

Appendix A - Summary of GIS data layers used in the Clearwater subbasin assessment and their associated sources and scales

Table 70. GIS data layers used in the Clearwater subbasin assessment.

General Description	Source	Scale/Resolution
States	ICBEMP	1:100,000
Counties	ICBEMP	1:100,000
Cities	ICBEMP	1:100,000
HUCs – 4 th code	ICBEMP	1:100,000
HUCs – 6 th code	ICBEMP	1:100,000
Assessment Units	WSU	1:100,000
Digital Elevation Model (DEM)	USGS	30m grid cells
Major Rivers	ICBEMP	1:2,000,000
Streams	Streamnet	1:250,000
Streams	Streamnet	1:100,000
Flow Variation	Lipscomb (1998)	
Dams	IDWR	1:100,000
303(d) listed stream segments	Updated from ICBEMP	1:100,000
Lithology	IDWR	1:500,000
Mines (Hazard Ratings)	ICBEMP	Point data
Mine Claim Density	ICBEMP	1:500,000
Precipitation	PRISM	2.25 minute
Avg. Annual Temperature	ICBEMP	None given
Land Cover (Use)	Idaho GAP data from Univ. of Idaho Landscape Dynamics Lab	1:100,000
Land Ownership	Idaho Gap NPT – Land Services Dept. Potlatch Corporation	1:100,000 1:24,000 1:24,000
Historic Vegetation	ICBEMP	1km grid cells
Current Vegetation (for comparison to historic)	ICBEMP	1km grid cells
Current Vegetation	Idaho GAP	30m grid cells
Vegetation Structural Stage - Current	ICBEMP	1km grid cells
Vegetation Structural Stage - Historic	ICBEMP	1km grid cells
Starthistle Distribution	Idaho Weed Watchers	Unspecified
Knapweed Distribution	Idaho Weed Watchers	Unspecified
Historic Fire Regime	ICBEMP	1km grid cells
Current Fire Re gime	ICBEMP	1km grid cells
Fire History	USFS (NPNF and CNF)	Variable

General Description	Source	Scale/Resolution
Sensitive Plants/ Animals	IDFG-CDC	Point data
Fish Distributions/Status	Derived	6 th Field HUC
Carrying Capacity (Steelhead and Spring Chinook)	NPPC Presence/Absence database (Streamnet)	1:250,000
Habitat Quality (Steelhead and Spring Chinook)	NPPC Presence/Absence database (Streamnet)	1:250,000
Constraints (Steelhead and Spring Chinook)	NPPC Presence/Absence database (Streamnet)	1:250,000
Index of Culvert Numbers	WSU	1:100,000
Section 7 Watersheds	ICBEMP	1:500,000
Bull Trout Key watersheds	WSU	1:100,000
Critical Habitat – Fall Chinook	WSU	1:250,000
Roads	USFS road layers (USFS property) USGS quad map layers (Non-USFS property)	1:24,000 1:24,000
Protected Areas (Excludes Roadless Areas)	ICBEMP	1:24,000 – 1:500,000
Inventoried Roadless Areas	USDA Forest Service	1:24,000 – 1:198,000
Grazing Allotments	USDA Forest Service (NPNF and CNF)	Unspecified
Grazeable lands	USGS GIRAS database	1:250,000

Appendix B - Maps showing water quality limited stream segments listed on IDEQ's 1998 303(d) list

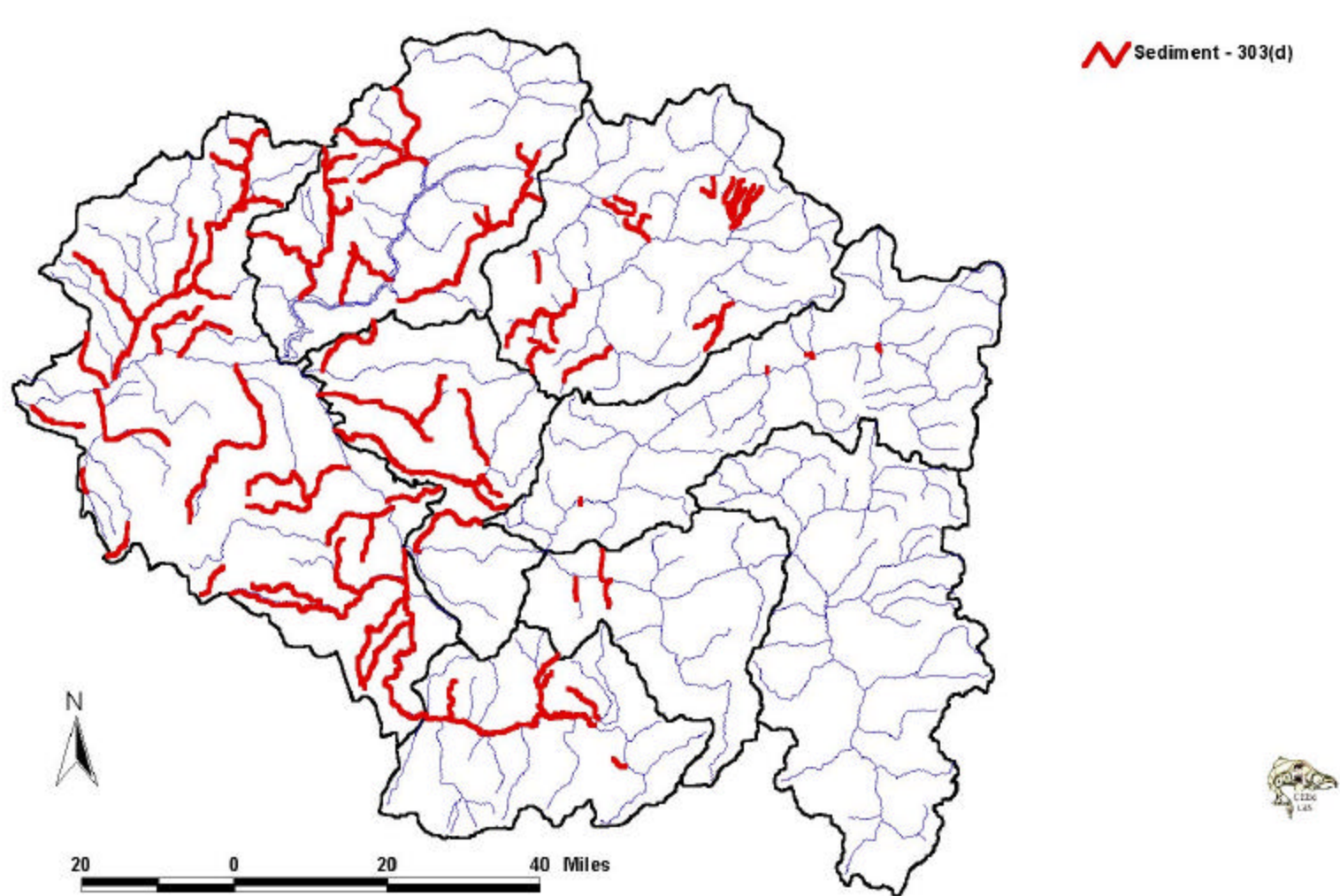


Figure 118. Distribution of water quality limited stream segments listed on the 1998 303(d) list by IDEQ for impairment due to sediment

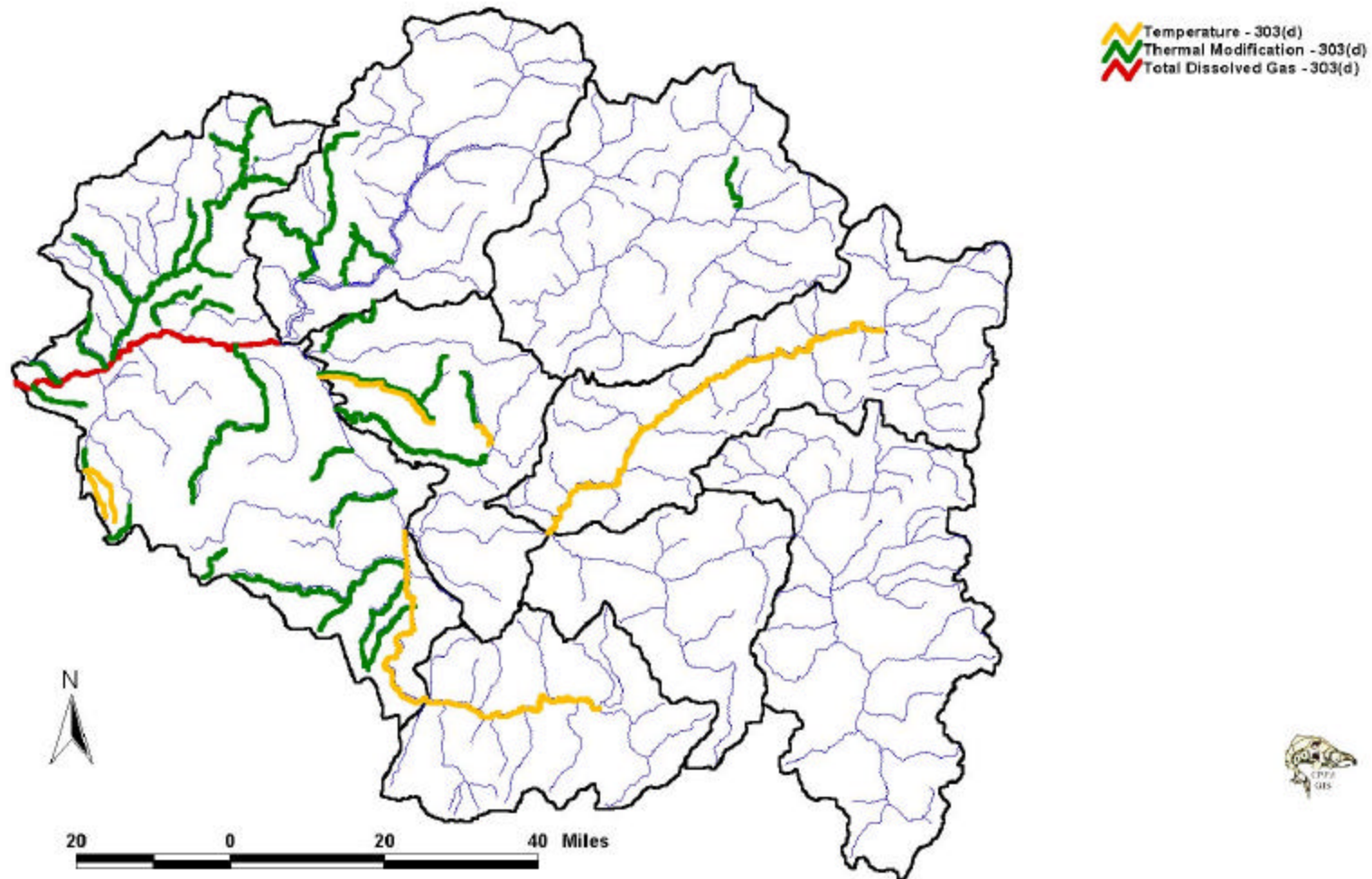


Figure 119. Distribution of water quality limited stream segments listed on the 1998 303(d) list by IDEQ for impairment due to temperature, thermal modification, and total dissolved gas

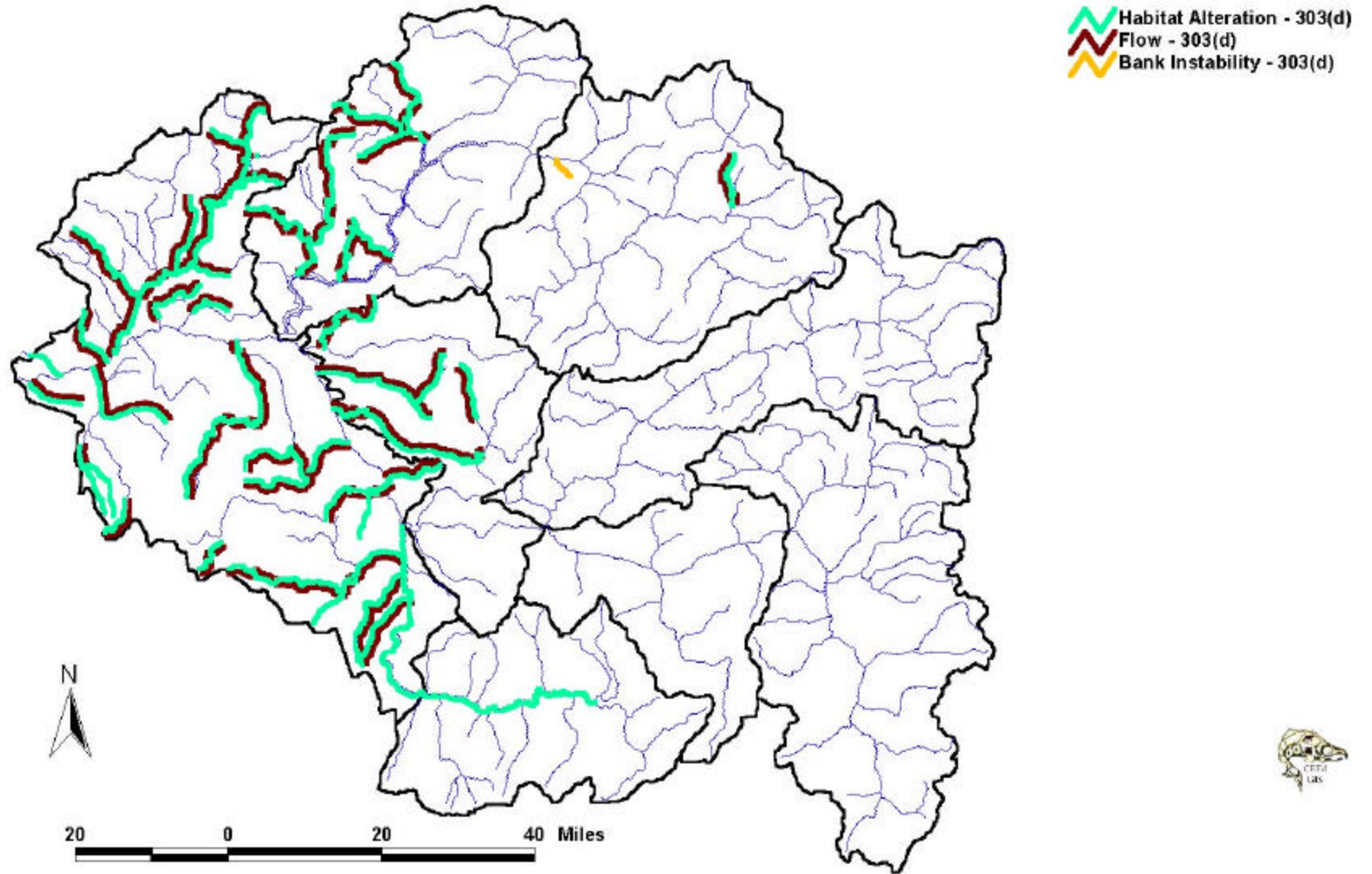


Figure 120. Distribution of water quality limited stream segments listed on the 1998 303(d) list by IDEQ for impairment due to habitat alteration, flow, and bank instability

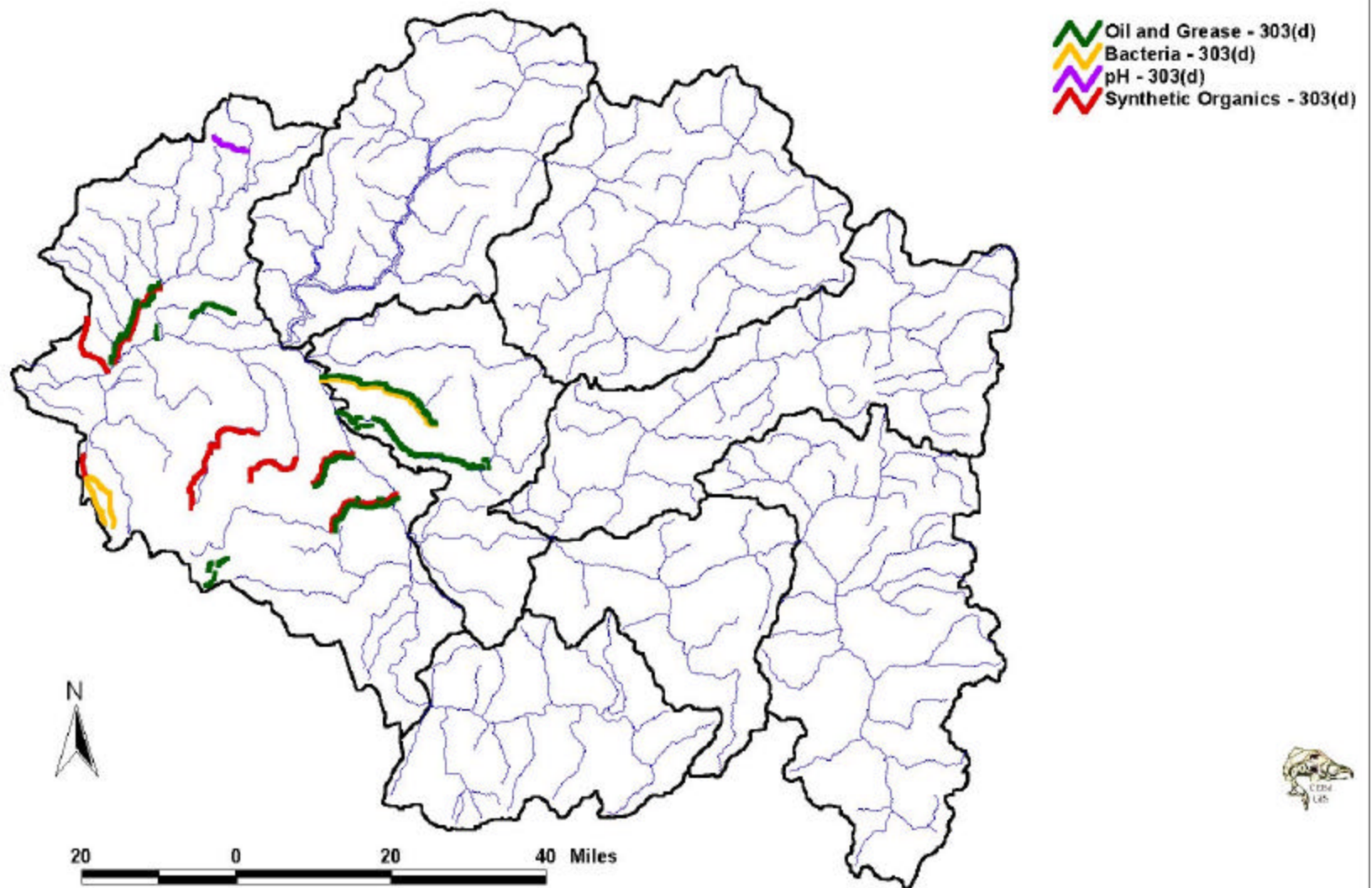


Figure 121. Distribution of water quality limited stream segments listed on the 1998 303(d) list by IDEQ for impairment due to oil and grease, bacteria, pH, and synthetic organics

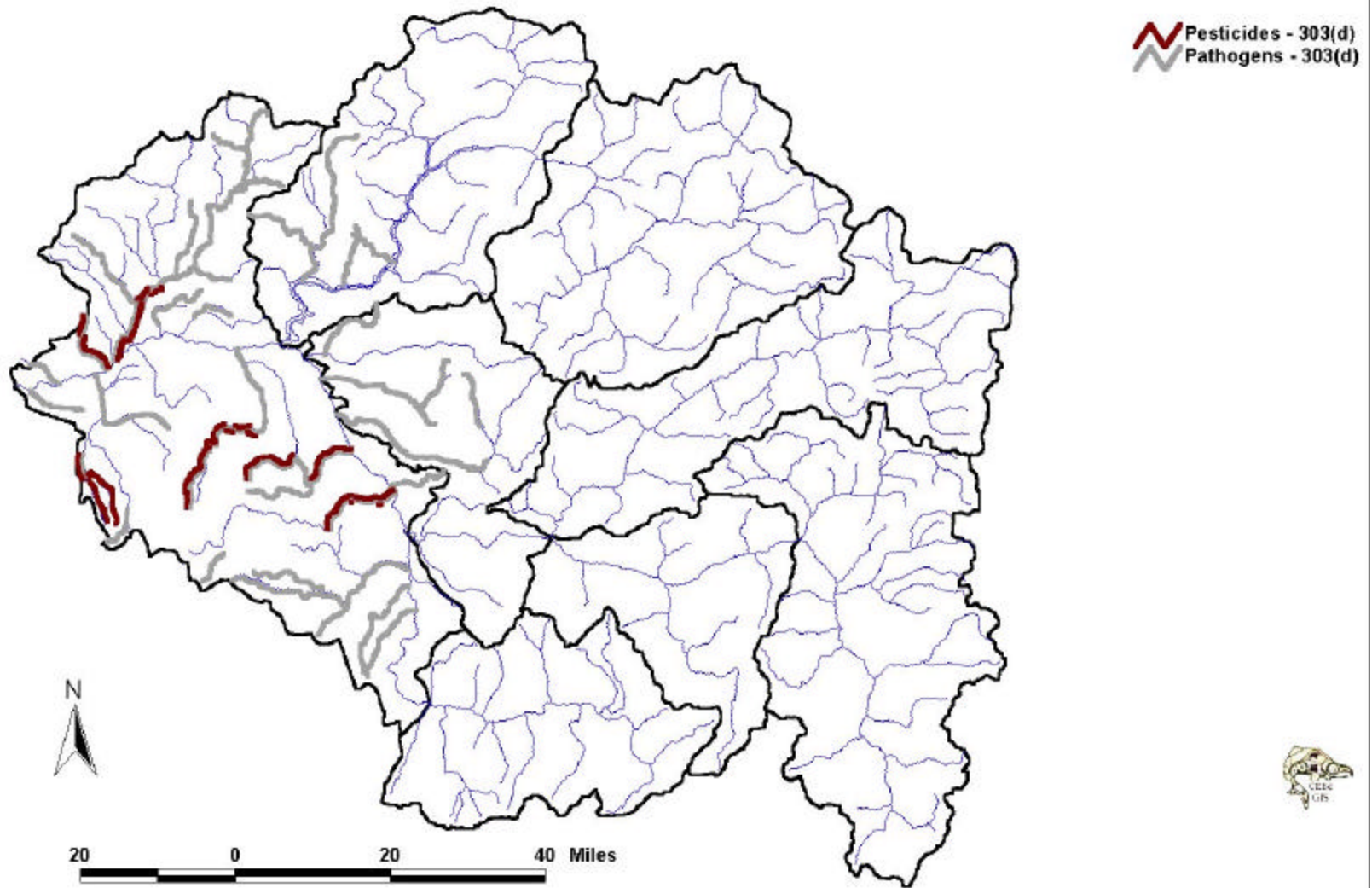


Figure 122. Distribution of water quality limited stream segments listed on the 1998 303(d) list by IDEQ for impairment due to pesticides and pathogens

Appendix C - Cover types by 4th, 5th and 6th field HUC's

Appendix C is an Excel file containing vegetative cover data by 4th, 5th and 6th field HUC's. It is available as a separate file in conjunction with the Species /Habitat Matrix. It is available on a CD titled "Draft Clearwater Terrestrial Assessment – Appendices and Associated Tables (contact the Nez Perce Tribe via asondenna@nezperce.org to obtain these data on CD). The CD contains (1) the species-habitat matrix; (2) Appendices C, D, E, and F; (3) GAP models used to create the cover maps, and (4) maps of potential breeding habitat for the terrestrial focal species described in this document.

These data are displayed as square kilometers of each cover type by HUC. These data were derived from GAP data so should be viewed with some caution⁵. They are provided here for general use by land managers in designing research or management projects.

⁵ The matrix is derived from GAP 2 Analysis models using ArcView 3.2. The models were converted from TIF files to grid themes with a 30 meter pixel coverage. The area of hypothesized habitat for each plant and animal species was then calculated using Spatial Analyst. The data received was entered and tabulated in Excel for the purpose of calculating vegetation cover area in acres and square kilometers.

These data were developed from the Idaho Gap Analysis Project. No guarantee expressed or implied is made regarding the accuracy or utility of the data. These data are meant to be used at a scale of 1:100,000 or smaller (such as 1:250,000 or 1:500,000) for the purpose of assessing the conservation status of animals and vegetation types over large geographic regions. Any analysis modeling using the 6th HUC is approaching the scale at which it was not intended.

Appendix D – Special status plants (including non-vascular species)

The Clearwater subbasin is inhabited by numerous rare and unique plant species (Table 71). Varying climates, steep topography, and a large elevational gradient all contribute to the diversity of habitats occupied by these rare species. This appendix is provided to give the reader a general overview of the rare or unique species found in the Clearwater subbasin. All of the species listed here are tracked by the Idaho Conservation Data Center in Boise, as well as local land management agencies. All should be considered sensitive and treated accordingly. Collecting or damage of habitats or populations should be avoided.

Rare plant species within the Clearwater subbasin are split into three major groups:

1. GLOBALLY RARE = Species and varieties or subspecies (taxa) rare throughout their range.
2. STATE RARE = Taxa rare within the political boundaries of Idaho, but more common elsewhere.
3. REVIEW = Global and State rare taxa which may be of conservation concern in Idaho, but lack sufficient data to base a recommendation regarding their appropriate classification.

Global conservation ranks used to assign taxa to the first two groups are based on a system developed by The Nature Conservancy and used by the Natural Heritage and Conservation Data Center network. This is a one-through-five ranking system. For the INPS list, G1-G3 taxa are considered GLOBALLY RARE, while G4 or G5 taxa that are rare in Idaho are assigned to one of the STATE RARE categories.

GLOBALLY RARE SPECIES

Globally Rare species are assigned to one of four INPS categories: Globally Extinct (GX), Global Priority 1 (G1), Global Priority 2 (G2), or Global Priority 3 (G3). The Global ranks are defined below. In addition, each globally rare species that is not currently listed as Endangered or Threatened under the federal Endangered Species Act receives a Threat Priority rank. This one-through-twelve rank is based on the old U.S. Fish and Wildlife Service (USFWS) Listing Priority criteria explained below. In the past, these rankings have helped the INPS make recommendations to the USFWS for the federal Candidate list, as well as for Conservation Agreements, as part of the Idaho Conservation Effort.

DEFINITIONS

USFWS Status:

ENDANGERED = taxa in danger of extinction throughout all or a significant portion of their range (none in Idaho).

THREATENED = taxa likely to become endangered in the foreseeable future throughout all or a significant portion of their range.

CANDIDATE = taxa for which substantial biological information exists on file to support a proposal to list as Endangered or Threatened, but no proposal has yet been published in the Federal Register.

Global Rank:

G = Global rank indicator; denotes rank based on rangewide status.

T = Trinomial rank indicator; denotes rangewide status of variety or subspecies.

X = Considered extinct throughout its range.

1 = Critically imperiled because of extreme rarity or because of some factor of its biology making it especially vulnerable to extinction (typically 5 or fewer occurrences).

2 = Imperiled because of rarity or because of other factors demonstrably making it very vulnerable to extinction (typically 6 to 20 occurrences).

3 = Rare or uncommon, but not imperiled (typically 21 to 100 occurrences).

4 = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences).

5 = Demonstrably widespread, abundant, and secure.

STATE RARE SPECIES

State Rare species are assigned to one of five categories: Possibly Extirpated, State Priority 1, State Priority 2, Sensitive, or Monitor.

Possibly Extirpated = Taxa which are known in Idaho only from historical (pre-1920) records or are considered extirpated from the state.

State Priority 1 = A taxon in danger of becoming extinct or extirpated from Idaho in the foreseeable future if identifiable factors contributing to its decline continue to operate; these are taxa whose populations are present only at critically low levels or whose habitats have been degraded or depleted to a significant degree.

State Priority 2 = A taxon likely to be classified as Priority 1 within the foreseeable future in Idaho, if factors contributing to its population decline or habitat degradation or loss continue.

Sensitive = A taxon with small populations or localized distributions within Idaho that presently do not meet the criteria for classification as Priority 1 or 2, but whose populations and habitats may be jeopardized without active management or removal of threats.

Monitor = Taxa that are common within a limited range as well as those taxa which are uncommon, but have no identifiable threats (for example, certain alpine taxa).

Many species also receive Sensitive (S) or Watch (W) rankings by Federal agencies such as the Forest Service or Bureau of Land Management.

Table 71. Alphabetical listing of rare or sensitive plant species known to occur within the Clearwater subbasin from <http://www2.state.id.us/fishgame/info/cdc/cdc.htm>

LATIN NAME	COMMON NAME	Global Rank	State Rank	FS or BLM
<i>Allotropa virgata</i>	Candystick	G4	S3	S
<i>Asplenium trichomanes</i>	Maidenhair spleenwort	G5	S1	S
<i>Aster jessicae</i>	Jessica's Aster	G2	S2	S (BLM)
<i>Astragalus paysonii</i>	Payson's milkvetch	G3	S3	S
<i>Blechnum spicant</i>	Deerfern	G5	S3	S
<i>Botrychium crenulatum</i>	Crenulate moonwort	G3	S1	S
<i>Botrychium lanceolatum</i> var. <i>lanc.</i>	Lance-leaf grape-fern	G5T4	S3	S
<i>Botrychium minganense</i>	Mingan moonwort	G4	S3	S
<i>Botrychium montanum</i>	Mountain moonwort	G3	S1	S (FS)
<i>Botrychium pinnatum</i>	Northern grape-fern	G4?	S2	S
<i>Botrychium simplex</i>	Least moonwort	G5	S1	S
<i>Buxbaumia aphylla</i> (moss)	Leafless bug-on-a-stick	G2G3	SH	S
<i>Buxbaumia viridis</i> (moss)	Green bug-on-a-stick	G4	~	S (FS)
<i>Calochortus nitidus</i>	Broadfruit mariposa	G3	S3	S
<i>Cardamine constancei</i>	Constance's bittercress	G3	S3	S
<i>Carex buxbaumii</i>	Buxbaum's sedge	G5	S3	S
<i>Carex hendersonii</i>	Henderson's sedge	G5	S3	S
<i>Carex leptalea</i>	Bristle-stalked sedge	G5	S2	S (FS)
<i>Cetraria subalpina</i> (lichen)	Subalpine cetraria	G2G3	?	S
<i>Cladonia andereggii</i> (lichen)	Anderegg's cladonia	G1	S1	S
<i>Cornus nuttallii</i>	Pacific dogwood	G4	S1	S
<i>Corydalis caseane</i> ssp. <i>hastata</i>	Case's corydalis	G5T3	S3	~
<i>Cypripedium fasciculatum</i>	Clustered ladyslipper	G4	S3	S
<i>Dasynotus daubenmirei</i>	Dasynotus	G2	S3	S (FS)
<i>Dodecatheon dentatum</i>	White shooting star	G4	S3	W (BLM)
<i>Douglasia idahoensis</i>	Idaho douglasia	G2	S2	S (FS)
<i>Eburophyton austiniiae</i>	Phantom orchid	G4	S3	W (BLM)
<i>Haplopappus hirtus</i> var. <i>sonchifolius</i>	Sticky goldenweed	G4T3	S1	S

LATIN NAME	COMMON NAME	Global Rank	State Rank	FS or BLM
<i>Haplopappus liatrisformis</i>	Palouse Goldenweed	G2	S2	S (BLM)
<i>Hookeria lucens</i> (moss)	Light hookeria	G5	S1	S (FS)
<i>Hypogymnia apinnata</i> (lichen)	Tube lichen	G4	S1	S (BLM)
<i>Lobaria hallii</i> (lichen)	Hall's lungwort	G4	S1	S (BLM)
<i>Lomatium dissectum</i> var. <i>dissectum</i>	Fern-leaved desert parsley	G5T5	S3	W (BLM)
<i>Lomatium salmoniflorum</i>	Salmon-flowered desert parsley	G3	S2	S
<i>Mertensia bella</i>	Oregon bluebells	G4	S3	~
<i>Mimulus alsinoides</i>	Chickweed monkeyflower	G5	S1	S (FS)
<i>Mimulus ampliatus</i>	Spacious monkeyflower	G1	S1	S
<i>Mimulus clivicola</i>	Bank monkey-flower	G4	S3	S (BLM)
<i>Pentagramma triangularis</i> spp. <i>triang.</i>	Gold-back fern	G5T5	S1	S (FS)
<i>Petasites frigidus</i> var. <i>palmatius</i>	Sweet coltsfoot	G5T5	S1	S (FS)
<i>Petasites sagittatus</i>	Arroeleaf coltsfoot	G5	S3	S (FS)
<i>Phlox idahonis</i>	Clearwater Phlox	G1	S1	~
<i>Pilophorus acicularis</i> (lichen)	Nail lichen	G4	S1	S (BLM)
<i>Polypodium glycyrrhiza</i>	Licorice fern	G5	S1	S (FS)
<i>Pseudocyphellaria anthraxis</i> (lichen)	White-dot lichen	G4	S1	~
<i>Psilocarphus tenellus</i>	Slender woolly-heads	G4	SH	S (BLM)
<i>Rhizomnium nudum</i>	Naked-stem rhizomnium	?	~	S (FS)
<i>Rubus spectabilis</i>	Salmonberry	G5	S1	~
<i>Silene spaldingii</i>	Spalding's silene	G2	S1	S (BLM)
<i>Sphaerophorus globosus</i> (lichen)	Tuckermann's ball-bearing lichen	G5	S1	~
<i>Synthyris platycarpa</i>	Evergreen kittentail	G3	S3	S (FS)
<i>Tauschia tenuissima</i>	Leiberg's tauschia	G3	S3	W (BLM)
<i>Thelypteris nevadensis</i>	Sierra wood-fern	G4	S1	S (FS)
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>	Short-styled triantha	G5T4	S1	S (FS)
<i>Trientalis latifolia</i>	Western starflower	G5	S3	S (FS)
<i>Trifolium plumosum</i> var. <i>amplifolium</i>	Plumed clover	G4T2	S2	S (BLM)
<i>Waldsteinia idahoensis</i>	Idaho barren strawberry	G3	S3	S

Table 72. Rare or sensitive plant species in the Clearwater subbasin listed in rank order based on rarity and known threats from <http://www2.state.id.us/fishgame/info/cdc/cdc.htm>

LATIN NAME	COMMON NAME	Global Rank	State Rank	FS or BLM
<i>Cladonia andereggii</i> (lichen)	Anderegg's cladonia	G1	S1	S
<i>Phlox idahonis</i>	Clearwater Phlox	G1	S1	~
<i>Mimulus ampliatus</i>	Spacious monkeyflower	G1	S1	S
<i>Silene spaldingii</i>	Spalding's silene	G2	S1	S (BLM)
<i>Haplopappus liatriformis</i>	Palouse Goldenweed	G2	S2	S (BLM)
<i>Aster jessicae</i>	Jessica's Aster	G2	S2	S (BLM)
<i>Douglasia idahoensis</i>	Idaho douglasia	G2	S2	S (FS)
<i>Dasynotus daubenmirei</i>	Dasynotus	G2	S3	S (FS)
<i>Buxbaumia aphylla</i> (moss)	Leafless bug-on-a-stick	G2G3	SH	S
<i>Cetraria subalpina</i> (lichen)	Subalpine cetraria	G2G3	?	S
<i>Botrychium montanum</i>	Mountain moonwort	G3	S1	S (FS)
<i>Botrychium crenulatum</i>	Crenulate moonwort	G3	S1	S
<i>Calamagrostis tweedyi</i>	Cascade reed grass	G3	S1	S (BLM)
<i>Sedum borschii</i>	Borch's stonecrop	G3	S2	~
<i>Lomatium salmoniflorum</i>	Salmon-flowered desert parsley	G3	S2	S
<i>Sullivantia hapemanii</i> var <i>hapemanii</i>	Hapeman's sullivantia	G3T3	S2	~
<i>Calochortus nitidus</i>	Broadfruit mariposa	G3	S3	S
<i>Cardamine constancei</i>	Constance's bittercress	G3	S3	S
<i>Astragalus paysonii</i>	Payson's milkvetch	G3	S3	S
<i>Synthyris platycarpa</i>	Evergreen kittentail	G3	S3	S (FS)
<i>Tauschia tenuissima</i>	Leiberg's tauschia	G3	S3	W (BLM)
<i>Astragalus paysonii</i>	Payson's milkvetch	G3	S3	S
<i>Waldsteinia idahoensis</i>	Idaho barren strawberry	G3	S3	S
<i>Synthyris platycarpa</i>	Evergreen kittentail	G3	S3	S (FS)
<i>Tauschia tenuissima</i>	Leiberg's tauschia	G3	S3	W (BLM)
<i>Phacelia lyallii</i>	Lyall's phacelia	G3G4	S2	~
<i>Buxbaumia viridis</i> (moss)	Green bug-on-a-stick	G4	~	S (FS)
<i>Cornus nuttallii</i>	Pacific dogwood	G4	S1	S
<i>Pilophorus acicularis</i> (lichen)	Nail lichen	G4	S1	S (BLM)
<i>Pseudocyphellaria anthraspis</i> (lichen)	White-dot lichen	G4	S1	~
<i>Hypogymnia apinnata</i> (lichen)	Tube lichen	G4	S1	S (BLM)

LATIN NAME	COMMON NAME	Global Rank	State Rank	FS or BLM
<i>Lobaria hallii</i> (lichen)	Hall's lungwort	G4	S1	S (BLM)
<i>Thelypteris nevadensis</i>	Sierra wood-fern	G4	S1	S (FS)
<i>Haplopappus hirtus</i> var. <i>sonchifolius</i>	Sticky goldenweed	G4T3	S1	S
<i>Botrychium pinnatum</i>	Northern grape-fern	G4?	S2	S
<i>Trifolium plumosum</i> var. <i>amplifolium</i>	Plumed clover	G4T2	S2	S (BLM)
<i>Dodecatheon dentatum</i>	White shooting star	G4	S3	W (BLM)
<i>Eburophyton austiniiae</i>	Phantom orchid	G4	S3	W (BLM)
<i>Cypripedium fasciculatum</i>	Clustered ladyslipper	G4	S3	S
<i>Mertensia bella</i>	Oregon bluebells	G4	S3	~
<i>Mimulus clivicola</i>	Bank monkey-flower	G4	S3	S (BLM)
<i>Allotropa virgata</i>	Candystick	G4	S3	S
<i>Botrychium minganense</i>	Mingan moonwort	G4	S3	S
<i>Psilocarphus tenellus</i>	Slender woolly -heads	G4	SH	S (BLM)
<i>Botrychium simplex</i>	Least moonwort	G5	S1	S
<i>Hookeria lucens</i> (moss)	Light hookeria	G5	S1	S (FS)
<i>Mimulus alsinoides</i>	Chickweed monkeyflower	G5	S1	S (FS)
<i>Polypodium glycyrrhiza</i>	Licorice fern	G5	S1	S (FS)
<i>Rubus spectabilis</i>	Salmonberry	G5	S1	~
<i>Sphaerophorus globosus</i> (lichen)	Tuckermann's ball-bearing lichen	G5	S1	~
<i>Asplenium trichomanes</i>	Maidenhair spleenwort	G5	S1	S
<i>Pentagramma triangularis</i> spp. <i>triang.</i>	Gold-back fern	G5T5	S1	S (FS)
<i>Petasites frigidus</i> var. <i>palmatius</i>	Sweet coltsfoot	G5T5	S1	S (FS)
<i>Carex leptalea</i>	Bristle-stalked sedge	G5	S2	S (FS)
<i>Blechnum spicant</i>	Deerfern	G5	S3	S
<i>Carex buxbaumii</i>	Buxbaum's sedge	G5	S3	S
<i>Carex hendersonii</i>	Henderson's sedge	G5	S3	S
<i>Petasites sagittatus</i>	Arroeleaf coltsfoot	G5	S3	S (FS)
<i>Trientalis latifolia</i>	Western starflower	G5	S3	S (FS)
<i>Corydalis caseane</i> ssp. <i>hastata</i>	Case's corydalis	G5T3	S3	~
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>	Short-styled triantha	G5T4	S1	S (FS)
<i>Botrychium lanceolatum</i> var. <i>lanc.</i>	Lance-leaf grape-fern	G5T4	S3	S
<i>Lomatium dissectum</i> var. <i>dissectum</i>	Fern-leaved desert parsley	G5T5	S3	W (BLM)
<i>Rhizomnium nudum</i>	Naked-stem rhizomnium	?	~	S (FS)

Appendix E – Species/Habitat Matrix

A species/habitat matrix was developed as part of this analysis and is included on the accompanying CD; The file is titled “Assmnt_App_E_Spp_Habitat_matrix”. This matrix displays all vertebrate species known to occur within the Clearwater subbasin and their relationship to major vegetative cover types. These data are displayed as square Km of habitat by vegetation type. Cover types include: urban, agricultural land, foothills grassland, disturbed grassland, riparian non-forest, riparian forest, mountain meadows, shrubs, cottonwood, aspen and conifer, western hemlock, western red cedar, subalpine fir, grand fir, lodgepole pine, ponderosa pine, Douglas-fir, western larch, whitebark pine, burnt standing timber, water, barren land, and perennial ice or snow (cloud or cloud shadow).

These cover types were derived by combining GAP 2 cover values into larger groupings for analysis. The matrix is derived from GAP 2 Analysis models using ArcView 3.2. The models were converted from TIF files to grid themes with a 30 meter pixel coverage. The area of hypothesized habitat for each plant and animal species was then calculated using Spatial Analyst. The data received was entered and tabulated in Excel for the purpose of calculating vegetation cover area in acres and square kilometers.

These data were developed from the Idaho Gap Analysis Project. No guarantee expressed or implied is made regarding the accuracy or utility of the data. These data are meant to be used at a scale of 1:100,000 or smaller (such as 1:250,000 or 1:500,000) for the purpose of assessing the conservation status of animals and vegetation types over large geographic regions. Any analysis modeling using the 6th HUC is approaching the scale at which it was not intended.

The matrix is intended to depict broad relationships between specific species and general vegetative cover types. The format of this matrix is designed to provide the reader with a simple way to find out which animals occur within which cover types and the relative amount of breeding habitat contained within each cover type. All known vertebrate species are listed in the left-hand column while cover types are listed across the top of the page. Simple follow a species across or a column down to determine the information needed.

Appendix F - State, Federally Listed, or Candidate Wildlife Species in the Clearwater subbasin*.

Scientific Name	Common Name	State	Forest Service	BLM	Federal
<i>Accipiter gentilis</i>	Northern Goshawk	Species of Concern	Sensitive	Sensitive	N/A
<i>Acipenser transmontanus</i>	White Sturgeon	Species of Concern	N/A	Sensitive	Species of Concern
<i>Aegolius funereus</i>	Boreal Owl	Species of Concern	N/A	Sensitive	N/A
<i>Antrozous pallidus</i>	Pallid Bat	N/A	N/A	N/A	N/A
<i>Bartramia longicauda</i>	Upland Sandpiper	Species of Concern	N/A	Sensitive	N/A
<i>Bufo boreas</i>	Western Toad	Species of Concern	Sensitive	Sensitive	Species of Concern
<i>Canis lupus</i>	Gray Wolf	Endangered	N/A	N/A	Endangered
<i>Chlidonias niger</i>	Black Tern	Species of Concern	N/A	N/A	N/A
<i>Cicindela columbica</i>	Columbia River Tiger Beetle	N/A	N/A	N/A	N/A
<i>Corynorhinus townsendii</i>	Townsend's Big-eared bat	Species of Concern	N/A	N/A	Species of Concern
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	Species of Concern	N/A	Sensitive	N/A
<i>Coccyzus erythrophthalmus</i>	Black-billed Cuckoo	P	N/A	N/A	N/A
<i>Cryptomastix magnidentata</i>	Mission Creek Oregonian	N/A	N/A	Sensitive	N/A
<i>Cypseloides niger</i>	Black Swift	N/A	N/A	Sensitive	N/A
<i>Diadophis punctatus</i>	Ringneck Snake	Species of Concern	N/A	Sensitive	N/A
<i>Elgaria Coerulea</i>	Northern Alligator Lizard	N/A	N/A	N/A	Watch
<i>Euderma maculatum</i>	Spotted Bat	Species of Concern	N/A	Sensitive	N/A
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	Endangered	N/A	N/A	N/A
<i>Fisherola nuttalli</i>	Shortface Lanx	N/A	N/A	N/A	N/A
<i>Fluminicola columbiana</i>	Columbia Pepplesnail	N/A	N/A	Sensitive	Watch
<i>Gavia immer</i>	Common Loon	Species of Concern	Sensitive	N/A	N/A
<i>Glaucidium gnoma</i>	Northern Pygmy-owl	Species of Concern	N/A	N/A	N/A
<i>Gulo gulo</i>	Wolverine	Species of Concern	Sensitive	Sensitive	N/A
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Endangered	N/A	N/A	Threatened
<i>Histrionicus histrionicus</i>	Harlequin Duck	Species of Concern	Sensitive	Sensitive	N/A
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Species of Concern	N/A	Sensitive	Species of Concern
<i>Lynx canadensis</i>	Lynx	Species of Concern	N/A	Sensitive	Threatened
<i>Martes pennanti</i>	Fisher	Species of Concern	Sensitive	Sensitive	N/A
<i>Myotis ciliolabrum</i>	Western Small-footed Myotis	N/A	N/A	Sensitive	N/A
<i>Myotis evotis</i>	Long-eared Myotis	N/A	N/A	Sensitive	N/A
<i>Myotis thysanodes</i>	Fringed Myotis	Species of Concern	N/A	Sensitive	N/A

Scientific Name	Common Name	State	Forest Service	BLM	Federal
<i>Myotis volans</i>	Long-legged Myotis	N/A	N/A	Sensitive	N/A
<i>Myotis yumanensis</i>	Yuma Myotis	N/A	N/A	Sensitive	N/A
<i>Numenius americanus</i>	Long-billed Curlew	N/A	N/A	Sensitive	Species of Concern
<i>Onchorhynchus mykiss</i>	Steelhead	N/A	N/A	N/A	Threatened
<i>Onchorhynchus tshawytscha</i>	Chinook Salmon	Threatened/Endangered	N/A	N/A	N/A
<i>Oreortyx pictus</i>	Mountain Quail	Species of Concern	Sensitive	Sensitive	Species of Concern
<i>Otus flammeolus</i>	Flammulated Owl	Species of Concern	Sensitive	Sensitive	N/A
<i>Picoides albolarvatus</i>	White-headed Woodpecker	Species of Concern	Sensitive	Sensitive	N/A
<i>Picoides arcticus</i>	Black-backed Woodpecker	Species of Concern	Sensitive	Sensitive	N/A
<i>Picoides tridactylus</i>	Three-toed Woodpecker	Species of Concern	N/A	Sensitive	N/A
<i>Pipistrellus hesperus</i>	Western Pipistrelle	Species of Concern	N/A	N/A	Watch
<i>Plethodon idahoensis</i>	Coeur d'Alene Salamander	Species of Concern	Sensitive	Sensitive	N/A
<i>Rana luteiventris</i>	Spotted Frog	Species of Concern	N/A	Sensitive	Candidate
<i>Rana pipiens</i>	Northern Leopard Frog	Species of Concern	Sensitive	Sensitive	Species of Concern
<i>Salvelinus confluentus</i>	Bull Trout	N/A	N/A	N/A	Threatened/Endangered
<i>Sitta pygmaea</i>	Pygmy Nuthatch	Species of Concern	N/A	Sensitive	N/A
<i>Synaptomys borealis</i>	Northern Bog Lemming	Species of Concern	Sensitive	N/A	N/A
<i>Strix nebulosa</i>	Great Gray Owl	Species of Concern	N/A	Sensitive	Watch
<i>Strix varia</i>	Barred Owl	Proposed	N/A	N/A	N/A
<i>Ursus arctos horribilis</i>	Grizzly Bear	Threatened	N/A	N/A	Threatened

* Sources: ICDC 1998, U.S. Fish and Wildlife Service 2000d, Idaho Department of Fish and Game 1991.

Appendix G - Sources used to delineate limiting factors for fish in the Clearwater subbasin

- Brostrom, J. Idaho Department of Fish and Game. Personal communication, March 30, 2001.
- Clearwater subbasin Bull Trout Technical Advisory Team (1998a). *Bull Trout Assessment for the Lochsa and Selway Subbasins (Including the Middle Fork of the Clearwater Upstream of the South Fork)*.
- Clearwater subbasin Bull Trout Technical Advisory Team (1998b). *Lower Clearwater River Bull Trout Problem Assessment*. Prepared for the state of Idaho.
- Clearwater subbasin Bull Trout Technical Advisory Team (1998c). *North Fork Clearwater subbasin Bull Trout Problem Assessment*. Prepared for the state of Idaho.
- Clearwater subbasin Bull Trout Technical Advisory Team (1998d). *South Fork Clearwater River Subbasin Bull Trout Problem Assessment*. Prepared for the state of Idaho.
- Clearwater Biostudies and others (1999). Includes 135 distinct documents produced by four separate authors and cited in *Citations of Contracted Stream Inventories, Clearwater National Forest, Compiled April 20, 1999* (cited by Jody Brostrom of Idaho Department of Fish and Game).
- Clearwater BioStudies. (1999a). Aquatic habitat conditions and salmonid abundance in the upper North Fork Clearwater River (from Meadow Creek downstream to Kelly Forks), North Fork Ranger District, summer 1998. Contract report # 53-0276-7-112. Final report submitted to U.S.D.A. Forest Service, Clearwater National Forest, Orofino, Idaho. (mainstem of the North Fork Clearwater River, report no. 48)
- Clearwater National Forest (1997). Clearwater Subbasin Ecosystem Analysis at Watershed Scale. Potlatch and Orofino/Lolo Watersheds. Clearwater National Forest, Orofino, ID.
- Columbia Basin Fish and Wildlife Authority (1999). FY 2000 Draft Annual Implementation Work Plan. Submitted to the Northwest Power Planning Council.
<http://www.cbfwf.org/products.htm>.
- Dupont, J. Idaho Department of Lands. Personal communication, February 14, 2001.
- Fuller, R. K.; Johnson, J. H. and Bear, M. A. (1984). *A Biological and Physical Inventory of the Streams Within the Lower Clearwater subbasin, Idaho*. Lapwai, ID: Nez Perce Tribe. Submitted to the Bonneville Power Administration.
- Johnson, D. B. (1985). *A Biological and Physical Inventory of Clear Creek, Orofino Creek, and The Potlatch River, Tributary Streams of the Clearwater River, Idaho*. Lapwai, ID: Nez Perce Tribe, Fisheries Resource Management.
- Kucera, P. A. and Johnson, D. B. (1986). *A Biological and Physical Inventory of the Streams Within the Nez Perce Reservation: Juvenile Steelhead Survey and Factors That Affect Abundance in Selected Streams in the Lower Clearwater subbasin, Idaho*. Lapwai, ID: Nez Perce Tribe, Fisheries Resource Management.
- Kucera, P. A.; Johnson, J. H. and Bear, M. A. (1983). *A Biological and Physical Inventory of the Streams Within the Nez Perce Reservation*. Lapwai, ID: Nez Perce Tribe, Fisheries Resource Management.
- Nez Perce National Forest (1995). No Reference Provided - Jody Brostrom, Idaho Department of Fish and Game, personal communication, March 30, 2001.
- Nez Perce National Forest (1998a). *South Fork Clearwater River Landscape Assessment Vol. I: Narrative*.
- Nez Perce National Forest (1998b). *South Fork Clearwater River Landscape Assessment Vol. II: Maps*.

- Nez Perce Tribe and Idaho Department of Fish and Game (1990). *Clearwater River Subbasin Salmon and Steelhead Production Plan*. Funded by the Northwest Power Planning Council; Columbia Basin Fish and Wildlife Authority.
- Paradis, W. J.; Lentz, H. S.; Mays, D.; Blair, S. and Lake, L. (1999b). *South Fork Clearwater River Biological Assessment*. Nez Perce National Forest.
- Schoen, D.; Jones, R. M. and Murphy, P. K. (1999). *Section 7 Watershed Biological Assessment Lochsa River Drainage Clearwater Subbasin: Determination of Effects of Ongoing Activities Based on the Matrix of Pathways and Indicators of Watershed Condition for Steelhead Trout, Fall Chinook Salmon and Bull Trout*. Clearwater National Forest.
- Thompson, K. L. (1999). *Biological Assessment: Lower Selway 4th Code HUC. Fish, Wildlife and Plants*. Nez Perce National Forest, Moose Creek Ranger District.
- Weigel, D. E. (1997). *Genetic Inventory of Westslope Cutthroat Trout in the North Fork Clearwater subbasin, Idaho: Annual Report 1996*. Orofino, ID: Nez Perce Tribe. Prepared for Bonneville Power Administration.
- Weigel, D. E. and Cross, S. (1998). *Genetic Inventory of Westslope Cutthroat Trout in the North Fork Clearwater subbasin, Idaho: Annual Report 1997*. Orofino, ID: Nez Perce Tribe. Prepared for Bonneville Power Administration.
- Weigel, D. E. and Zakrajsek, J. (1999). *Genetic Inventory of Westslope Cutthroat Trout in the North Fork Clearwater subbasin, Idaho: Annual Report 1998*. Orofino, ID: Nez Perce Tribe. Prepared for Bonneville Power Administration.

Appendix H - Figures depicting limiting factors for fish in the Clearwater subbasin

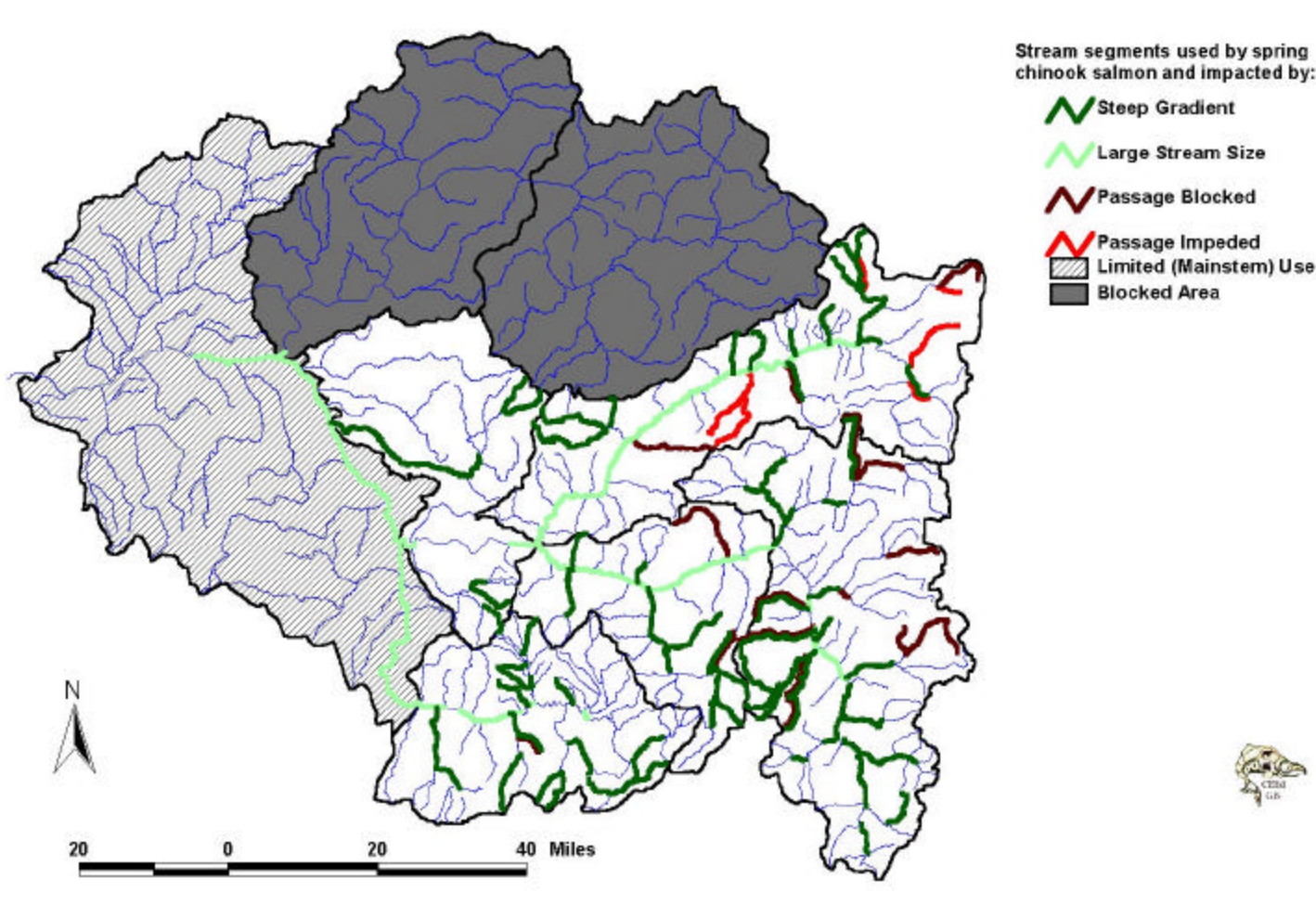


Figure 123. Clearwater subbasin stream segments where chinook salmon populations may be constrained by steep gradients, large stream size, or blocked or impeded passage (Pacific States Marine Fisheries Commission 2001)

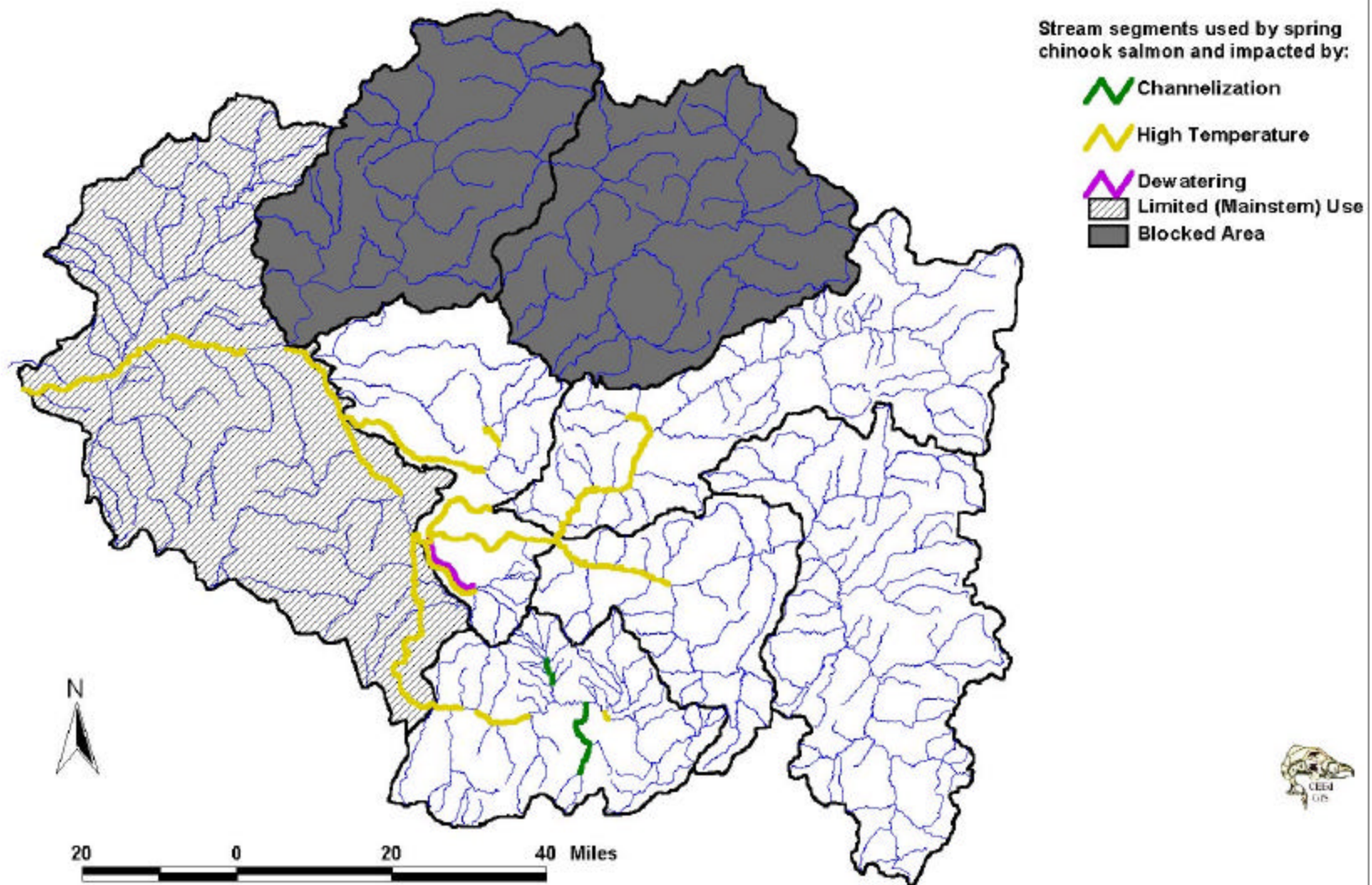


Figure 124. Clearwater subbasin stream segments where chinook salmon populations may be constrained by channelization, high temperatures, or dewatering (Pacific States Marine Fisheries Commission 2001)

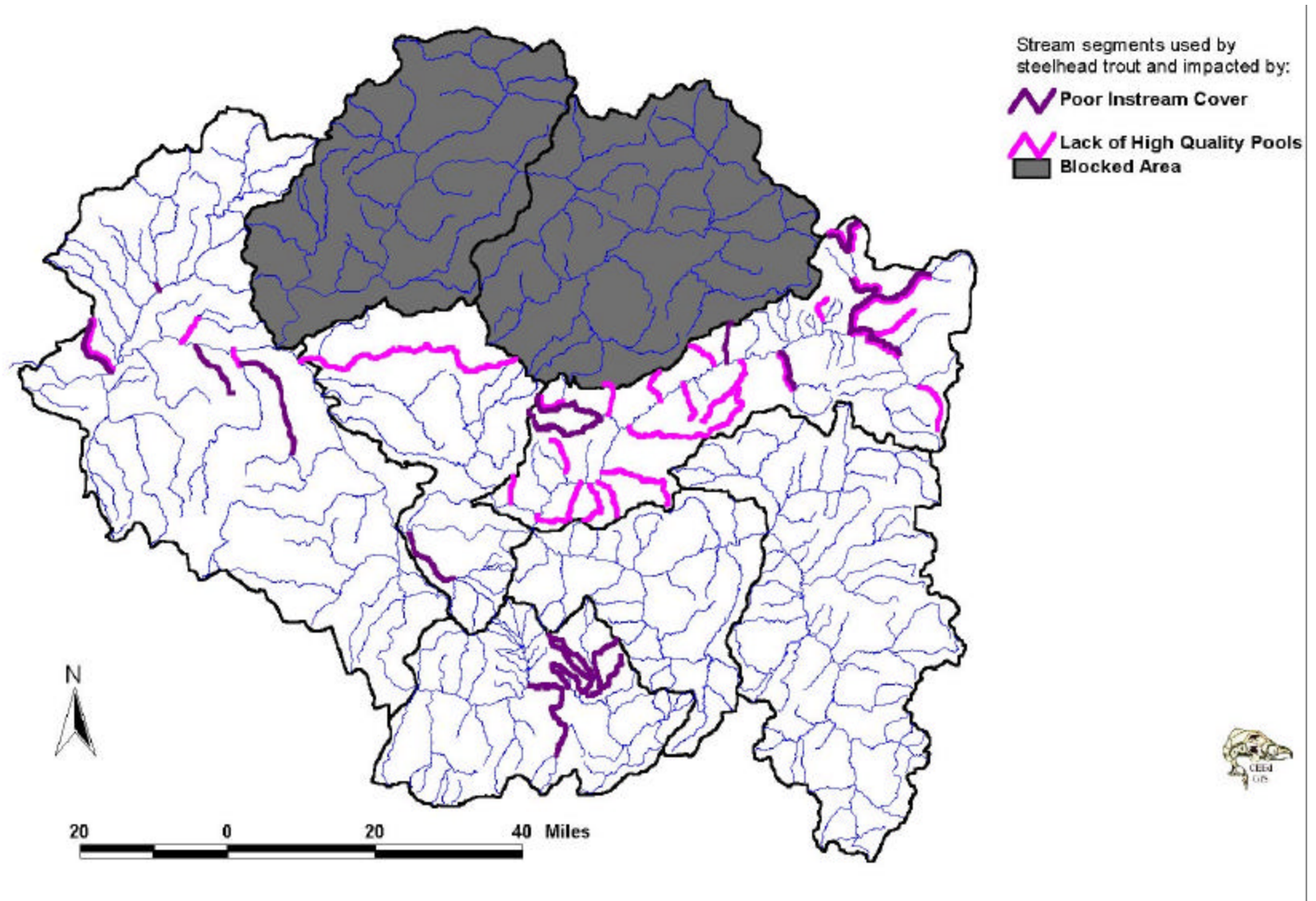


Figure 125. Clearwater subbasin stream segments where chinook salmon populations may be constrained by poor instream cover or lack of high quality pools (Pacific States Marine Fisheries Commission 2001)

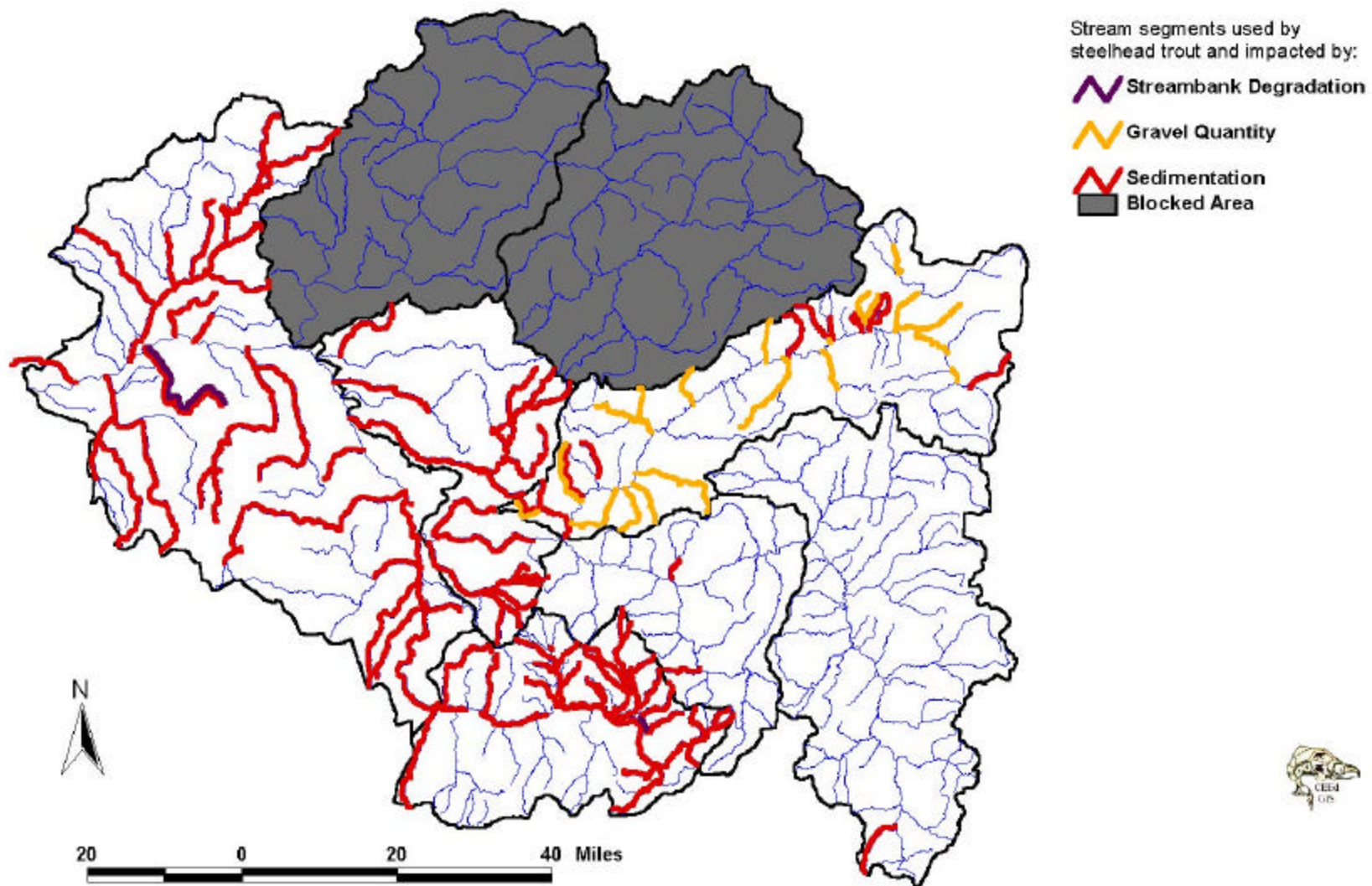


Figure 126. Clearwater subbasin stream segments where chinook salmon populations may be constrained by streambank degradation, limited gravel quantity or sedimentation (Pacific States Marine Fisheries Commission 2001)

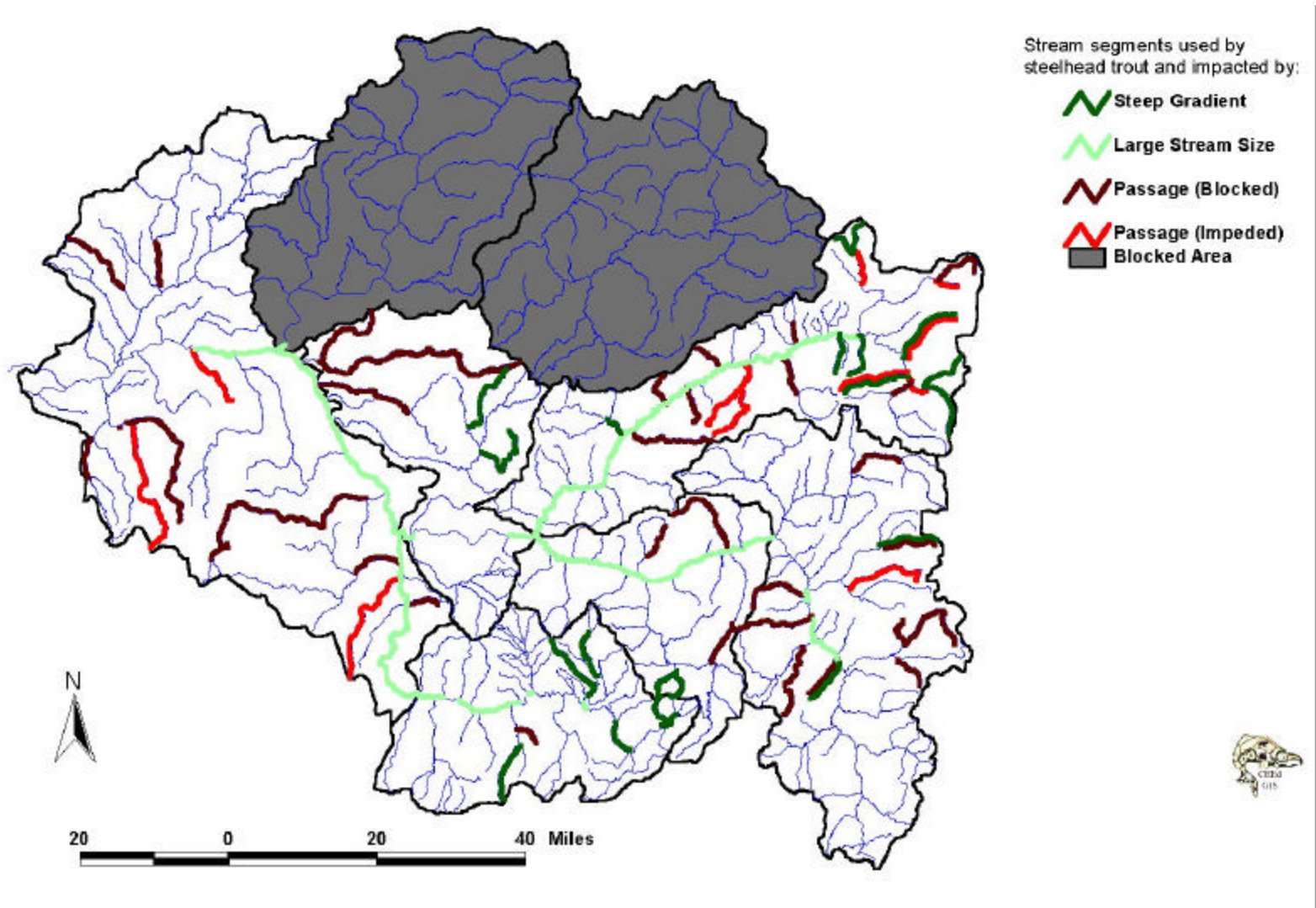


Figure 127. Clearwater subbasin stream segments where steelhead trout populations may be constrained by steep gradients, large stream size, or blocked or impeded passage (Pacific States Marine Fisheries Commission 2001)

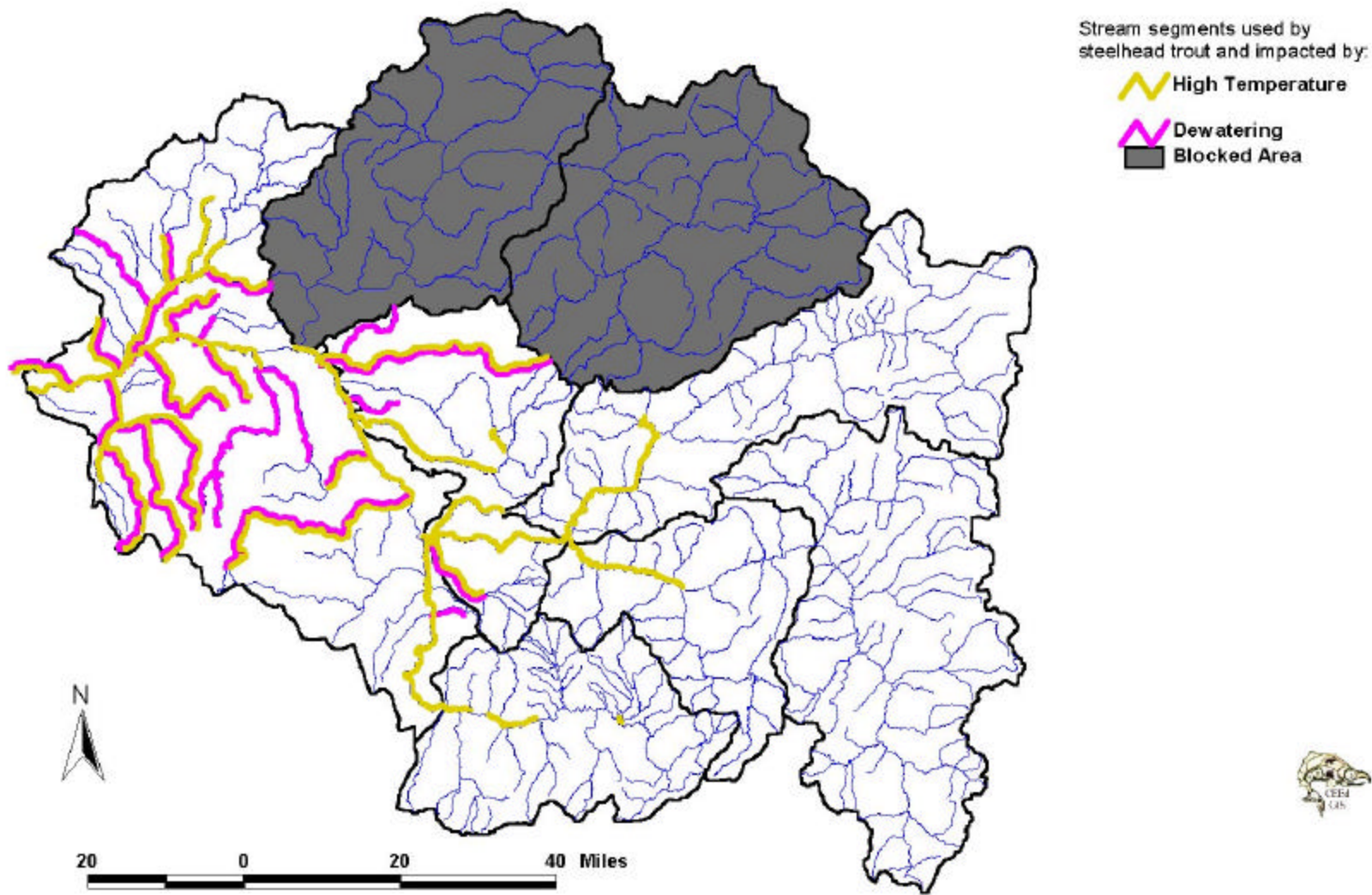


Figure 128. Clearwater subbasin stream segments where steelhead trout populations may be constrained by high temperatures, or dewatering (Pacific States Marine Fisheries Commission 2001)

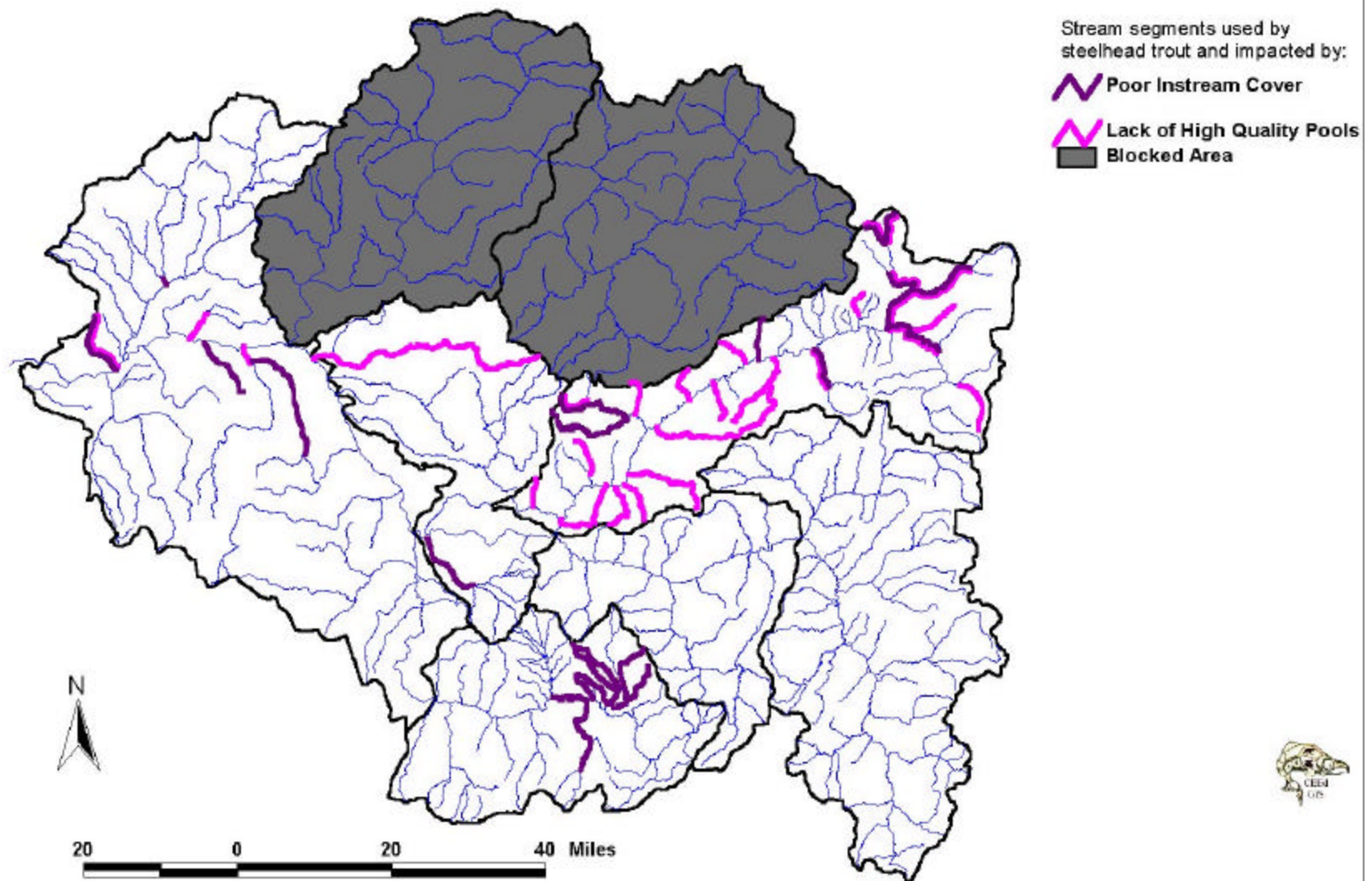


Figure 129. Clearwater subbasin stream segments where steelhead trout populations may be constrained by poor instream cover or lack of high quality pools (Pacific States Marine Fisheries Commission 2001)

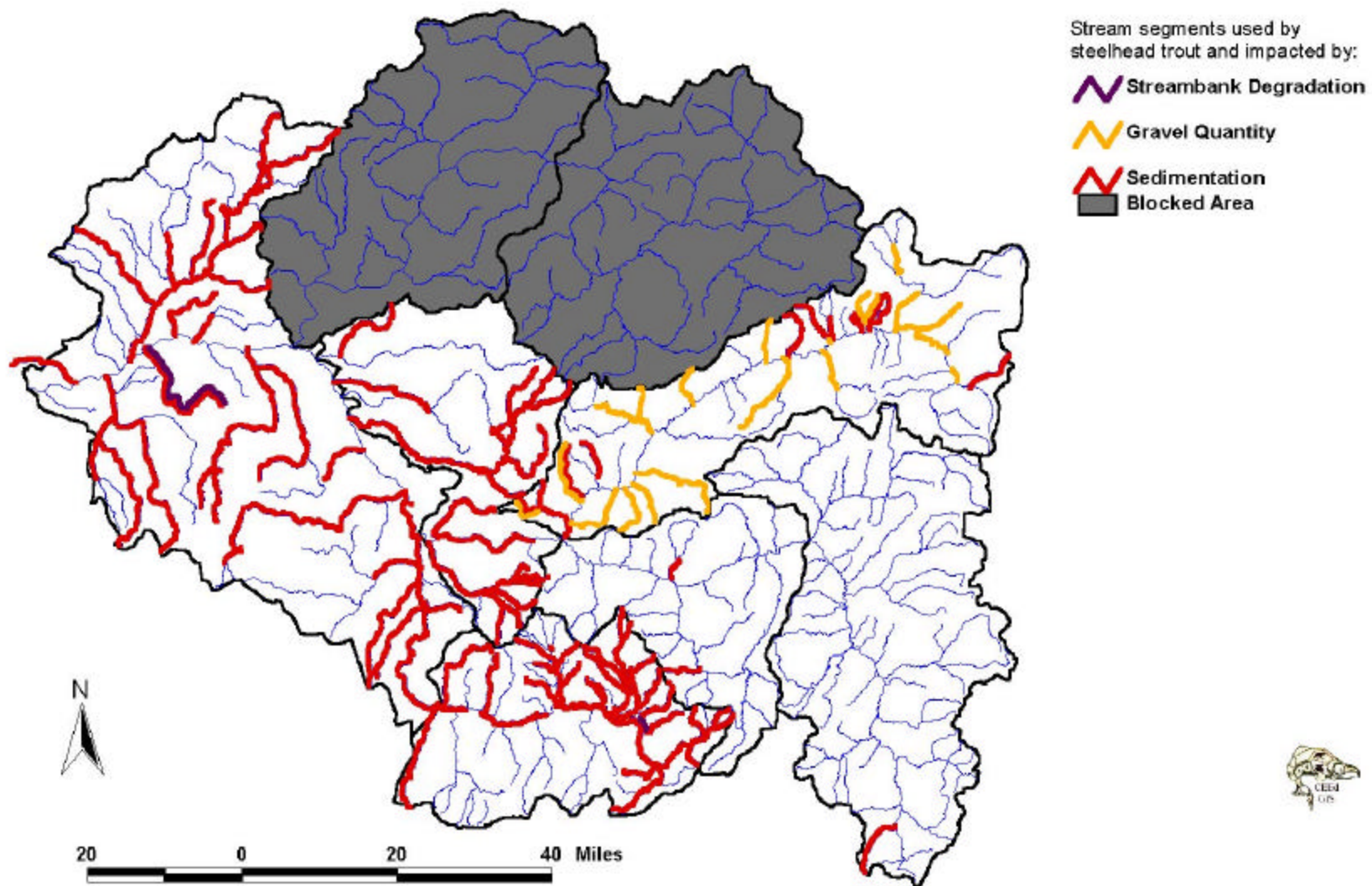


Figure 130. Clearwater subbasin stream segments where steelhead trout populations may be constrained by streambank degradation, limited gravel quantity or sedimentation (Pacific States Marine Fisheries Commission 2001)

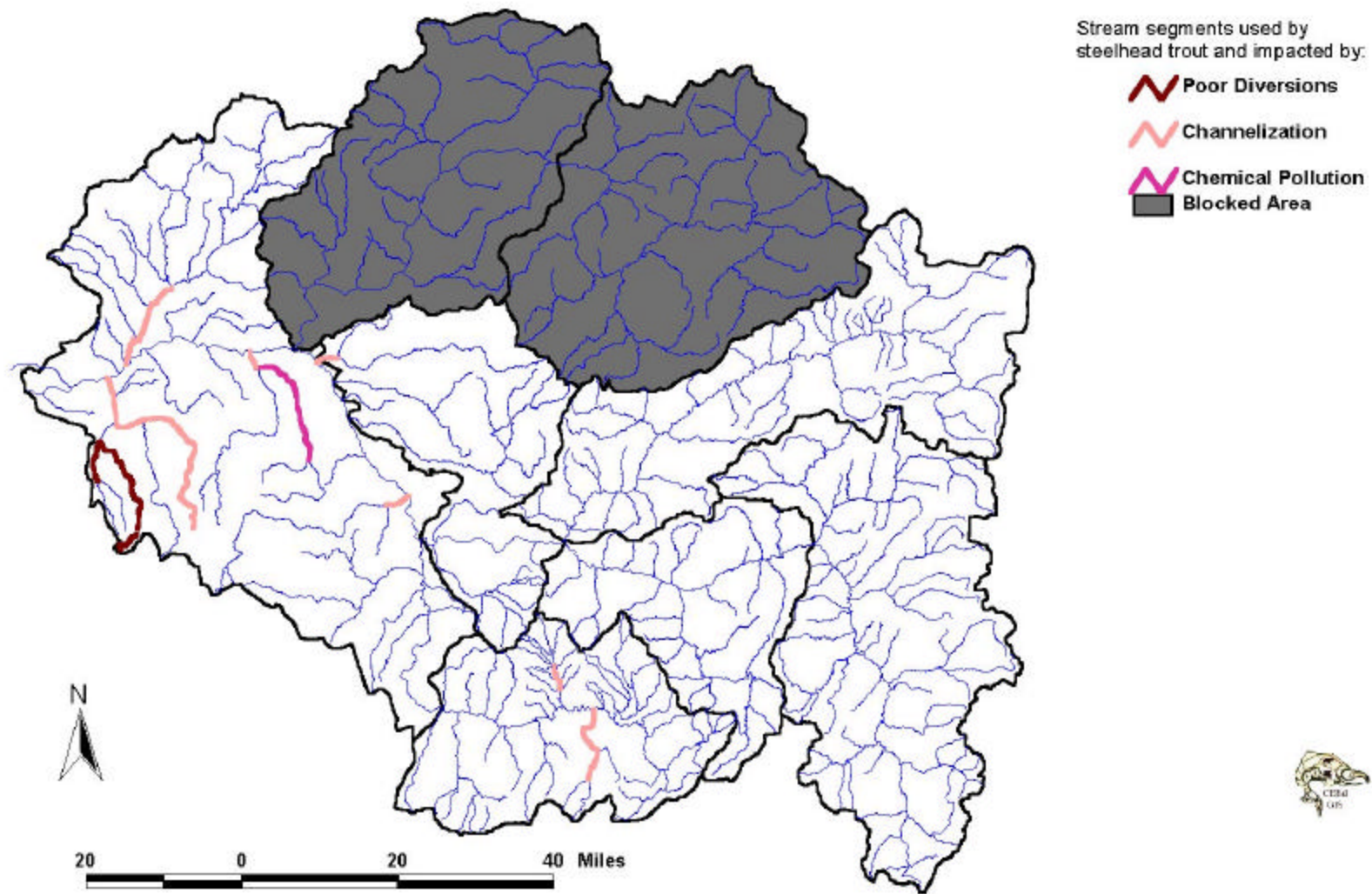


Figure 131. Clearwater subbasin stream segments where steelhead trout populations may be constrained by poor diversions, channelization, or chemical pollution (Pacific States Marine Fisheries Commission 2001)