolls, Argicryolls), Alfisols (Haploxeralfs)	Suloaf, Uptmor, Telcher, Bluesprin, Klickson, Bluebell, Ticanot, Cramont	Frigid, Mesic, Cryic/ Xeric	14-30	80-100	Bottoms: 28/42; 59/94. Uplands: 20/37; 50/83	Western ponderosa pine forest/ Douglas-fir, ponderosa pine, Idaho fescue, bluebunch wheatgrass, bluegrass.	Forested. Woodland grazing, logging, recreation, and wildlife habitat.
11g. Canyons and Dissected Uplands	859	Unglaciated. Deep river canyons and dissected uplands.	1000-4900/ 800-3400	Quaternary colluvium. Tertiary basalt and Tertiary metamorphic, metavolcanic, metasedimentary, and sedimentary rocks.	Mollisols (Argixerolls), Alfisols (Haploxeralfs)	Bluesprin, Klickson, Tannahill, Suloaf, Agatha, Keuterville, McDaniel, Rockly. On canyon slopes: stony soils.	Frigid, Mesic/ Xeric	12-30	70-180	28/42; 58/92	Wheatgrass–bluegrass, western ponderosa pine forest/ Bluebunch wheatgrass, bluegrass, snowberry, Idaho fescue, open Douglas-fir–ponderosa pine forest.	Mostly grass- or brush-covered. Livestock grazing and recreation.
11i. Continental Zone Foothills	591	Unglaciated. Foothills.	3000-5500/ 600-2500	Quaternary colluvium. Mostly Tertiary basalt. Also some Jurassic graywackes and granitics.	Mollisols (Argixerolls), Aridisols (Haplargids),Vertisols (Haploxererts)	McDaniel, Riggins, Meland, Reywat, Gem, Bakeoven, Glasgow, Agerdelly, Rockly	Mesic/ Xeric	10-22	90-145	12/31; 54/92	Mostly wheatgrass–bluegrass, sagebrush steppe/ Idaho fescue, bluebunch wheatgrass, bluegrass, sagebrush, snowberry, mountain mahogany; scattered Douglas-fir, ponderosa pine.	Shrub- and grass-covered. Rangeland and wildlife habitat.
11l. Mesic Forest Zone	47	Glaciated. Mountains.	6000-7400/ 800-1400	Quaternary colluvium and glacial deposits. Mostly Permian metavolcanics and volcanics and Tertiary basalt. Also some Jurassic granitics.	Mollisols (Haplocryolls), Andisols (Haplocryands), Alfisols (Haplocryalfs)	Bluebell, Sudpeak, Culdecole, Shilla, Webbridge	Cryic/ Xeric	14-32. Precipitation falls mostly as snow.	65-75	7/30; 42/84	Grand fir–Douglas-fir forest, western spruce–fir forest, western ponderosa pine forest/ Douglas-fir, grand fir, subalpine fir, mountain big sagebrush, mountain brush. Lower, drier sites: ponderosa pine.	Forested. Logging, livestock grazing, recreation, and wildlife habitat.
11m. Subalpine-Alpine Zone	71	Glaciated. High mountains and crests. Rockland, tarns, and talus are common.	6500-8500/ 600-2000	Quaternary colluvium. Mostly Permian metavolcanics and volcanics and Tertiary basalt. Rock outcrops common.	Inceptisols (Cryochrepts), Andisols (Haplocryands), Mollisols (Haplocryolls)	Vay. Soils are stony or rocky.	Cryic/ Udic	30-40+. Deep winter snowpack.	30-90	Long, cold winters.	Mixed high elevation vegetation, western spruce–fir forest/ Alpine meadows, subalpine parkland, very open subalpine fir, Engelmann spruce, whitebark pine.	Alpine grassland, meadowland, open high altitude forest, or just rockland. Watershed, summer grazing, recreation, and wildlife habitat.

12. SNAKE RIVER PLAIN

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
12a. Treasure Valley	1302	Unglaciated. Valley with many canals and reservoirs.	2100-2800/ 0-400	Quaternary alluvium, loess, lacustrine, alluvial fan deposits, basalt and sedimentary rock. Tertiary sedimentary rock.	Aridisols (Haplocalcids, Calciargids, Argidurids, Haplocambids, Haplodurids), Mollisols (Argixerolls, Haplaquolls, Haploxerolls)	Power, Elijah, Haw, Moulton, Baldock, Greenleaf, Owyhee, Purdam, Harpt, Scism, Minidoka, Bram	Mesic/ Aridic	6-15	90-170	20/37; 55/90	Sagebrush steppe/ Wyoming–basin big sagebrush, bluegrass, bluebunch wheatgrass, cheatgrass, basin wildrye, Thurber needlegrass, rabbitbrush. Saline areas: shadscale, greasewood, saltgrass.	Irrigated cropland, pastureland, suburban and urban developments, and industrial areas. Wheat, barley, sugar beets, potatoes, beans, and specialty crops are grown. Elsewhere: grazing. Land use has affected water quality.
12b. Lava Fields	1122	Unglaciated. Irregular plains with flows, cinder cones, and spatter cones. Surface water availability is extremely limited.	3800-5500/ 0-400	Quaternary basalt, loess, and volcanic ash mixed with alluvium. Rock outcrops are common.	Aridisols (Haplocalcids), Mollisols (Argixerolls, Durixerolls), Andisols (Vitrixerands)	Pancheri, Cinderhurst, Polatis, Deerhorn, McCarey, Rehfield. Exposed lava flows, cinder cones, and very shallow soils are common.	Mesic, Frigid/ Aridic, Xeric	7-16	55-160	10/29; 52/84	Sagebrush steppe/ Open basin sagebrush, mountain sagebrush, Wyoming big sagebrush, rabbitbrush, bluegrass, bluebunch wheatgrass, squirreltail, Thurber needlegrass, Indian ricegrass.	Sparsely covered by grass and brush or just barren. Rangeland, wildlife habitat, and recreation. Low livestock carrying capacity. Craters of the Moon National Monument is located in the ecoregion.
12c. Camas Prairie	530	Unglaciated. Valley containing nearly level to rolling terraces, bottomlands, basalt plains, and, on the periphery, alluvial fans. Flooding is a local and seasonal problem.	4700-5100/ 0-200	Quaternary alluvium, colluvium, terrace gravels, and basalt.	Mollisols (Argixerolls, Calcixerolls, Durixerolls, Haploxerolls, Calciaquolls)	Little Wood, Picabo, Peevywell, Balaam, Hapur, Muldoon, Manard, Simonton, Roanhide. Soil wetness is a local and seasonal problem.	Frigid/ Xeric; small areas of Aquic	12-20	50-110	6/29; 46/85	Sagebrush steppe/ Fans and terraces: bluebunch wheatgrass, Idaho fescue, bluegrass, basin big and mountain sagebrush. Bottomlands: rushes, sedges, meadow grasses, and willows. On lava plains: alkali sagebrush, bluegrass, squirreltail, Idaho fescue.	Grass- and brush-covered, cropland, or pastureland. Non-irrigated and irrigated agriculture, rangeland, pastureland, and wildlife habitat. Alfalfa hay and small grains are the principal crops.
12d. Dissected Plateaus and Teton Basin	1059	Unglaciated. Dissected plateaus, alluvial fans, low terraces, bottomlands, outwash plains, and nearly flat, poorly-drained basins.	4700-6300/ 0-600	Quaternary loess, alluvium, and glacial outwash deposits. Quaternary and Tertiary extrusive igneous rocks.	Mollisols (Haploxerolls, Argixerolls, Haplocryolls, Argicryolls, Cryaquolls), Inceptisols (Durixerepts)	Rexburg, Marystown, Rin, Ririe, Robinlee, Tetonia, Driggs, Foxcreek, Newdale, Swanner, Panmod. Loessial soils are subject to wind erosion.	Frigid, Cryic/ Xeric; small areas of Aquic	10-22	50-100	7/28; 46/81	Sagebrush steppe/ Mountain big sagebrush, threetip sagebrush, bluebunch wheatgrass, bluegrass, Idaho fescue, cheatgrass. Teton Basin: sedges, wet meadows.	Cropland or rangeland. Sprinkler-irrigated potato and alfalfa farming and pastureland. Non-irrigated winter wheat and spring barley farming. Potatoes are an important cash crop.
12e. Upper Snake River Plain	1463	Unglaciated. Nearly level river terraces, floodplains, and lake plains containing many canals and reservoirs.	4400-5000/ 0-200	Quaternary mixed alluvium, lake deposits, and basalt.	Mollisols (Haploxerolls, Calcixerolls), Entisols (Xerofluvents, Torriorthents), Aridisols (Haplocalcids)	Bannock, Bock, St. Anthony, Labenzo, Heiseton, Terreton, Declo, Tindahay	Frigid, Mesic/ Aridic	7-16	80-130	11/30; 50/86	Sagebrush steppe. In southwest: saltbush–greasewood/ Big sagebrush, bluebunch wheatgrass, bluegrass, cheatgrass, rabbitbrush, squirreltail, needleandthread, Indian ricegrass, fourwing saltbush. Riparian areas: sedges, perennial grasses, willows, cottonwood.	Irrigated cropland, pastureland, suburban and urban developments, and industrial areas. Small grains, sugar beets, potatoes, and alfalfa are grown. Some rangeland occurs. Land use has affected water quality.
12f. Semiarid Foothills	1559	Unglaciated. Foothills, alluvial fans, hills, and intervening valleys. A few perennial streams occur.	2900-6500/ 200-1500	Quaternary alluvium, colluvium, loess, sedimentary rocks, and extrusive rocks. Tertiary basalt flows, rhyolite tuffs, quartz latite lavas, and sedimentary rocks and Cretaceous granitics.	Mollisols (Argixerolls, Haploxerolls, Durixerolls), Aridisols (Haplargids)	Gem, Gwin, Newell, Mehlhorn, Gaib, Elkcreek, Bakeoven, Reywat, Glasgow, Brownlee, Riggins, Shoepeg, Appledellia. Shallow, clayey soils with a high shrink swell potential are common.	In the west: Mesic; elsewhere: Frigid/ Aridic, Xeric	9-28	90-170	16/34; 52/91	Sagebrush steppe/ Cheatgrass, medusahead wildrye, bluebunch wheatgrass, bluegrass, Idaho fescue, big sagebrush, bitterbrush. Wetter areas: bunch grasses, sedges, rushes, clovers. Enough available moisture to allow native plants to regenerate except NE of Weiser.	Shrub- and grass- covered; wildfire frequency is high. Rangeland and wildlife habitat with some irrigated alfalfa farming in valleys.
12g. Eastern Snake River Basalt Plains	6426	Unglaciated. Irregular plain.	3700-6400; isolated buttes to 7500/ 0-800	Quaternary loess, alluvium, basalt flows, and cinder cones. Rock outcrops occur.	Aridisols (Haplocalcids, Haplodurids, Haplocambids, Haplargids), Mollisols (Argixerolls, Haploxerolls, Calcixerolls), Entisols (Xeropsamments)	Pancheri, McCarey, Portneuf, Minidoka, Jipper, Juniperbute, Grassyridge, Scoon, Trevino, Portino, Whiteknob, Malm, Eaglecone. Shallow, stony soils occur.	Frigid, Mesic/ Aridic, Xeric	6-16	75-140	11/30; 51/87	Sagebrush steppe/ Bluebunch wheatgrass, basin and Wyoming big sagebrush, Thurber needlegrass, Indian ricegrass, bitterbrush, bluegrass, cheatgrass. Saline areas: fourwing saltbush, shadscale, winterfat.	Shrub- and grass-covered. Mostly rangeland. Small, sprinkler-irrigated areas of deep soil occur and are used for pasture or small grain, potato, sugar beet, bean, and alfalfa farming.
12h. Mountain Home Uplands	2945	Unglaciated. Plains with hills and basalt-capped buttes.	Mostly 2500-4300; some buttes to 5000/ 50-700	Quaternary alluvium, loess. Lacustrine deposits, basalt flows, sedimentary rocks. Tertiary basalt.	Aridisols (Calciargids, Haplargids, Durargids, Argidurids, Paleargids, Haplocambids, Haplodurids)	Power, Tenmile, Colthorp, Gooding, Chilcott, Kunaton, Royal, Truesdale, Timmerman	Mesic/ Aridic	6-12	90-170	21/39; 58/94	Mostly sagebrush steppe; some saltbush–greasewood in SW/ Cheatgrass, crested wheatgrass, medusahead wildrye, Wyoming and basin big sagebrush, alkali sagebrush, antelope bitterbrush. Native plant regeneration limited by low available moisture.	Shrub- and grass-covered. Primarily livestock grazing and wildlife habitat. Stock carrying capacity is low. Some areas at lower elevations are irrigated for pasture and hay.
12i. Magic Valley	1700	Unglaciated. Valley with many canals and reservoirs.	3200-4500/ 0-400	Quaternary alluvium, loess, and basalt. Tertiary basalt and Tertiary quartz latite.	Aridisols (Haplocalcids, Haplocambids, Calciargids, Paleargids), Entisols (Torriorthents), Mollisols (Durixerolls)	Portneuf, Trevino, Paulville, Tindahay, Weeks, Buko, Gooding, Fathom, Minveno, Power, Purdam	Mesic/ Aridic	7-13	110-145	18/36; 54/88	Mostly sagebrush steppe. Lower terraces: saltbush-greasewood/ Wyoming and basin big sagebrush, alkali sagebrush, bluebunch wheatgrass, Thurber needlegrass, squirreltail, bluegrass, needleandthread, Indian ricegrass, fourwing saltbush.	Irrigated wheat, barley, alfalfa, potatoes, sugar beets, beans, and pastureland. Dairy and livestock farms, rangeland, and residential, commercial, and industrial developments also occur. Land use has affected water quality.
12j. Unwooded Alkaline Foothills	1598	Unglaciated. Rolling foothills, hills, benches, alluvial fans, and scattered badlands. Perennial streams are rare.	2200-3900/ 0-1200	Quaternary sandy, alkaline lacustrine sediments are characteristic and alluvium also occurs. Quaternary sedimentary rocks and Tertiary basalt.	Aridisols (Argidurids, Calciargids, Haplocalcids, Durargids), Mollisols (Haploxerolls, Argixerolls), Entisols (Torripsamments, Torriorthents)	Chilcott, Haw, Power, Lolalita, Payette, Quincy, Cashmere, Mazuma, Shoofly, Bram	Mesic/ Aridic, Xeric	4-16	80-160	22/36; 56/88	Saltbush–greasewood; sagebrush steppe/ Wyoming big sagebrush, bluebunch wheatgrass, crested wheatgrass, cheatgrass, bluegrass, Thurber needlegrass, and Indian ricegrass. In saline-alkaline areas: Bailey's greasewood, black greasewood, bud sagebrush, shadscale, inland saltgrass, and seepweed.	Shrub- and grass-covered. Mostly rangeland and wildlife habitat. Some irrigated hayland, pastureland, and cropland growing alfalfa, sugar beets, and small grains at lower elevations near reservoirs and the Snake River.

13. CENTRAL BASIN AND RANGE

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
13b. Shadscale-Dominated Saline Basins	110	Unglaciated. Nearly flat, basins that are internally-drained. Pleistocene Lake Bonneville inundated the ecoregion.	4500-5000/ 0-100	Quaternary alluvium, colluvium, and lacustrine deposits from Pleistocene Lake Bonneville. Upper Paleozoic undifferentiated sedimentary rocks.	Aridisols (Haplargids, Natrargids, Haplocalcids)	Heydlauff, Mellor, Bram, Hiko Peak. Soils are dry for extended periods and have a high salt and alkali content.	Mesic/ Aridic	8-13	100-150	12/31; 52/88	Saltbush–greasewood/ Greasewood, shadscale, basin big sagebrush, squirreltail. Less saline sites: Wyoming big sagebrush, Indian ricegrass, wheatgrasses.	Covered mostly by alkaline and saline tolerant brush and grasses. Primarily rangeland and wildlife habitat with some irrigated wheat, barley, and alfalfa farming.
13c. Sagebrush Basins and Slopes	36	Unglaciated. Valleys containing lake terraces, alluvial fans, bajadas, and mountain flanks that are internally-drained by ephemeral streams.	5000-7700/ 200-2700	Quaternary alluvium, colluvium, and lacustrine sediments. Paleozoic sandstone, siltstone, limestone, and dolomite.	Mollisols (Haploxerolls, Argixerolls) Aridisols (Haplocalcids)	Hymas, Ridgecrest, Hondoho, Kearns, Parleys	Frigid, Mesic/ Xeric, Aridic	8-18	50-110	8/30; 50/88	Sagebrush steppe/ Wyoming and mountain big sagebrush, bluebunch wheatgrass, cheatgrass, bluegrass, rabbitbrush, bitterbrush.	Shrub- and grass-covered. Primarily rangeland and wildlife habitat.
13d. Woodland- and Shrub-Covered Low Mountains	23	Unglaciated. Low, rocky, fault-block mountains, ridges, and hills. Ephemeral streams occur.	6000-7800/ 200-1800	Quaternary colluvium. Pennsylvanian and Mississippian sandstone, limestone, dolomite, siltstone, and shale.	Mollisols (Haploxerolls, Palecryolls, Haplocryolls, Argicryolls, Cryoborolls)	Hymas, Povey, Northwater, Clayburn, Pavohroo. Rocky, shallow soils are common.	Frigid, Cryic/ Xeric; can border on Aridic	12-26	50-80	7/28; 48/83	Sagebrush steppe/ Mountain big sagebrush, mountain snowberry, antelope bitterbrush, Utah juniper, pinyon with an understory of bluebunch wheatgrass, western wheatgrass, mountain bromegrass, bluegrass.	Woodland-, brush-, and grass-covered. Rangeland and wildlife habitat.
13i. Malad and Cache Valleys	365	Unglaciated. Valleys containing wide terraces, narrow flood plains, and alluvial fans. Mountain-fed perennial streams and canals occur.	4500-5400/ Mostly 10-200; sometimes to 800	Quaternary alluvium and lacustrine silt and sand from Pleistocene Lake Bonneville. Tertiary siltstone.	Mollisols (Calcixerolls, Calciaquolls, Endoaquolls, Argixerolls, Haploxerolls), Inceptisols (Haploxerepts)	Collinston, Inkom, Oxford, Banida, Parleys, Layton, Samaria, Logan	Mesic, Frigid/ Xeric	8-20	90-165; shortest in Cache Valley.	12/32; 51/89	Sagebrush steppe/ Basin big sagebrush, mountain big sagebrush, bluebunch wheatgrass, prairie junegrass, slender wheatgrass, basin wildrye, bluegrass.	Brush- and grass-covered. Irrigated cropland and pastureland, dryland farming, and rangeland. Alfalfa, barley, and wheat are grown.

15. NORTHERN ROCKIES

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F) or **Seasonality**	*Source: Kuchler, 1964; Franklin and Dyrness, 1969	
15f. Grassy Potlatch Ridges	451	Unglaciated. Hills, ridges, and isolated buttes.	2000-4000; a few buttes to 4700/ 200-800	Quaternary loess and volcanic ash. Tertiary basalt.	Mollisols (Argixerolls), Alfisols (Fragixeralfs), Andisols (Udivitrands)	Southwick, Taney, Santa, Helmer, Larkin, Joel, Johnson	Mesic, Frigid/ Xeric, Udic	22-30	100-130	19/35; 46/76	Fescue–wheatgrass, wheatgrass–bluegrass, fescue–snowberry, western ponderosa forest/ Idaho fescue, bluebunch wheatgrass, bluegrass, snowberry, ponderosa pine, Douglas-fir, grand fir.	Grass-, brush-, or forest-covered. Mostly wheat and barley farming, hay operations, and livestock grazing.
15h. High Northern Rockies	291	Glaciated. High mountains and crests. Rockland and talus are common. Cirques and tarns occur.	5000-7700/ 700-1700	Quaternary glacial till, colluvium and volcanic ash. Tertiary granitics and Precambrian argillite, quartzite, siltite, schist, gneiss. Rock outcrops occur.	Inceptisols (Dystrocryepts, Eutrocryepts), Andisols (Haplocryands, Fulvicryands)	Holloway, Latour, Phillcher, Vay, Joebaldy. Soils are very stony and contain volcanic ash.	Cryic/ Udic	25-80. Deep winter snowpack.	30 or less	Long cold winters, short summers.	Alpine meadows–barren/ Above treeline: tundra, alpine grassland, meadows, wetlands. In glacial cirques or at treeline: very open parklands or scattered subalpine fir, lodgepole pine, whitebark pine, mountain hemlock, alpine larch.	Tundra, alpine grasslands, meadowlands, wetlands, open high altitude forest, or just rockland. Wildlife habitat and recreation.
15i. Clearwater Mountains and Breaks	1386	Unglaciated. Dissected mountains composed of mountain slopes, mountain summits, ridges, foothills, breaks, narrow valleys, and canyons.	3000-6800/ 600-3000	Quaternary volcanic ash deposits and colluvium. Tertiary granitics and Precambrian gneiss and micaceous schists.	Andisols (Udivitrands, Haplocryands, Vitricryands), Inceptisols (Eutrudepts), Alfisols (Hapludalfs)	Jacot, Brodeer, Brequito, Rettig, Trappercreek, Aldermand, Vaywood, Fico	Frigid, Cryic/ Udic	30-55	50-100	17/33; 45/81	Cedar–pine forest/ Grand fir, Douglas-fir, western redcedar, lodgepole pine, white pine, western larch, mountain hemlock, subalpine fir, Engelmann spruce.	Forested. Logging, wildlife habitat, livestock grazing, and recreation.
15j. Lower Clearwater Canyons	593	Unglaciated. Deep canyons.	1000-3400/ 800-2000	Thin Quaternary loess deposits. Tertiary basalt.	Mollisols (Argixerolls)	Klickson, Bluesprin, Kettenbach, Johnson	Frigid, Mesic/ Xeric	12-32. Drier than nearby mountains.	70-160 (N facing: 70-120, S facing: 100-160)	24/38; 54/91. Warmer than nearby mountains.	Wheatgrass–bluegrass and western ponderosa pine forest/ Savanna of Idaho fescue, bluebunch wheatgrass, scattered ponderosa pine; also, Douglas-fir–ponderosa pine forests. Riparian areas: western redcedar, western white pine, grand fir.	Forest- and savanna-covered. Logging, livestock grazing, small grain farming, recreation, and residential and commercial development.
15m. Kootenai Valley	207	Glaciated. Broad valley containing the meandering Kootenai River. Dikes and levees are found on the flood plain.	1800-3600/ 200-1800	Quaternary alluvium and glacial lake sediments with minor amounts of volcanic ash. Cretaceous granitics.	Alfisols (Haploxeralfs, Hapludalfs), Entisols (Fluvaquents)	Rubson, Wishbone, Ritz, Schnoorson, Porthill, Crash	Frigid, Mesic/ Xeric	20-30. In rain shadow of N. Selkirks.	100-140	18/32; 50/83	Western ponderosa pine forest, Douglas-fir forest/ Douglas-fir, ponderosa pine, grand fir, western hemlock, western redcedar, western white pine, western larch.	Small grain, alfalfa hay, hop, and clover seed farming. Tree nurseries, woodlands, wildlife habitat, recreation, and pastureland. Logging is common in eastern areas.
15n. Weippe Prairie	269	Gently sloping to rolling plateau dissected by canyons.	2800-3700; canyons to 2200/ Mostly 50-400; canyons up to 1000	Quaternary volcanic ash, loess, silty alluvium, and lacustrine sediments. Tertiary basalt.	Mollisols (Argialbolls, Argixerolls, Fragixerolls), Alfisols (Fragiudalfs, Hapludalfs, Ochraqualfs)	Kauder, Kooskia, Reggear, Lewhand, Carlinton, Taney	Frigid, Mesic/ Xeric, Udic	23-40	70-150	20/38; 54/92	Western ponderosa pine forest, cedar–pine forest/ Ponderosa pine, Douglas-fir, grand fir, western redcedar, western larch, western white pine. South and west aspects: grass or open ponderosa pine–Douglas-fir forest with a grass understory.	Forest, cropland, or pastureland. Logging, grazing, hayland, tree nurseries, and small grain farming.
15o. Coeur d'Alene Metasedimentary Zone	1766	Rugged mountains containing steep mountain slopes,.peaks, ridges, and foothills with narrow valleys.	2400-6600/ 1000-2900	Quaternary volcanic ash and colluvium. Precambrian quartzite and argillaceous rock.	Andisols (Udivitrands, Haplocryands, Vitrixerands)	Bouldercreek, Vay, Ahrs, Pinecreek, Honeyjones, Hugus	Frigid, Cryic/ Udic, Xeric	30-60	30-120	20/34; 49/82.	Cedar–hemlock–pine forest/ Douglas-fir, grand fir, western redcedar, Engelmann spruce, subalpine fir, western hemlock, mountain hemlock, whitebark pine.	Forested. Logging, grazing, wildlife habitat, and recreation. Smelter emissions and acidic drainage from mines have locally impacted flora and fauna.
15p. St. Joe Schist-Gneiss Zone	2881	Partly glaciated. Slide-prone mountains dissected by a large number of high gradient streams that receive episodic sedimentation from landslides.	2000-6400/ 800-3000	Quaternary volcanic ash and colluvium. Mostly Precambrian micaceous schist, gneiss, and quartzite.	Andisols (Udivitrands, Vitricryands), Inceptisols (Eutrudepts), Alfisols (Fragiudalfs)	Bouldercreek, Nakarna, Aldermand, Honeyjones, Ahrs, Kauder, Brodeer, Grandad, Vaywood, Township	Frigid, Cryic/ Udic	24-65	30-110	20/33; 47/82	Cedar–hemlock–pine forest/ Lower altitudes: western redcedar, grand fir, western larch, Douglas-fir, western white pine, lodgepole pine, western hemlock (in northern 2/3). Higher elevations: mountain hemlock, subalpine fir, Engelmann spruce, whitebark pine.	Forested. Logging, livestock grazing, mining, recreation, and wildlife habitat. Nineteenth century logging practices, including log drives down rivers, impacted and continue to impact stream morphology and aquatic ecosystems.
15q. Purcell-Cabinet-North Bitterroot Mountains	670	Glaciated. Dissected, rugged mountains containing steep mountain slopes,.peaks, ridges, foothills, narrow valleys, and a few lakes.	2900-6000/ 600-1500	Quaternary volcanic ash, glacial till, glacio-fluvial deposits, and colluvium. Precambrian quartzite, argillite, and siltite.	Andisols (Udivitrands, Vitricryands)	Pend Oreille, Marblecreek, Dufort, Vay	Frigid, Cryic/ Udic	30-50	70-110	16/30; 48/84	Mostly cedar–hemlock–pine forest; higher elevations: western spruce–fir forest/ Western redcedar, grand fir, western hemlock, Douglas-fir, western larch, western white pine, ponderosa pine, lodgepole pine, black cottonwood. Birch–aspen grow on floodplains and are seral species on moist, low to mid-elevation uplands.	Forested. Logging, wildlife habitat, and recreation.
15s. Spokane Valley Outwash Plains	352	Unglaciated. Gently rolling plains that include the southern end of the Purcell Trench, Rathdrum Prairie, and the Spokane Valley.	2100-2800/ 0-600	Pleistocene glacial outwash, flood gravels, and terrace gravels overlain in the south by lacustrine sediments. Tertiary quartz monzonite.	Inceptisols (Dystroxerepts, Haploxerepts), Andisols (Vitrixerands), Mollisols (Haploxerolls)	Avonville, Kootenai, Garrison, Bonner	Frigid, Mesic/ Xeric	15-35	90-170	21/34; 51/82	Western ponderosa pine forest, fescue–wheatgrass/ Mostly open-canopied ponderosa pine–Douglas-fir woodlands with a grassy understory.	Forests, pastureland, rangeland, and cropland. Logging, home sites, grazing, wildlife habitat, recreation, small grain and hay farming.
15u. Inland Maritime Foothills and Valleys	1061	Partly glaciated. Foothills, low hills, and wide floodplains of the Pend Oreille and Priest rivers.	2100-4900/ 400-2500	Quaternary volcanic ash, glacio-fluvial deposits, alluvium, and terrace deposits. Cretaceous hornblende and granodiorite and Precambrian schist, quartzite, and argillite.	Andisols (Udivitrands, Vitrixerands), Inceptisols (Haploxerepts)	Pend Oreille, Bonner, Jacot, Ardtoo	Frigid/ Xeric, Udic	30-55	50-120	19/31; 47/82	Western ponderosa pine forest, Douglas-fir forest, cedar–hemlock–pine forest/ Western hemlock, western redcedar, western larch, western white pine, grand fir, Douglas fir, ponderosa pine, lodgepole pine, black cottonwood. On floodplains and low to mid-elevation upland sites: birch, aspen.	Forested or pastureland. Logging, ranches, grazing, hay farming, wildlife habitat, and recreation.
15v. Northern Idaho Hills and Low Relief Mountains	1193	Unglaciated. Hills and low mountains.	2000-5500/ 200-1800	Quaternary volcanic ash, loess, and, in river valleys, alluvium. Tertiary basalt and Precambrian schist, gneiss, quartzite, argillite and siltite.	Mollisols (Argixerolls, Haploxerolls), Alfisols (Fragixeralfs, Haploxeralfs, Hapludalfs), Andisols (Vitrixerands, Udivitrands), Inceptisols (Haploxerepts)	Taney, Santa, Southwick, Lenz, Kruse, Ardenvoir, Threebear, Kauder, Riswold, Lado, Poorman, Jaype	Frigid-Mesic/ Xeric, Udic	22-45	50-130	23/35; 50/86	Cedar–hemlock–pine forest, western ponderosa pine forest/ Grand fir, western redcedar, ponderosa pine, Douglas fir, western larch, lodgepole pine, western white pine, western hemlock (in northern 2/3).	Forested and some cropland and pastureland. Logging, small grain and hay farming, grazing, wildlife habitat, and recreation.

15. NORTHERN ROCKIES

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
15w. Western Selkirk Maritime Forest	113	Unglaciated. Mountain slopes, crests, and ridgetops with narrow valleys. Lakes and springs occur.	2100-5000/ 600-2800	Quaternary volcanic ash, loess, and colluvium. Cretaceous and Precambrian gneiss, granite, and schist. Rock outcrops occur.	Andisols (Vitricryands, Haplocryands), Inceptisols (Haploxerepts), Mollisols (Haplocryolls)	Vassar, Moscow, Divers, Brickel	Frigid, Cryic/ Udic, Xeric	22-50	50-120	22/35; 50/86	Douglas-fir forest/ Moist sites: Douglas-fir, grand fir, western redcedar, western hemlock, western larch. Drier sites: ponderosa pine, Douglas-fir. Colder sites: lodgepole pine, subalpine fir.	Forested. Logging, wildlife habitat, and recreation; some areas cleared for grazing.
15y. Selkirk Mountains	812	Partly glaciated. Dissected, rugged mountains with narrow, high relief valleys. Avalanche chutes are common.	2600-6200/ 1000-2800	Quaternary glacial deposits, thick volcanic ash, colluvium, and loess. Tertiary granitic rocks and Precambrian metamorphic rocks including micaceous schist and quartzite.	Inceptisols (Dystrudepts, Dystrocryepts, Haploxerepts), Andisols (Haplocryands, Udivitrands)	Marblecreek, Priestlake, Jeru, Vay, Ardtoo, Nakarna	Frigid, Cryic/ Udic, Xeric	30-55	30-110	16/29; 48/84	Douglas-fir, cedar–hemlock–pine, western spruce–fir forests/ Western redcedar, grand fir, western larch, Douglas-fir, western hemlock, western white pine, ponderosa pine, subalpine fir, whitebark pine, lodgepole pine, Engelmann spruce, mountain larch.	Forested. Logging, wildlife habitat, grazing, and recreation. Erosion hazard is high after disturbance.

16. IDAHO BATHOLITH

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
16b. Lochsa Uplands	698	Partly glaciated. Mountains.	4000-7200/ 600-2200	Quaternary volcanic ash and colluvium. Cretaceous granitic rocks, Tertiary granite, and Precambrian schist.	Andisols (Haplocryands, Udivitrands), Inceptisols (Eutrocryepts, Dystrocryepts), Entisols (Cryorthents), Mollisols (Haplocryolls)	Vay, Nakarna	Frigid, Cryic/ Udic, Xeric	35-55	30-100	8/31; 46/80	Mostly grand fir–Douglas-fir forests; higher sites: western spruce–fir forests/ Grand fir, Douglas-fir, western larch, western redcedar, western white pine. Higher sites: Engelmann spruce, subalpine fir.	Forested. Logging, livestock grazing, wildlife habitat, and recreation. Logging and road building cause land sliding and stream sedimentation.
16c. Lochsa-Selway-Clearwater Canyons	1150	Unglaciated. Deep, precipitous, dissected canyons containing cold, fast-flowing rivers.	1400-7800/ up to 4000	Quaternary loess and volcanic ash. Tertiary granite, Cretaceous granitic rocks, and Precambrian schists, gneiss, and quartzite. Rock outcrops occur.	Andisols (Udivitrands), Inceptisols (Dystrocryepts, Dystrudepts), Entisols (Xerorthents), Mollisols (Haploxerolls)	Lochsa, Suttler, Honeyjones, Bouldercreek, Quartzburg	Frigid, Cryic/ Xeric, Udic	19-60	30-150	19/33; 48/85	Cedar–pine; lower, drier sites: western ponderosa pine forest/ Douglas-fir, grand fir, western redcedar, western larch, white pine, lodgepole pine. Lower, drier slopes: Douglas fir, ponderosa pine.	Forested. Logging, livestock grazing, recreation, and wildlife habitat.
16d. Dry, Partly Wooded Mountains	1412	Partly glaciated. Mountains in rain shadow of the central Idaho mountains.	4000-9000/ 600-2600	Quaternary glacial deposits and colluvium. Tertiary extrusive volcanics, Paleozoic siltstone, dolomite, slate, quartzite and argillite. Rock outcrops occur.	Mollisols (Calcicryolls, Argicryolls, Haplocryolls, Argixerolls, Durixerolls), Inceptisols (Eutrocryepts)	Hagenbarth, Dawtonia, Koffgo, Vitale, Povey, Peevywell, Starhope, Zeelnot, Gany, Mitring, Ketchum, Dollarhide	Frigid/ Xeric	8-25. In the rain shadow of high mountains.	40-100	3/31; 41/81	Sagebrush steppe; some western spruce–fir forest, grand fir–Douglas-fir forest/ Wyoming and mountain and basin big sagebrush, snowberry, bluebunch wheatgrass, Idaho fescue; scattered Douglas-fir, aspen, juniper, lodgepole pine, subalpine fir.	Shrub- and open forest-covered. Rangeland, recreation, woodland, mining, and wildlife habitat. Residential, commercial, and second home developments are expanding in the Ketchum area.
16e. Glaciated Bitterroot Mountains and Canyons	412	Glaciated. North-south trending mountains containing jagged peaks, lakes, wetlands, and deep glaciated valleys.	3600-7600/ 800-3000	Quaternary volcanic ash and glacial deposits. Cretaceous granitic rock.	Inceptisols (Haplocryepts, Eutrocryepts), Entisols (Cryorthents), Mollisols (Haplocryolls)	Lolopeak, Petty. Very gravelly to stony soils.	Cryic/ Xeric, Udic	35-50	30-70	8/30; 44/79	Western spruce–fir forest, grand fir–Douglas-fir forest/ Grand fir, Douglas-fir, western larch, lodgepole pine. Higher sites: subalpine fir, Engelmann spruce, whitebark pine.	Forested. Recreation and wildlife habitat. Limited logging.
16f. Foothill Shrublands-Grasslands	1420	Unglaciated. Foothills, hills, benches, and ridges.	5000-7000/ 600-2000	Quaternary alluvium and colluvium. Cretaceous granitics, Paleozoic sandstone, Tertiary basalt, tuffs, quartz monzodiorite, and sedimentary rocks.	Mollisols (Haploxerolls, Argixerolls, Argicryolls, Haplocryolls), Inceptisols (Eutrocryepts)	Roanhide, Rainey, Vitale, Elksel, Moonstone, Mulshoe, Povey, Friedman, Starhope, Ketchum, Dollarhide	Mesic, Frigid, Cryic/	12-22	60-120	20/35; 57/91	Sagebrush steppe/ Bluebunch wheatgrass, mountain and Wyoming big sagebrush, Thurber needlegrass, bluegrass, Idaho fescue, bitterbrush, snowberry.	Grass- and brush-covered. Mostly rangeland, wildlife habitat, and expanding rural residential development.
16g. High Glacial Drift-Filled Valleys	584	Glaciated. High elevation valleys with terraces, flood plains, outwash plains, moraines, alluvial fans, hills, wetlands, and lakes.	4700-8000/ 0-1000	Quaternary alluvium, glacial outwash, and glacial till. Tertiary rhyolite and Cretaceous granitic rocks.	Inceptisols (Cryaquepts, Dystrocryepts, Eutrocryepts), Mollisols (Cryaquolls, Haplocryolls, Argicryolls), Histosols (Cryosaprists)	Roseberry, Archabal, Donnel, Melton, McCall, Swede, Gestrin, Busterback, Castlepeak, Langer, Struggle, Redfish, Lilylake, Grandjean	Frigid, Cryic/ Xeric, Udic, and small areas of Aquic	Mostly 22-27	Mostly 60-80	8/30; 42/81	Sagebrush steppe, grand fir–Douglas-fir forest/ Moist sites: sedges, rushes, redtop, willows, aspen. Drier sites: Idaho fescue, mountain brome, mountain big sagebrush, snowberry, bluegrass. Valley floors: open stands of ponderosa pine, Douglas fir, lodgepole pine.	Grazing, logging, and small grain, clover, and seed potato farming. Expanding housing developments. Land use practices have increased sediment loads and elevated phosphorus levels in surface waters.
16h. High Idaho Batholith	1272	Glaciated. Jagged peaks and high mountain slopes with numerous cirques and tarns.	6000-11000/ 800-3000	Quaternary glacial till, colluvium, and alluvium. Tertiary extrusive and intrusive rocks, Cretaceous granitics, and Precambrian sedimentary and metamorphic rocks. Rock outcrops occur and talus deposits are common.	Inceptisols (Dystrocryepts, Eutrocryepts), Mollisols (Haplocryolls), Entisols (Cryopsamments, Cryorthents)	Bryan, Pyle, Hanks, Busterback, Castlepeak, Langer, Struggle, Yankeefork. Very stony soils are common.	Cryic/ Xeric, Udic	19-50+	10-60	0/28; 38/78	Alpine meadows–barren, western spruce–fir forest/ Above treeline: tundra, alpine grassland, meadows, wetlands. Rocky glacial cirques or exposed sites: subalpine fir, lodgepole pine, whitebark pine, mountain hemlock, and alpine larch as scattered trees, very open-canopied parklands, or krummholz.	Tundra, alpine grassland, meadowland, open high altitude forest, or just rockland. Wildlife habitat, grazing, recreation and some logging.
16i. South Clearwater Forested Mountains	2672	Partly glaciated. Dissected mountains. Lakes occur.	4100-9100/ 600-3000	Quaternary loess and volcanic ash. Cretaceous granitics, Precambrian metamorphic, metasedimentary, and sedimentary rocks; also some Tertiary igneous basalt and granite.	Inceptisols (Haploxerepts, Cryaquepts), Entisols (Cryorthents), Mollisols (Haplocryolls), Alfisols (Haploxeralfs), Andisols (Udivitrands)	Quartzburg, Cramont, Honeyjones, Ligget, Jughandle	Cryic, Frigid/ Xeric, Udic	22-45	Less than 30-90	9/31; 41/81	Mostly grand fir–Douglas-fir forest and western spruce-fir forest/ Grand fir, Douglas-fir, Pacific yew, western larch, ponderosa pine, subalpine fir.	Forested. Logging, livestock grazing, recreation, wildlife habitat, and mining. Streams are subject to sediment loading when soils are disturbed. Gold mining has heavily affected rivers.
16j. Hot Dry Canyons	1509	Unglaciated. Deep, precipitous canyons.	2000-7800/ 1900-5000	Pleistocene glacial drift, alluvium, and colluvium. Tertiary intrusives and rhyolite, Cretaceous granitics, Jurassic granitics, Permian schist, and Precambrian quartzite, gneiss, and schist. Rock outcrops occur.	Mollisols (Argixerolls)	Howcan, Klickson, Bluesprin, Tannahill, Suloaf	Frigid, Mesic/ Xeric	12-35. Lowest in deepest canyons.	30-100+	16/33; 48/89. Warmer with increasing canyon depth.	Western ponderosa pine forest/ South-facing slopes: mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, ponderosa pine. North-facing slopes: Douglas-fir, ponderosa pine.	Forest-, brush-, and grass-covered. Logging, livestock grazing, wildlife habitat, mining, transportation, and recreation.
16k. Southern Forested Mountains	10071	Partly glaciated. Mountains. A few lakes occur.	3400-8500/ 1000-4000	Quaternary glacial deposits and alluvium. Mostly Cretaceous igneous rocks. Also, Tertiary basalt and Precambrian quartzite, phyllite, and undifferentiated metamorphics.	Mollisols (Haplocryolls), Entisols (Cryopsamments), Inceptisols (Eutrocryepts, Dystrocryepts). Often andic.	Pyle, Jugson, Bryan, Broad Canyon, Bluebell, Ticanot. Droughty, highly erodible soils of low fertility have developed from granitic rocks.	Cryic/ Mostly Udic; also, some Xeric	14-45	Less than 30-80	8/32; 40/80	Grand fir–Douglas-fir forest, western ponderosa pine forest/ Douglas-fir, grand fir, western larch (in north), white fir, subalpine fir. In canyons: ponderosa pine, mountain mahogany, Idaho fescue, bluebunch wheatgrass.	Forested. Timber, mining, recreation, livestock grazing, and wildlife habitat. Streams subject to sediment loading when soils are disturbed.

17. MIDDLE ROCKIES

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F) or **Seasonality**	*Source: Kuchler, 1964	
17e. Barren Mountains	1817	Partially glaciated. Block faulted mountains with high basal elevations.	6800-10000+/ 600-3000	Quaternary glacial deposits and colluvium. Tertiary volcanics, faulted Mesozoic and Paleozoic sedimentary and metasedimentary rocks including quartzite and carbonate-rich rocks, and Precambrian metamorphics. Rock outcrops occur.	Inceptisols (Eutrocryepts), Mollisols (Calcicryolls, Argicryolls), Alfisols (Palecryalfs)	Gany, Koffgo, Edgway, Fitzwill	Cryic/ Udic, Xeric	18-30; lower elevations are usually semiarid	25-70	Long cold winters, moist springs.	Western spruce–fir forest, Douglas-fir forest/ North-facing slopes: open-canopied Douglas-fir–lodgepole pine–subalpine fir stands, aspen groves, sparse shrubs and grasses. South-facing slopes: mountain big sagebrush, mountain brush, sparse grasses. Over limestone: curleaf mountain mahogany.	Covered by open-canopied coniferous forests, aspen groves, sagebrush, mountain brush, and grasses. Grazing, logging, mining, recreation, and wildlife habitat.
17h. High Elevation Rockland Alpine Zone	391	Glaciated. Very high, often severely exposed mountains. Jagged peaks and tarns occur.	9000-12600+/ 400-2600	Quaternary glacial deposits and colluvium. Mesozoic and Paleozoic sedimentary and metasedimentary rocks. Rock outcrops are very common.	Mollisols (Haplocryolls), Entisols (Cryorthents), Inceptisols (Eutrocryepts)	Very gravelly to stony soils are common.	Cryic/ Udic	30+	30-60	Very long, cold winters.	Alpine meadows–barren/ Above timberline: tundra, alpine grassland, meadows, wetlands. At timberline: krummholz. In cirques: subalpine fir, whitebark pine.	Tundra, alpine grassland, meadowland, open high altitude forest, or just rockland. Summer grazing, recreation, and wildlife habitat.
17j. West Yellowstone Plateau	876	Glaciated. Volcanic plateau containing hot springs, springs, lakes, moraines, outwash plains, canyons, and scattered ridges and buttes.	6000-7800/ 200-1200	Quaternary loess, aeolian deposits, alluvium, colluvium, outwash deposits, and glacial till. Quaternary rhyolite, tuff, and basalt.	Inceptisols (Eutrocryepts, Cryaquepts), Mollisols (Argicryolls), Andisols (Vitricryands), Alfisols (Palecryalfs)	Fourme, Trude, Bootjack, Turnerville, Bradco, Castan, Island Park	Cryic/ Udic	15-40	50-95	2/26; 43/79	Douglas-fir forest, sagebrush steppe/ North-facing slopes or uplands: Douglas-fir, lodgepole pine, aspen, mountain mahogany. South-facing slopes: mountain big sagebrush, mountain brush, Idaho fescue.	Covered by a mix of trees, mountain brush, and sagebrush grassland. Recreation, logging, mining, grazing, and wildlife habitat.
17l. Gneissic-Schistose Forested Mountains	9	Glaciated. Mountains. Short time lag between rainfall and runoff peaks; flashy storm hydrographs. Low stream flows during droughts and freezing periods.	7500-9500/ 1600-2000	Quaternary glacial deposits and colluvium. Precambrian metamorphic rocks including dolomite, schist, and quartzite.	Mollisols (Haplocryolls, Argicryolls), Inceptisols (Dystrocryepts)	Raynoldson, Fourme, Trude, Lionhead, Kitchell	Cryic/ Udic, Xeric	18-40	30-70	1/26; 43/79	Western spruce–fir forest, Douglas-fir forest/ Douglas-fir, lodgepole pine, subalpine fir, mountain big sagebrush, Idaho fescue, bluebunch wheatgrass.	Forested. Grazing, wildlife habitat, recreation, logging, grass hay production.
17n. Cold Valleys	383	Unglaciated. Floodplains, stream terraces, wetlands, alluvial fans, and foothills.	5000-7500/ 0-800	Quaternary loess, alluvium, colluvium, and basalt. Tertiary conglomerate, Mesozoic sandstone, shale, mudstone, siltstone, claystone and limestone, and Paleozoic limestone and mudstone.	Mollisols (Argicryolls, Haploxerolls, Palecryolls, Cryaquolls, Haplocryolls)	Enochville, Ririe, Lanark, Tetonia, Rin, Robin, Dranyon, Nielsen	Mostly Cryic, also Frigid/ Xeric	13-22	40-90	11/30; 48/84	Mostly sagebrush steppe; some Douglas-fir forest/ Uplands: mountain big sagebrush, bluebunch wheatgrass, Idaho fescue, needlegrass, bluegrass, serviceberry, aspen. Bottomlands: basin wildrye, rushes, willows, sedges.	Mostly brush- and grass-covered or marshland. Native grasslands are grazed, but sizeable areas grow winter wheat, spring barley, alfalfa, potatoes. Contains Grays Lake National Wildlife Refuge.
17o. Partly Forested Mountains	1867	Partly glaciated. Steep mountains.	6000-9000+/ 400-2600	Quaternary loess, colluvium, alluvium, and ground moraines. Tertiary volcanics and tuffaceous sediments, Mesozoic limestone, sandstone, mudstone, and shale. Some Paleozoic limestone.	Mollisols (Haplocryolls, Argicryolls, Calcicryolls), Alfisols (Haplocryalfs, Palecryalfs), Inceptisols (Eutrocryepts, Dystrocryepts)	Dranyon, Judkins, Paulson, Pavohroo, Stringam, Koffgo, Lasac, Huckridge, Fritz, Sessions. Shallow, stony soils common.	Cryic/ Xeric, Udic	16-30	30-75	8/29; 45/82	Douglas-fir forest. Lower sites: sagebrush steppe/ North-facing sites, flatter uplands: Douglas-fir, aspen, lodgepole pine, mountain mahogany. South-facing sites: mountain big sagebrush, mountain brush, fescue.	Partly forested. Timber production, summer range, and wildlife habitat.
17aa. Dry Intermontane Sagebrush Valleys	1957	Unglaciated. Stream terraces, floodplains, benches, and alluvial fans in the rain shadow of mountains. Limited mountain runoff, highly permeable valley fill deposits, and low precipitation cause water availability to be low.	3800-6800/ 200-1000	Quaternary alluvium and thick, highly permeable valley fill deposits. Tertiary andesite, latite, basalt, tuffaceous conglomerate, sandstone, siltstone, and limestone, and Precambrian quartzite.	Aridisols (Haplocalcids, Natrargids, Haplocambids, Calcicryids, Haplodurids, Petrocryids), Mollisols (Endoaquolls, Haploxerolls)	Millhi, Leadore, Pahsimeroi, Mitring, Ringle, Paint, Arbus, Bartonflat, Whiteknob, Bluedome, Fandow, Leatherman	Frigid, Cryic/ Mostly Aridic; by springs and streams: Aquic	6-12	30-90	6/30; 48/85	Mostly sagebrush steppe/ Wyoming big sagebrush, bluebunch wheatgrass, Indian ricegrass, squirreltail, sedges, tufted hairgrass, rushes. On alkaline or saline soils: shadscale, greasewood.	Mostly brush- and grass-covered. Grazing, hay, pastureland, and small grain crops.
17ab. Dry Gneissic-Schistose-Volcanic Hills	2799	Unglaciated. Hills.	4000-9000/ 1100-2600	Quaternary alluvium, colluvium, and alluvial fan deposits. Quaternary rhyolite and basalt. Tertiary basalt, tuffs, andesite flows, and sedimentary rocks.	Aridisols (Natrargids, Haplocalcids, Haplodurids), Mollisols (Argixerolls, Argicryolls, Calcicryolls), Inceptisols (Eutrocryepts)	Millhi, Hagenbarth, Dacore, Koffgo, Farvant, Mitring, Parkalley, Zeelnot, Howcan	Frigid, Cryic/ Aridic, Xeric	7-22	30-100	-2/28; 40-79	Mostly sagebrush steppe/ Wyoming and mountain big sagebrush, Idaho fescue, low sagebrush, bluebunch wheatgrass, shadscale, Indian ricegrass; scattered pinyon pine, Utah juniper.	Shrub- and grass-covered. Primarily grazing, recreation, woodland, and wildlife habitat; also some irrigated alfalfa, barley, and pasture farming.
17ad. Western Beaverhead Mountains	240	Glaciated. Mountains.	6000-9100/ 1000-3100	Pleistocene glacial till, alluvium, and colluvium. Precambrian quartzite and argillite. Tertiary intrusive igneous rocks. Rock outcrops occur.	Inceptisols (Eutrocryepts), Mollisols (Calcicryolls, Haplocryolls, Argicryolls)	Koffgo, Hagenbarth, Gany, Lag, Clug. Shallow stony soils.	Cryic/ Xeric, some Udic	12-44	30-100	4/26; 44/84	Western spruce–fir forest/ South-facing slopes: mountain big sagebrush, mountain brush, bluebunch wheatgrass, and Idaho fescue. North aspects: Douglas-fir, aspen, lodgepole pine, subalpine fir.	Partly forested. Grazing, mining, logging, recreation, and wildlife habitat.

18. WYOMING BASIN

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
18c. Wet Valleys	207	Unglaciated. High elevation valleys containing nearly flat floodplains, low terraces, and flanking foothills and alluvial fans. Bottomlands are characterized by lakes, canals, and many wetlands.	Mostly 5900-6600/ 5-600	Quaternary alluvium and loess. Tertiary sandstone, Mesozoic limestone and shale, and Paleozoic limestone and mudstone.	Mostly Mollisols (Calciaquolls, Calcixerolls, Argixerolls)	Bear Lake, Lago, Bancroft. Many bottomland soils are poorly- to very poorly-drained. Some soils are affected by alkali.	Frigid/ West: Xeric. East: Ustic. Near streams: Aquic	10-16. In the rain shadow of mountains.	55-110	6/30; 47/85. Cold winters.	Sagebrush steppe/ Floodplains or terraces: sedges, rushes, cattails, bluegrass, clover. Alluvial fans or foothills: mountain big sagebrush, bluebunch wheatgrass, slender wheatgrass, Idaho fescue.	Brush- and grass-covered or marshland. Irrigated hayland, pasture, rangeland, and wildlife habitat.
18d. Semiarid Bear Hills	248	Unglaciated. Footslopes, alluvial fans, hills, ridges, and valleys.	6000-7400/ 50-1200	Quaternary alluvium and colluvium. Tertiary sandstone, siltstone and limestone. Rock outcrops occur.	Mollisols (Haploxerolls, Duricryolls, Calcixerolls), Inceptisols (Calcixerepts), Alfisols (Haploxeralfs)	Boundridge, Dagan, Sprollow, Richville, Bezzant, Cokeville, Cooley	Frigid, Cryic/ Xeric	12-20. In the rain shadow of mountains.	65-100	8/28; 44/84	Sagebrush steppe/ Bluebunch wheatgrass, bluegrass, mountain big sagebrush, serviceberry, snowberry. Ridgetops: low sagebrush, black sagebrush, bluebunch wheatgrass, bluegrass. Rocky areas: Utah juniper, curleaf mountain mahogany.	Mostly brush- and grass-covered. Mostly grazing and wildlife habitat.

19. WASATCH AND UINTA MOUNTAINS

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
19d. Wasatch Montane Zone	240	Partially glaciated mountains and plateaus. Perennial streams provide water to lower, more arid areas.	7000-9600/ 600-2600	Quaternary colluvium. Paleozoic quartzite, limestone, mudstone, and dolomite.	Mollisols (Argicryolls, Haploxerolls, Calcicryolls)	Dranyon, Nielsen, Aspen, Zeale, Dateman, Ireland	Frigid, Cryic/ Xeric, Udic	11-25. Deep winter snow pack.	10-90	8/28; 46/84	Douglas-fir forest, western spruce–fir forest/ North-facing slopes, flatter areas: Douglas-fir, aspen. South-facing slopes: mountain big sagebrush, snowberry, Idaho fescue, mountain bromegrass, needlegrass. Highest elevations: Englemann spruce, subalpine fir.	Forested. Primarily wildlife habitat and livestock grazing.
19f. Semiarid Foothills	398	Partially glaciated. Foothills.	5500-8200/ 600-2000	Quaternary alluvium, colluvium, loess, and lacustrine sediments. Tertiary siltstone and Paleozoic quartzite and limestone.	Mollisols (Haploxerolls, Calcicryolls, Argixerolls, Cryaquolls), Inceptisols (Calcixerepts), Vertisols (Calcixererts)	Aspen, Zeale, Sprollow, Bancroft, Joes, Brifox, Niter, Enochville	Frigid, Cryic/ Mostly Xeric; some Aquic	12-18	60-100	8/30; 48/84	Sagebrush steppe/ Mountain big sagebrush, bluebunch wheatgrass, and scattered Utah juniper.	Shrub- and grass-covered. Livestock grazing, wildlife habitat, and small grain and alfalfa farming.

80. NORTHERN BASIN AND RANGE

Level IV Ecoregion		Physiography		Geology	Soil			Climate			Potential Natural Vegetation*/ Present Vegetation	Land Use and Land Cover
	Area (square miles)		Elevation/ Local Relief (feet)	Surficial and bedrock	Order (Great Groups)	Common Soil Series	Temperature/ Moisture Regimes	Precipitation Mean annual (inches)	Frost Free Mean annual (days)	Mean Temperature January min/max; July min/max (°F)	*Source: Kuchler, 1964	
80a. Dissected High Lava Plateau	5364	Unglaciated. Alluvial fans, rolling plains, hills, and shear-walled canyons cut into extrusive rocks. Externally-drained.	4000-6000/ 0-900	Quaternary alluvium, colluvium, and loess. Tertiary rhyolite, basalt, and tuffaceous rocks.	Aridisols (Argidurids, Haplodurids, Haplargids, Haplocalcids, Durargids), Mollisols (Haploxerolls)	Purdam, Colthorp, Raftriver, Xerxes, Aysees, Bruncan, Heckison, Roseworth, Arbidge	Frigid, Mesic/ Aridic, Xeric	8-18	75-145	15/38; 48/87	Sagebrush steppe/ Wyoming big sagebrush, Thurber needlegrass, bluebunch wheatgrass, bluegrass, western wheatgrass, cheatgrass. Rocky uplands: Utah juniper.	Brush- and grass-covered. Mostly rangeland and wildlife habitat. Some pastureland and cropland primarily producing hay and small grains.
80b. Semiarid Hills and Low Mountains	3567	Unglaciated. Mountain slopes, hills, and alluvial fans.	4600-7000/ 200-2000	Quaternary loess, alluvium, colluvium, and basalt. Tertiary volcanics, tuffaceous rocks, and sedimentary rock, Paleozoic schist, quartzite, siltstone, sandstone, and limestone.	Mollisols (Haploxerolls, Argixerolls, Calcixerolls), Entisols (Torriorthents), Aridisols (Haplocambids)	Newdale, Swanner, Coalbank, Pocatello, Neeley, Mackey, Ririe, Camelback, Rexburg, Ireland, Jimsage, Cedarhill	Frigid, Mesic/ Xeric, Aridic	8-20	50-110	11/33; 46/80	Mostly sagebrush steppe/ Mountain big sagebrush, low sagebrush, bluebunch wheatgrass, cheatgrass, bluegrass, Idaho fescue, needleandthread, snowberry, serviceberry, Utah juniper. Alluvial fans and by drainages: aspen, lodgepole pine, Douglas-fir.	Mostly brush- and grass-covered. Primarily livestock grazing and wildlife habitat. Some dryland farming of small grains and irrigated farming for potatoes, sugar beets, and alfalfa. A few feedlots occur.
80c. High Elevation Forests and Shrublands	943	Partly glaciated. Steep mountain slopes and peaks.	6000-9000/ 600-2200	Quaternary alluvium and colluvium, loess, and basalt. Tertiary volcanics, Paleozoic schists, quartzite, limestone, dolomite, sandstone, and siltstone, and Precambrian quartzite.	Mollisols (Haplocryolls, Haploxerolls, Argicryolls), Inceptisols (Eutrocryepts), Entisols (Torriorthents)	Pavohroo, Ridgecrest, Sedgway, Moohoo, Nagitsy, Povey, Dranyon	Frigid, Cryic/ Xeric, Udic	12-30+	25-90	9/31; 50/86	Mostly western spruce–fir forest/ North-facing slopes and flats: Douglas-fir, aspen, snowberry, lodgepole pine. South-facing slopes: mountain big sagebrush, serviceberry, snowberry, Idaho fescue, chokecherry, mountain brome, bluegrass, bluebunch wheatgrass.	Covered by a mix of conifers, mountain brush, and sagebrush grassland. Livestock grazing, wildlife habitat, recreation, and timber production.
80e. High Desert Wetlands	105	Unglaciated. High desert lakes and surrounding wetlands. Water levels fluctuate seasonally and from year to year.	5300-5400/ 0-100	Quaternary alluvium and basin-fill deposits. Pliocene basalt flows.	Mollisols (Endoaquolls, Haploxerolls), Alfisols (Durixeralfs, Haploxeralfs)	Welch, Tucker, Bluecreek, Thacker, Soonahbe	Frigid/ Xeric, Aquic	9-16	60-100	13/37; 49/86	Wheatgrass–bluegrass, sagebrush steppe/ Sedges, meadow barley, creeping wildrye, basin wildrye, Idaho fescue, basin big sagebrush, Nevada bluegrass. bluebunch wheatgrass.	Brush- and grass-covered. Mostly rangeland and wildlife habitat. Lakes and wetlands provide critical habitat for nesting and migratory birds.
80f. Owyhee Uplands and Canyons	1293	Unglaciated. Deep, precipitous river canyons, lava fields, badlands, and tuffaceous outcrops that are riddled by caves.	3000-6600/ 200-2000	Quaternary colluvium and alluvium. Tertiary rhyolite, tuffaceous rocks, basalt flows, and sedimentary rock and Cretaceous granitic intrusions.	Alfisols (Durixeralfs, Haploxeralfs), Aridisols (Petroargids, Calcids), Mollisols (Argixerolls)	Gariper, Snell, Fairylawn, Willhill, Hat, Kanlee, Wickahoney	Frigid, Mesic/ Aridic, Xeric	10-20	50-115	20/39; 52/86	Mostly sagebrush steppe/ Wyoming big sagebrush, bluebunch wheatgrass, low sagebrush, Idaho fescue, bluegrass, squirrelltail, bitterbrush, western juniper.	Mostly brush- and grass-covered. Mostly rangeland and wildlife habitat. Some hay and small grain farming.
80h. Saltbush-Dominated Valleys	438	Unglaciated. Gently sloping valleys that drain to the Snake River.	4500-5400/ 0-400	Quaternary alluvium and lacustrine sediments.	Aridisols (Haplocalcids, Natrargids)	Declo, Strevell, Darkbull, Mellor. Soils are dry for extended periods, light-colored, and moderately to strongly alkaline.	Mesic/ Aridic	8-12	95-135	16/34; 52/88	Saltbush–greasewood/ Mostly shadscale, greasewood, Nuttall saltbush, squirreltail, winterfat; also, basin sagebrush, Wyoming big sagebrush, bluebunch wheatgrass, needlegrass, bluegrass, Indian ricegrass.	Covered by alkaline-tolerant brush and grass. Rangeland, irrigated cropland, and wildlife habitat. Principal crops are alfalfa, small grains, pasture, sugar beets, and corn.
80i. Sagebrush Steppe Valleys	1865	Unglaciated. Gently sloping terraces, valley bottoms, basin rims, and alluvial fans.	4600-6500/ 0-800	Quaternary loess, silty alluvium, basalt, Tertiary siltstone and Paleozoic quartzite, dolomite, and limestone.	Mollisols (Palecryolls, Argicryolls, Haploxerolls), Aridisols (Haplocalcids, Haplargids)	Robin, Lanark, Neeley, Newdale, Bedke, Bahem, Bancroft, Conneridge, Arimo, Ririe, Rexburg	Frigid, Mesic/ Xeric, Aridic	8-25	80-135	10/30; 47/84	Sagebrush steppe/ Mountain big sagebrush, bluebunch wheatgrass, streambank wheatgrass, Idaho fescue, cheatgrass, bluegrass, aspen.	Brush- and grass-covered. Primarily livestock grazing, dryland wheat and barley farming, and irrigated alfalfa production.
80j. Semiarid Uplands	614	Unglaciated. Hills, low mountains, volcanic cones, buttes, and rocky outcrops rising from high lava plains as well as mid-elevation zones of the Owyhee and Jarbidge mountains.	5500-7500/ 200-2000	Quaternary colluvium and alluvium. Tertiary volcanics including rhyolite, latite, and basalt flows, Cretaceous granitic intrusions, and Paleozoic metamorphic rock.	Mollisols (Haplocryolls, Argixerolls), Alfisols (Haploxeralfs)	Keman, Cleavage, Avtable, Hat. Rock outcrops occur.	Frigid, Cryic/ Xeric	12-20	40-90	13/38; 48/85	Juniper steppe woodland, sagebrush steppe/ Mountain big sagebrush, snowberry, low sagebrush, antelope bitterbrush, bluebunch wheatgrass, squirreltail, bluegrass, Idaho fescue, mountain bromegrass. Rocky sites: western juniper. Jarbidge Mountains: juniper woodlands can be of limited extent or entirely absent.	Woodland-, brush-, and grass-covered. Livestock grazing and wildlife habitat.
80k. Partly Forested Mountains	38	Unglaciated. Higher elevations of the Owyhee mountains.	6500-8000/ 600-1500	Quaternary alluvium and colluvium. Tertiary rhyolite, latite, and basalt flows and Cretaceous granitic intrusions.	Mollisols (Argicryolls, Haplocryolls)	Parkay, Wareagle, Naz, Nazaton, Povey, Foxmount	Cryic/ Xeric	16-30+	25-80	18/38; 53/80	Grand fir–Douglas-fir forest/ Douglas-fir, ponderosa pine, mountain big sagebrush, serviceberry, snowberry, Idaho fescue, bluebunch wheatgrass, bluegrass.	Partly forested. Livestock grazing and wildlife habitat.

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