Geospatial Data for the Snake Basin

Exploration of Agency Fish Habitat and Fish Population Datasets

ESSA Technologies Ltd.
CSMEP Design Workshop – April 2005

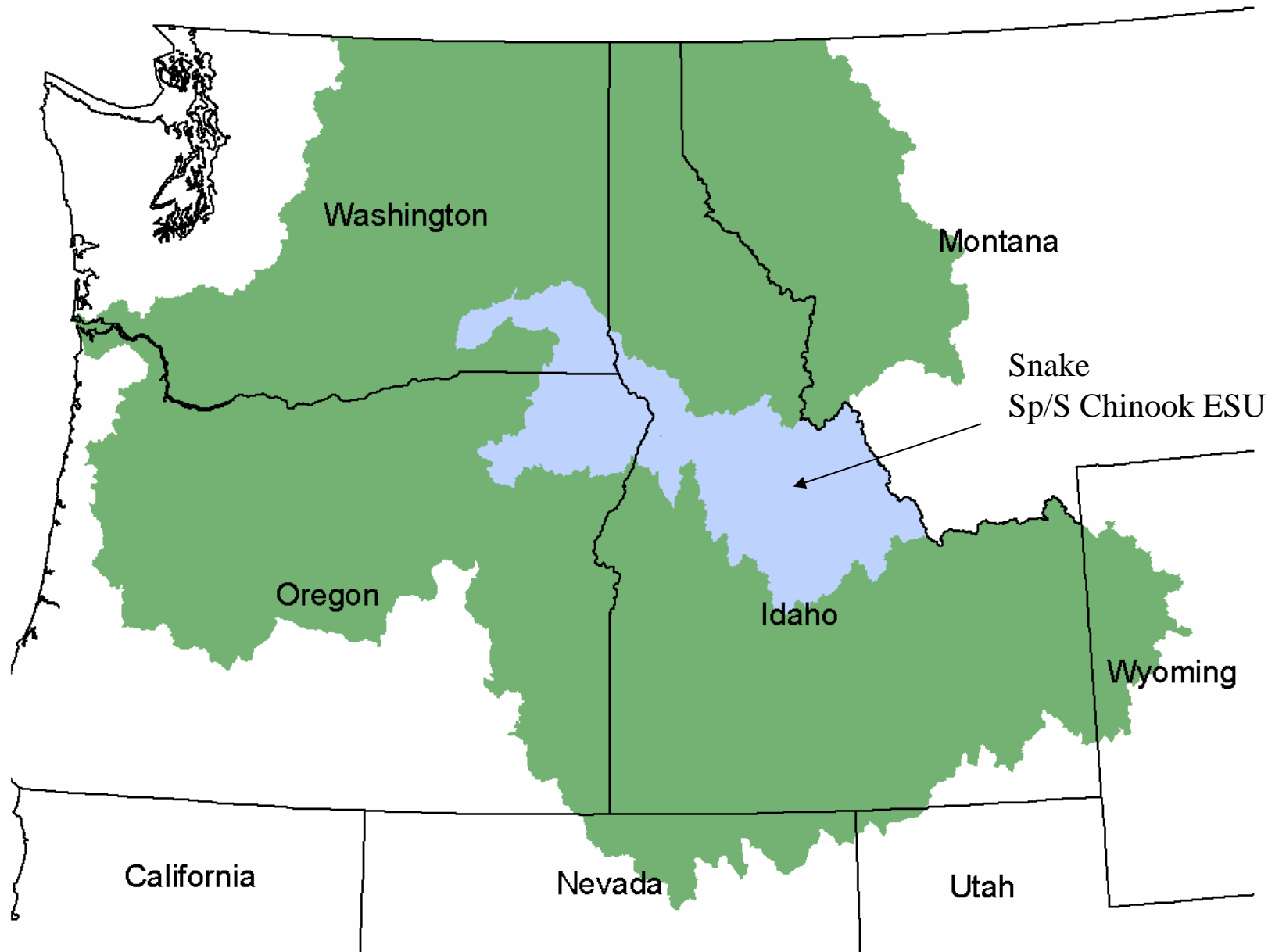# CSMEP assigned task - obtaining spatial data for Snake pilot
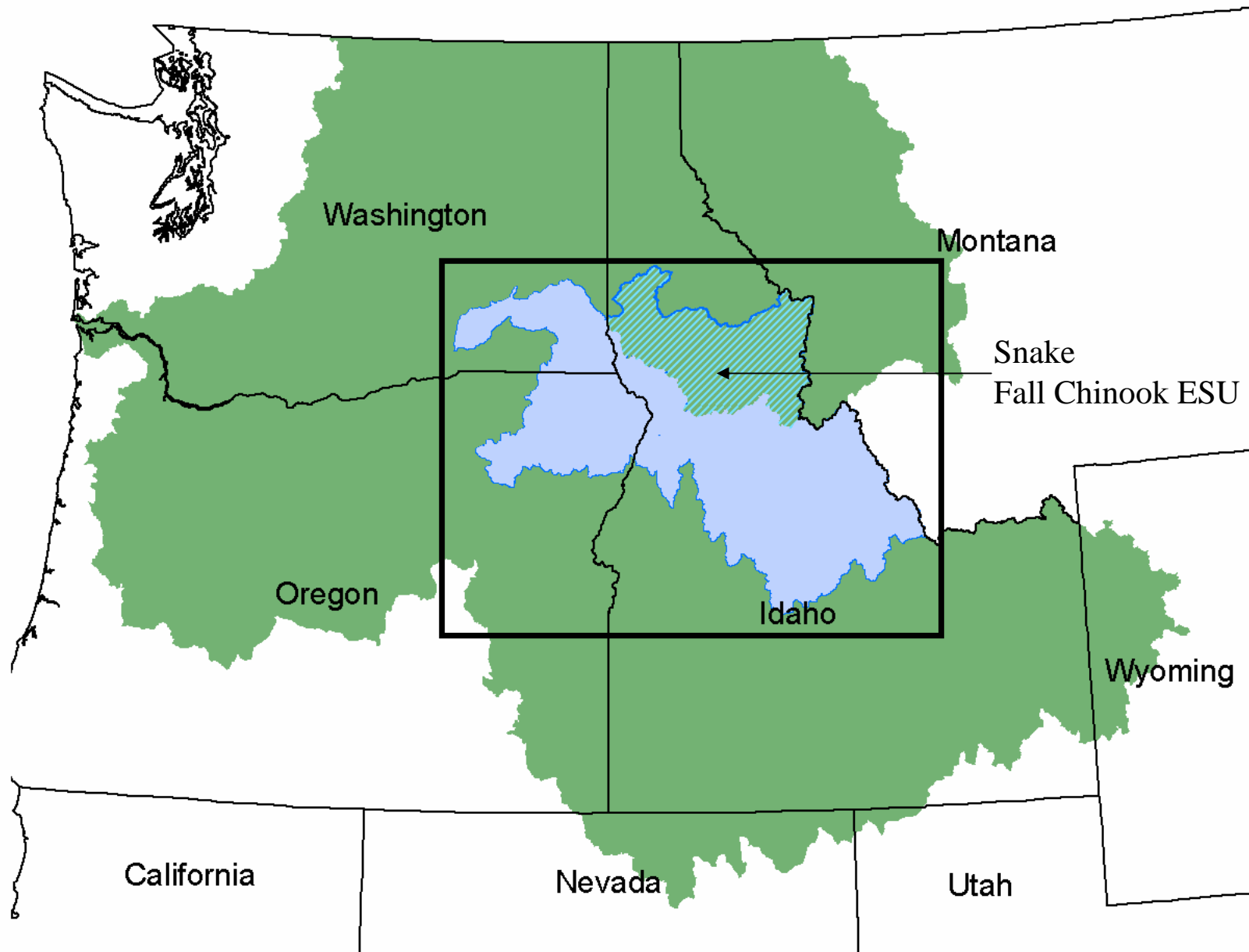
Questions:

- What agencies monitor fish habitat and fish populations?

- How easy/difficult is it to obtain this data in spatial formats (i.e., representative GIS coverages)?

- How might this spatial data assist CSMEP analysts in design tasks?
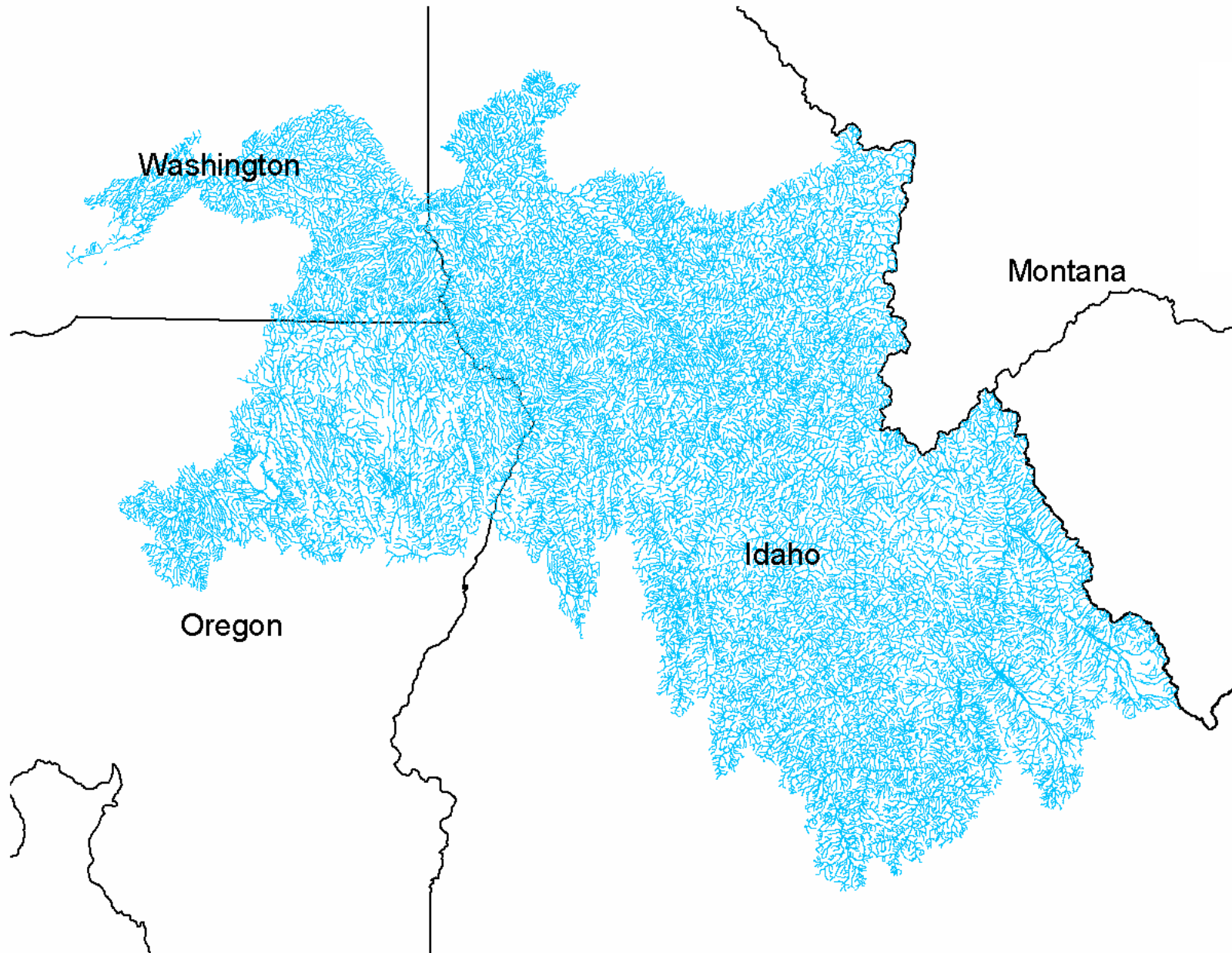
Columbia Basin

Washington

Montana

Snake
Sp/S Chinook ESU

Oregon

Idaho

Wyoming

California

Nevada

Utah

Washington

Montana

Snake
Fall Chinook ESU

Oregon

Idaho

Wyoming

California

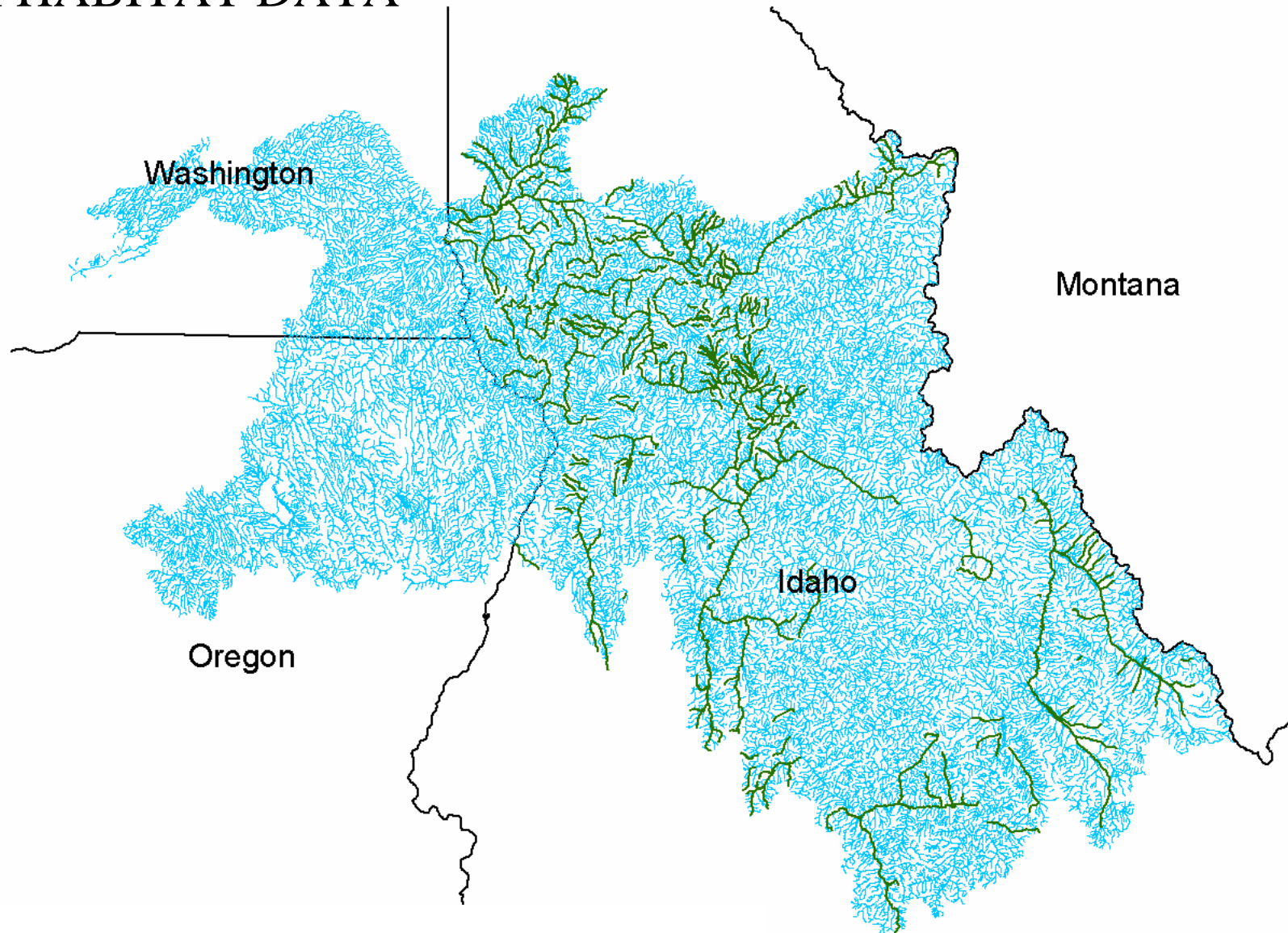Nevada

Utah

Base layers from StreamNet

Washington

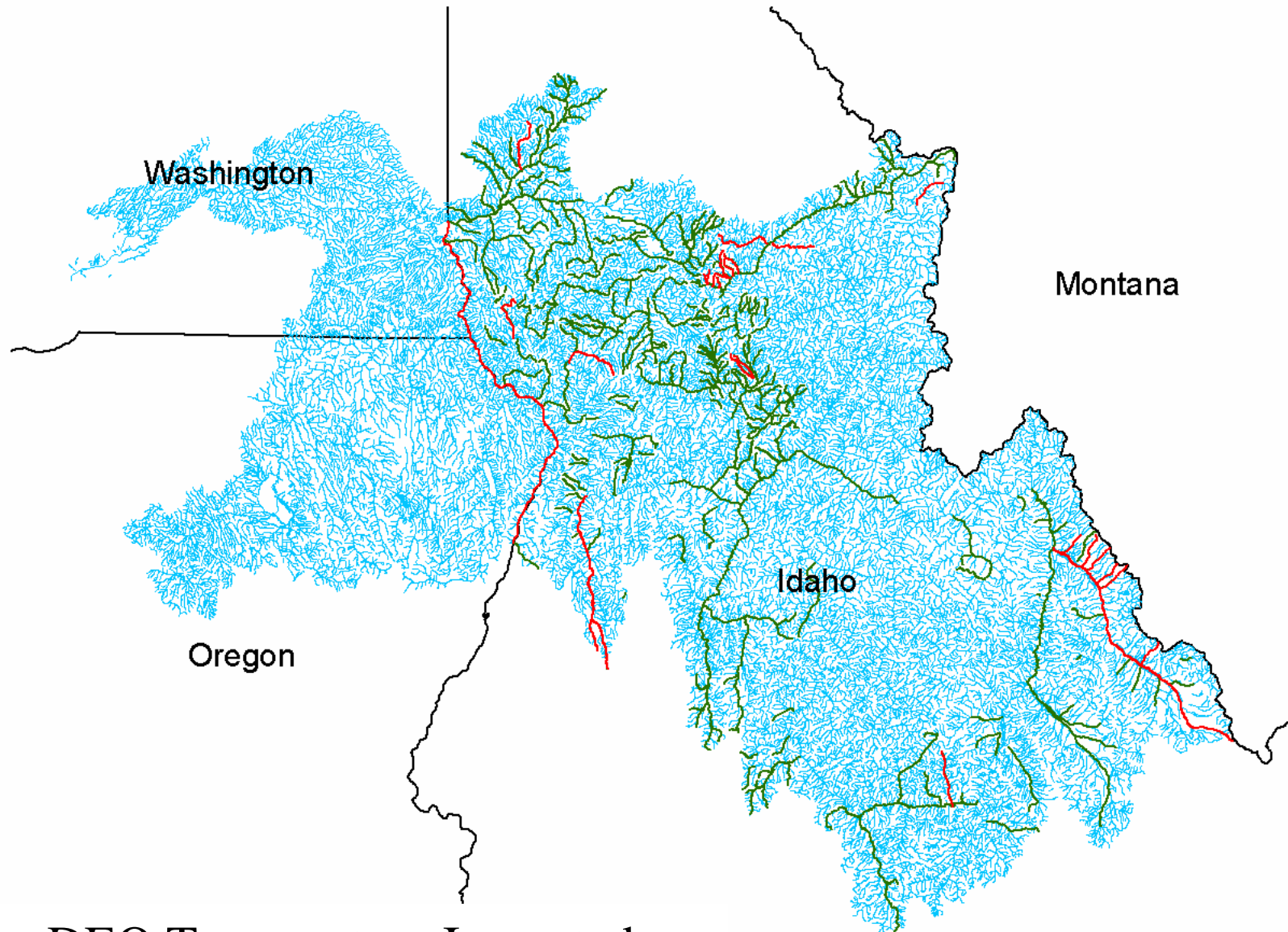Montana

Idaho

Oregon

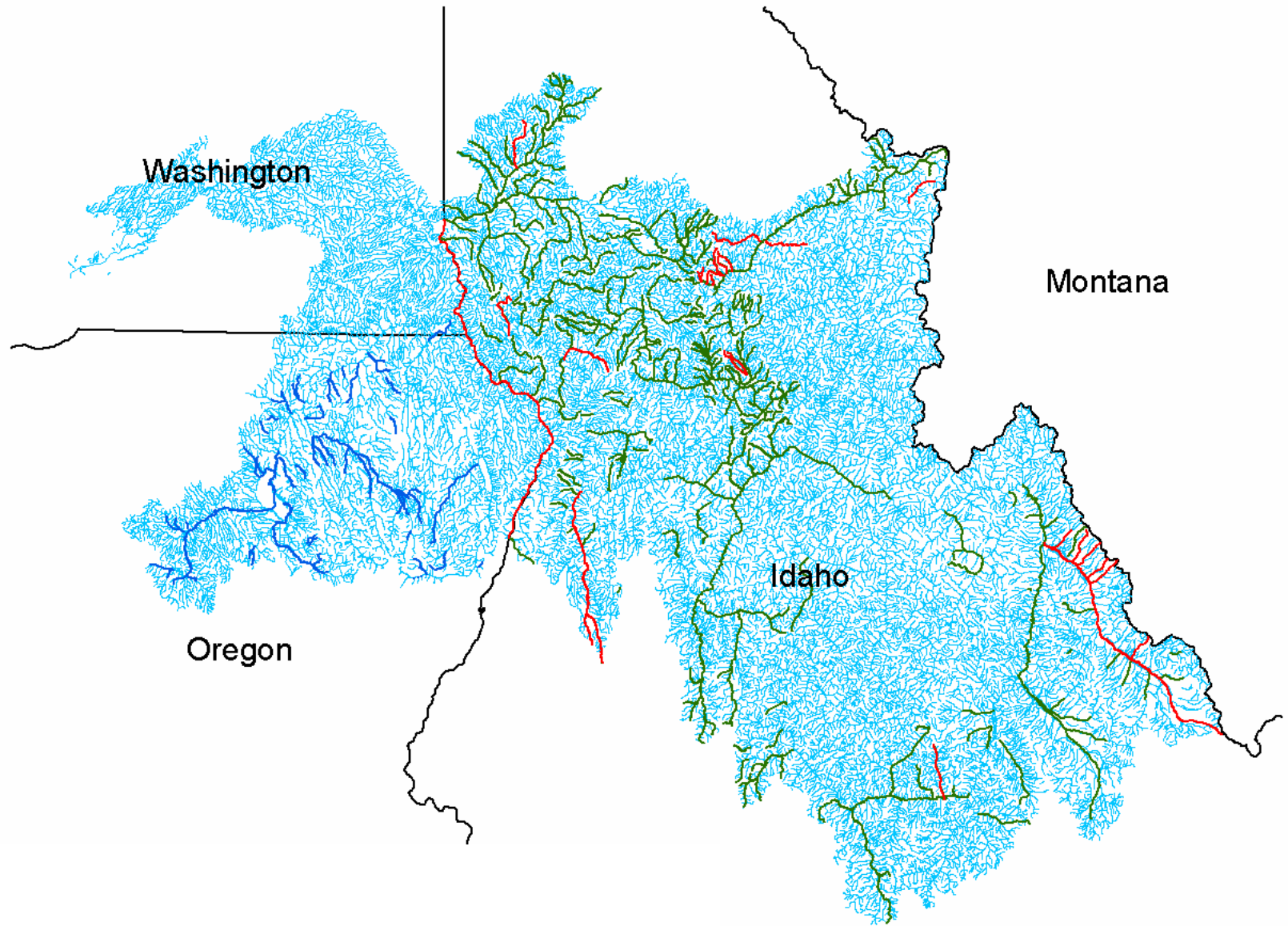Snake ESU Hydrography

FISH HABITAT DATA

Washington
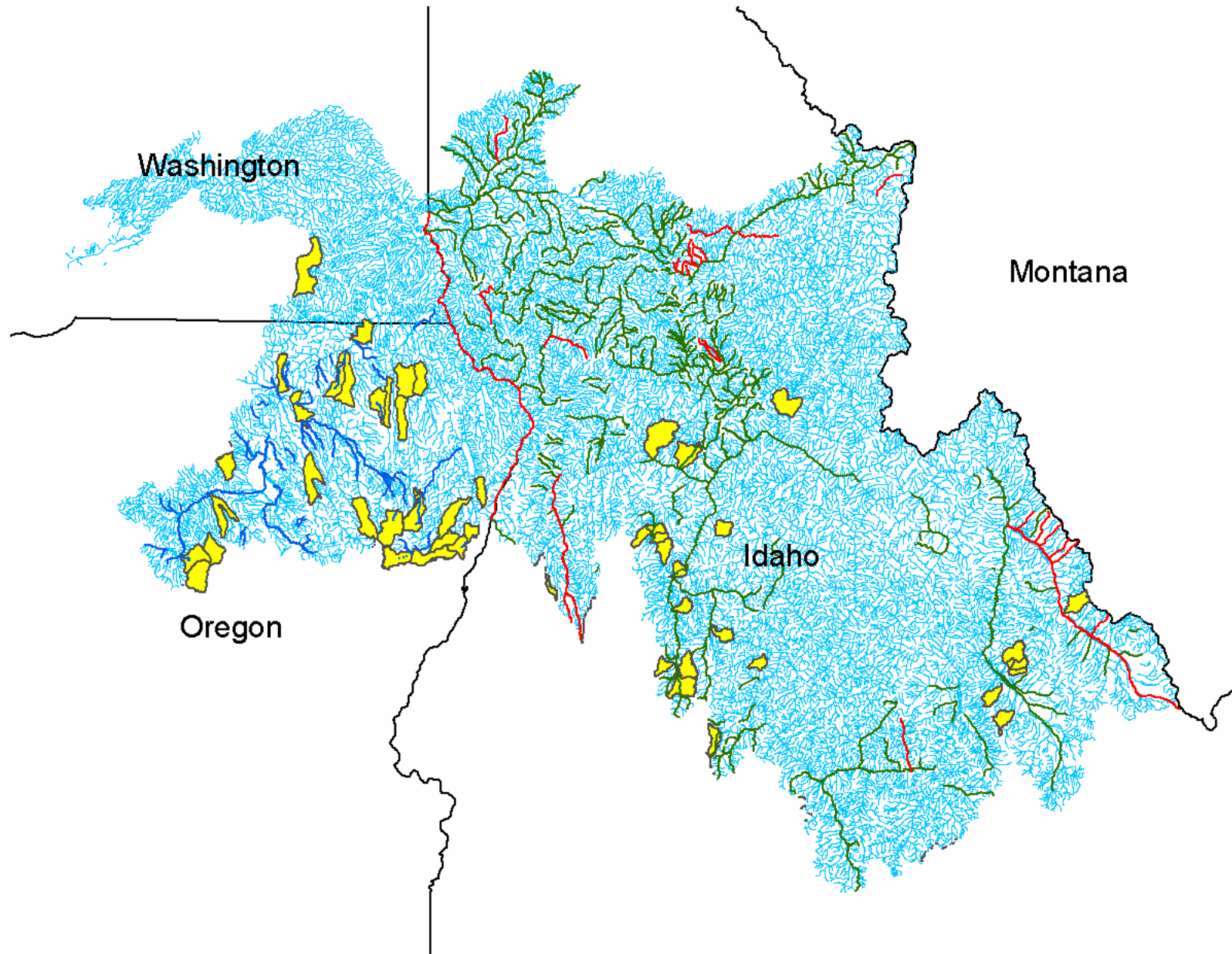
Montana

Oregon

Idaho

Idaho DEQ Monitored Streams
(green)

Idaho DEQ Temperature Impacted
Streams (red)
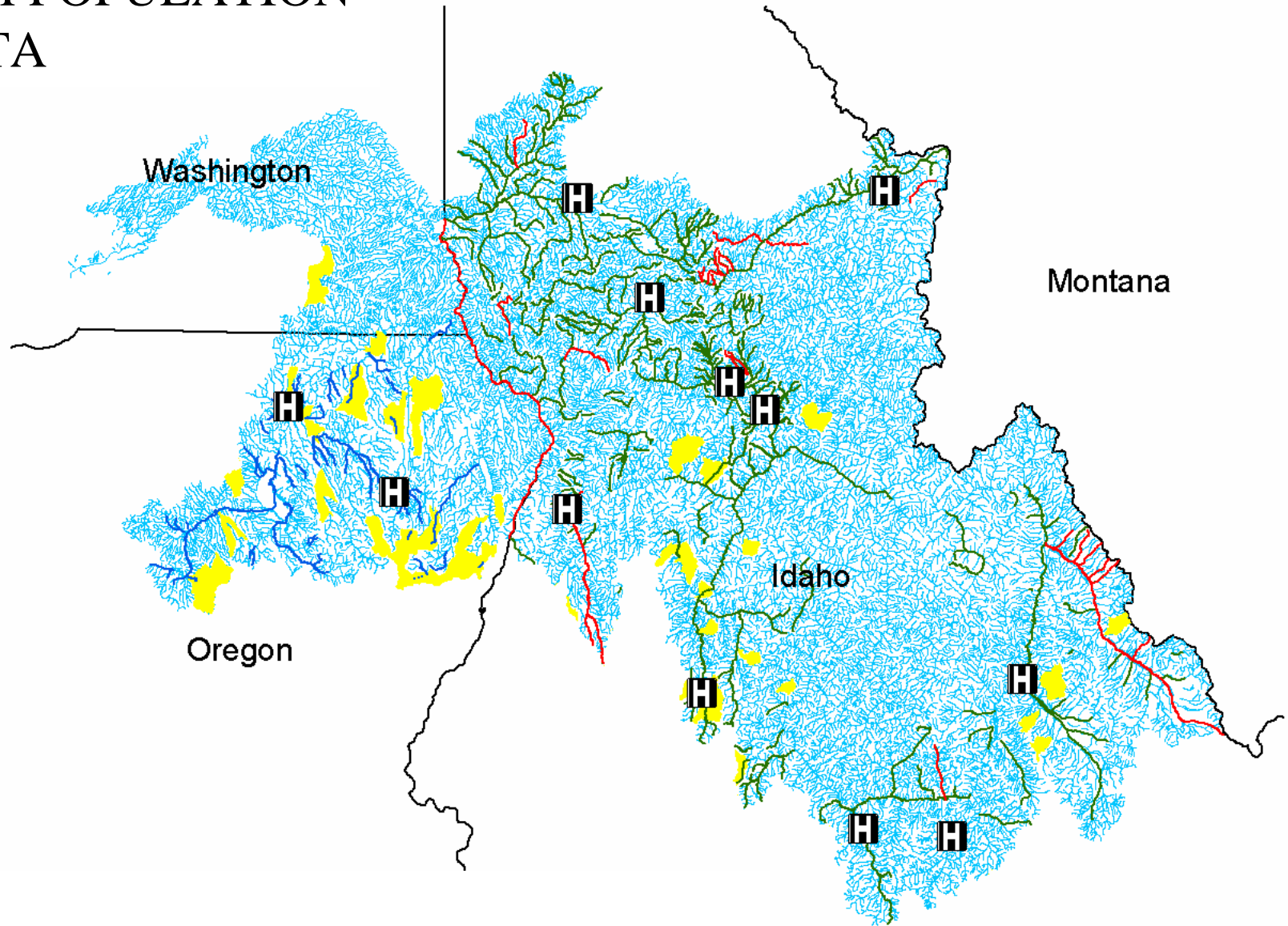
Oregon Aquatic Inventories Streams
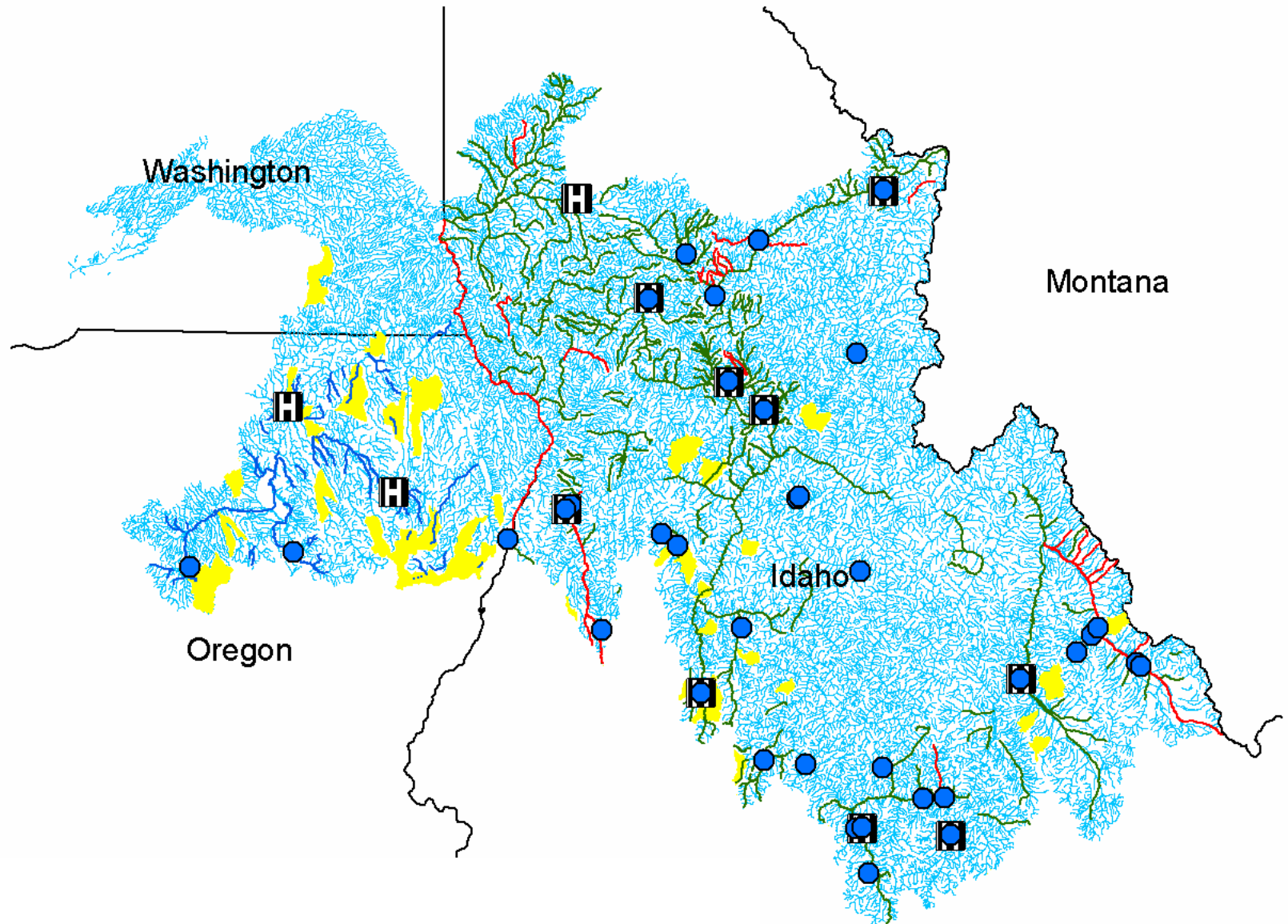(dark blue)

Washington

Montana
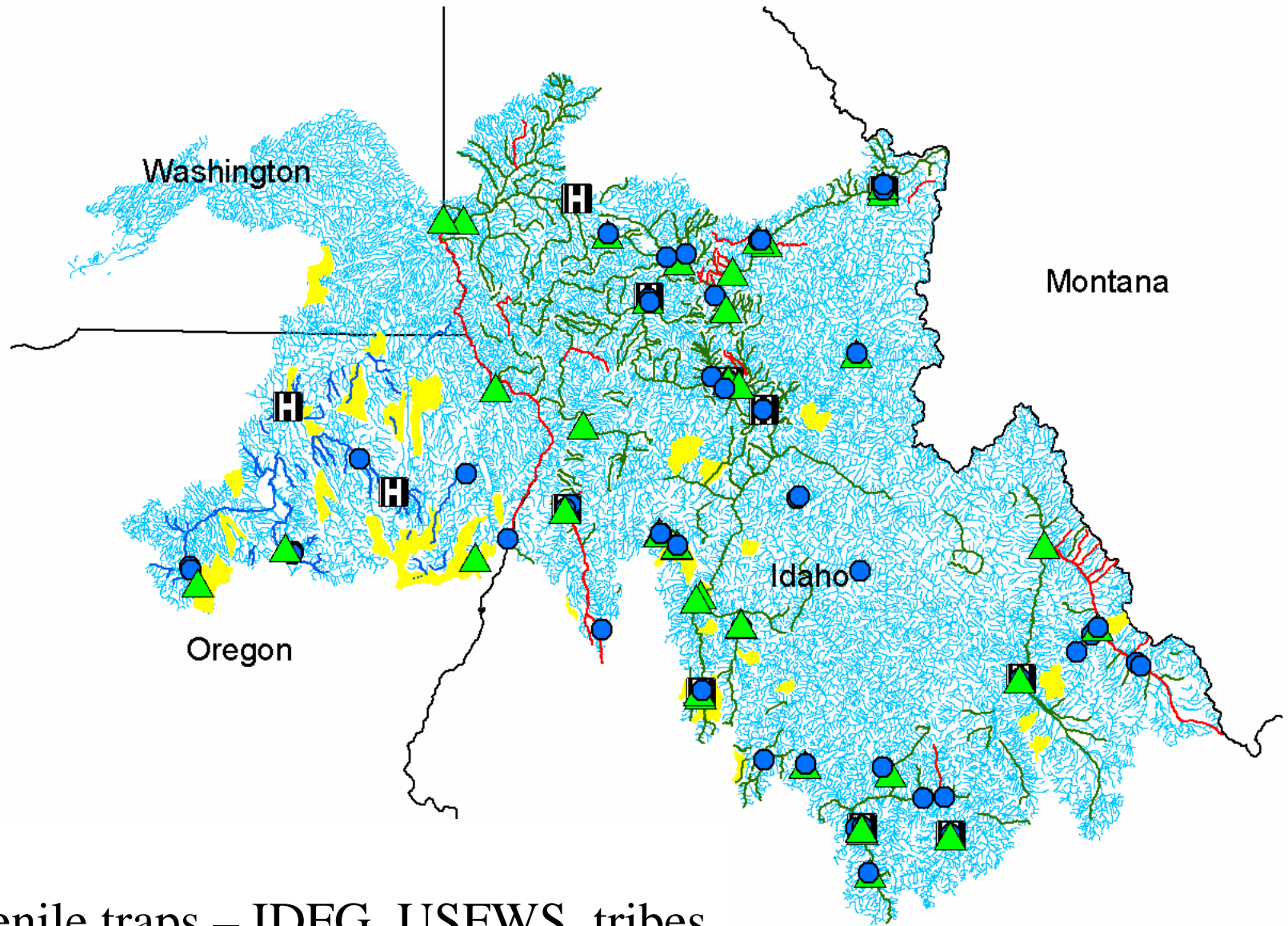
Oregon

Idaho

PIBO HUC6 basins (yellow)
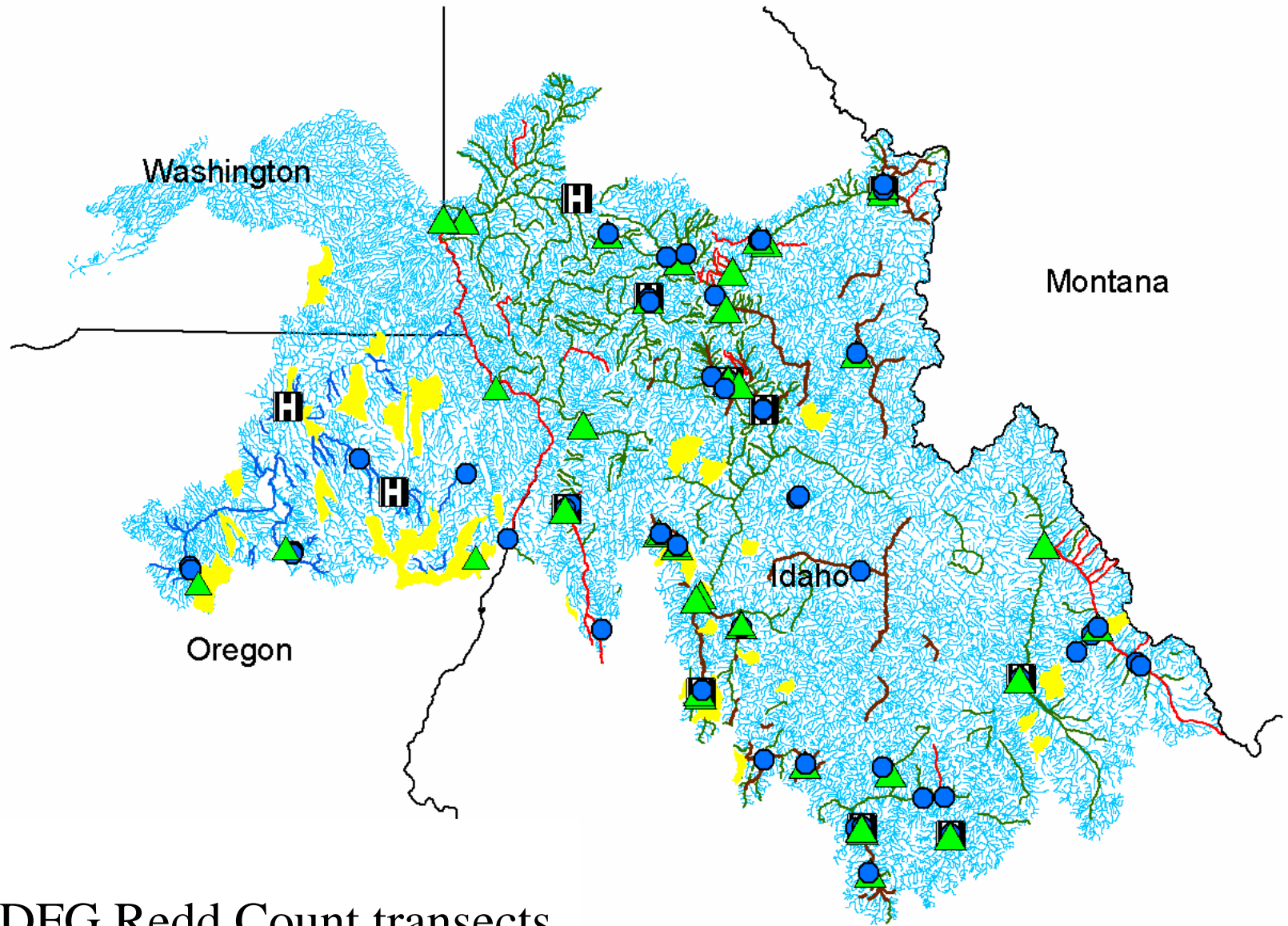
FISH POPULATION DATA
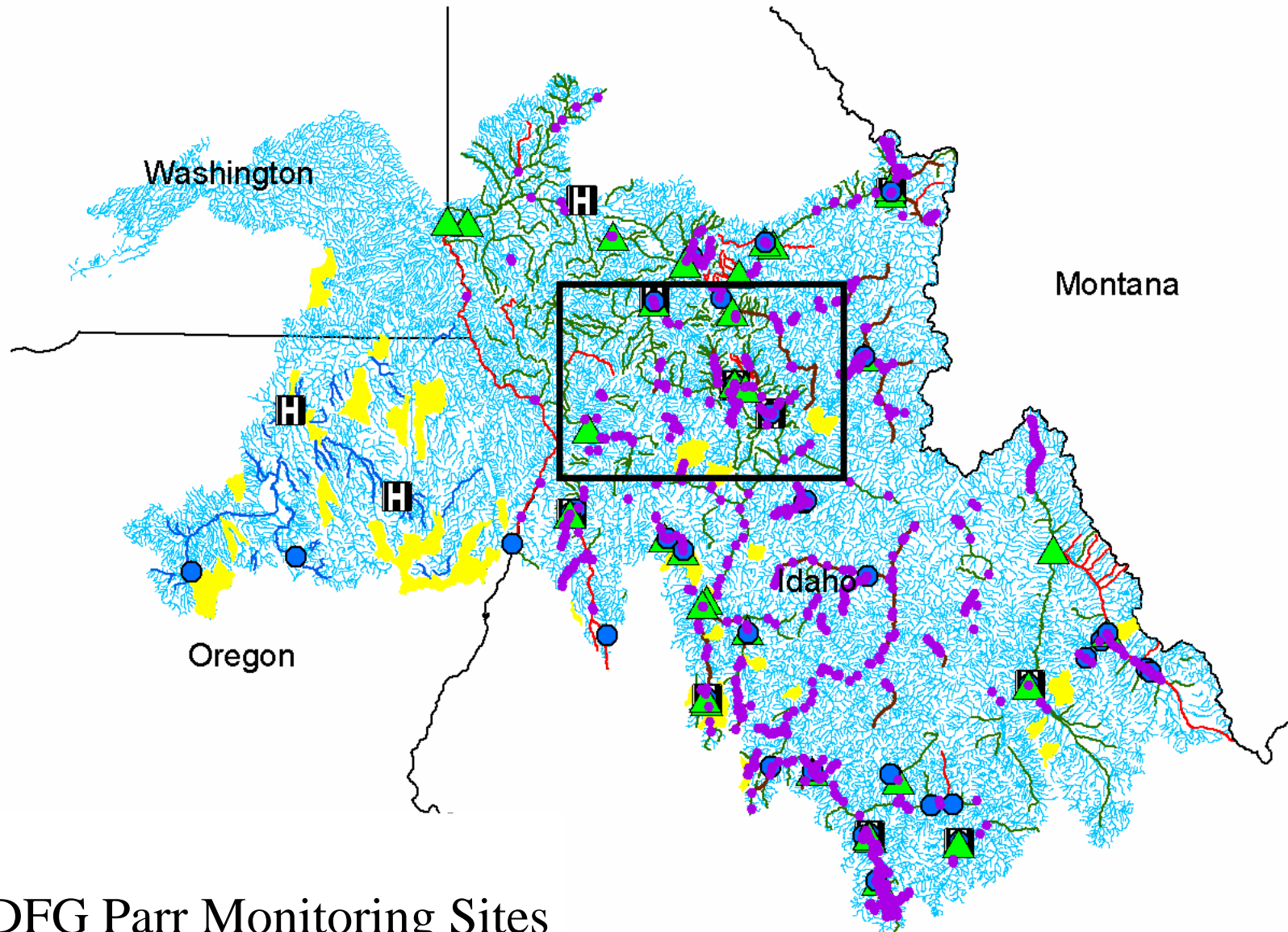

IDGF & ODFW identified hatcheries (H)

Adult weirs – IDFG, ODFW, USFWS,
tribes (blue circles)

Juvenile traps – IDFG, USFWS, tribes
(green triangles)

IDFG Redd Count transects
(dark brown lines)

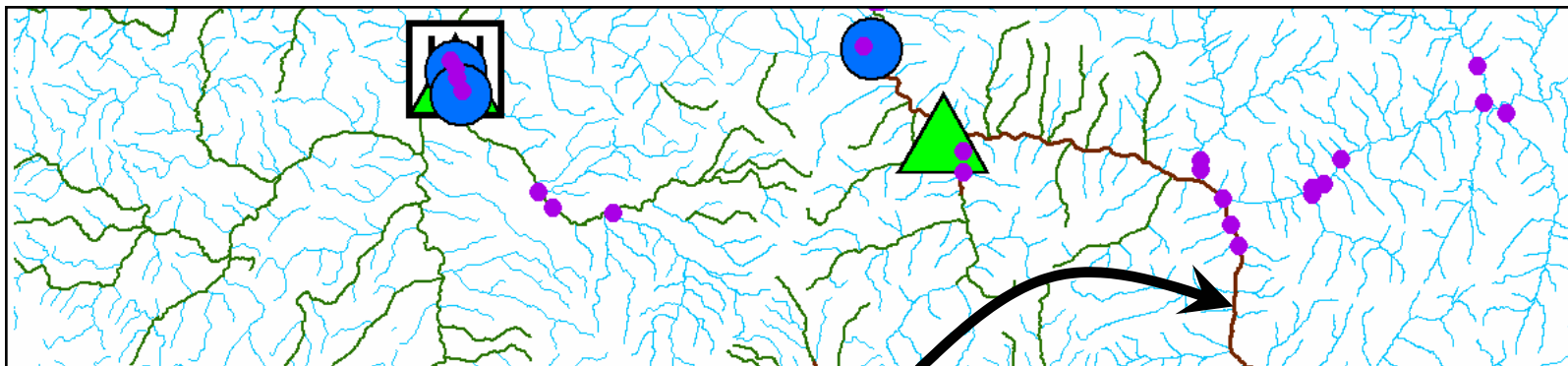IDFG Parr Monitoring Sites
(purple dots)

Identify Results

Layers: <All layers>

- s2001
- wtrshed
- mvbcrb polygon
- gpmSites
  - Clear Creek
  - Clear Creek
- IDFG_Fish_Monitoring_Snake
  - Clear Creek Trap
  - Clear Creek Weir
- IDFG_Hatcheries_Snake
  - Kooskia National Fish Hatchery
- Idaho_DEQ_Streams_SnakeESU
  - Clear Creek
- Snake_composite_hydrography
- Snake_ESU
- CSMEP_states
- strm303d98_id_ideq

Location: (3266402.899540 1869608.137434)

Field	Value
IDGSNAME	Clear Creek
HUC	17060304
BND	Headwaters to M Fk Clearwater River
NBND	
ACTIVE	1996
STATUS	1998 Delisted 303(d)
YEARDUE	2002
THREAT	0
TRIBAL	1
BACT	1
CHANSTAB	0
DO	1
FLOWALT	1
HABALT	1
MET_HG	0
MET	0
NH3	1

Identify Results

Layers: `<All layers>`

- Snake River Fall
- ⊞ chinL
- ⊟ crb6hucs polygon
    - ⊞ CLEARWATER
    - ⊞ CLEARWATER
- ⊞ crbsubs polygon
- ⊞ s2001
- ⊞ wtrshed
- ⊞ mvbcrb polygon
- ⊟ Redd_Transects
    - Meadow Creek
- ⊟ Snake_composite_hydro
    - ⊞ UNNAMED
    - ⊞ Meadow Creek
    - ⊞ Buck Lake Creek
    - ⊞ Meadow Creek
    - ⊞ Meadow Creek

Location: (3444459.174754 1797382.265273)

Field	Value
STREAM	Meadow Creek
LLID	1152954460456
PARENT	Selway River
PLLID	1155987461401
PMEASURE_M	30548
BEGTRAN	Mouth
BEGMEAS_M	1
ENDTRAN	Fourmile Creek
ENDMEAS_M	62246
TRANLEN_M	62245
TRANLEN_MI	38.65
TRANSECT	
TRANDESCRP	Index
TYPE	
METHOD	Helicopter
TIMING	8/24
COMMENTS	NPT Survey
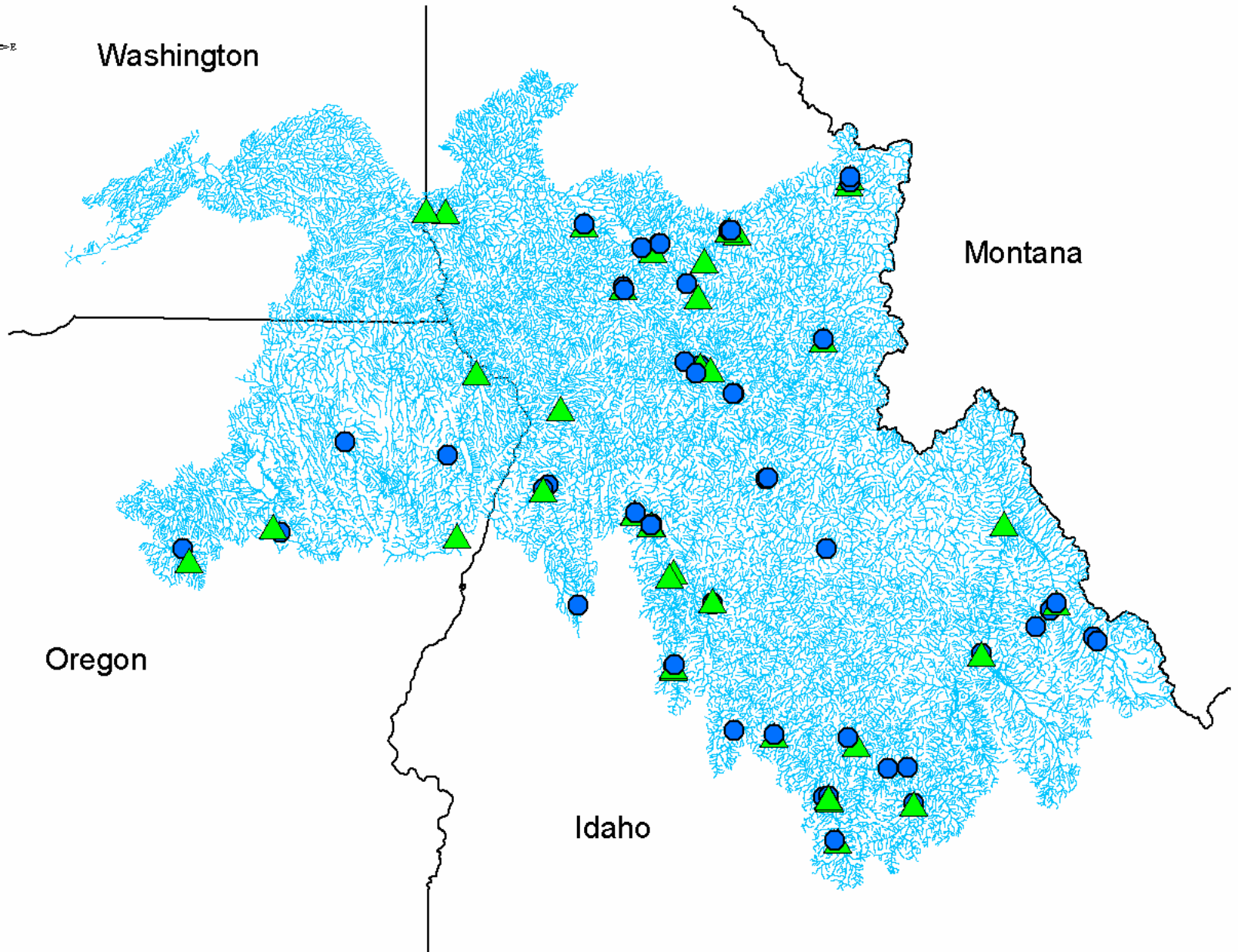
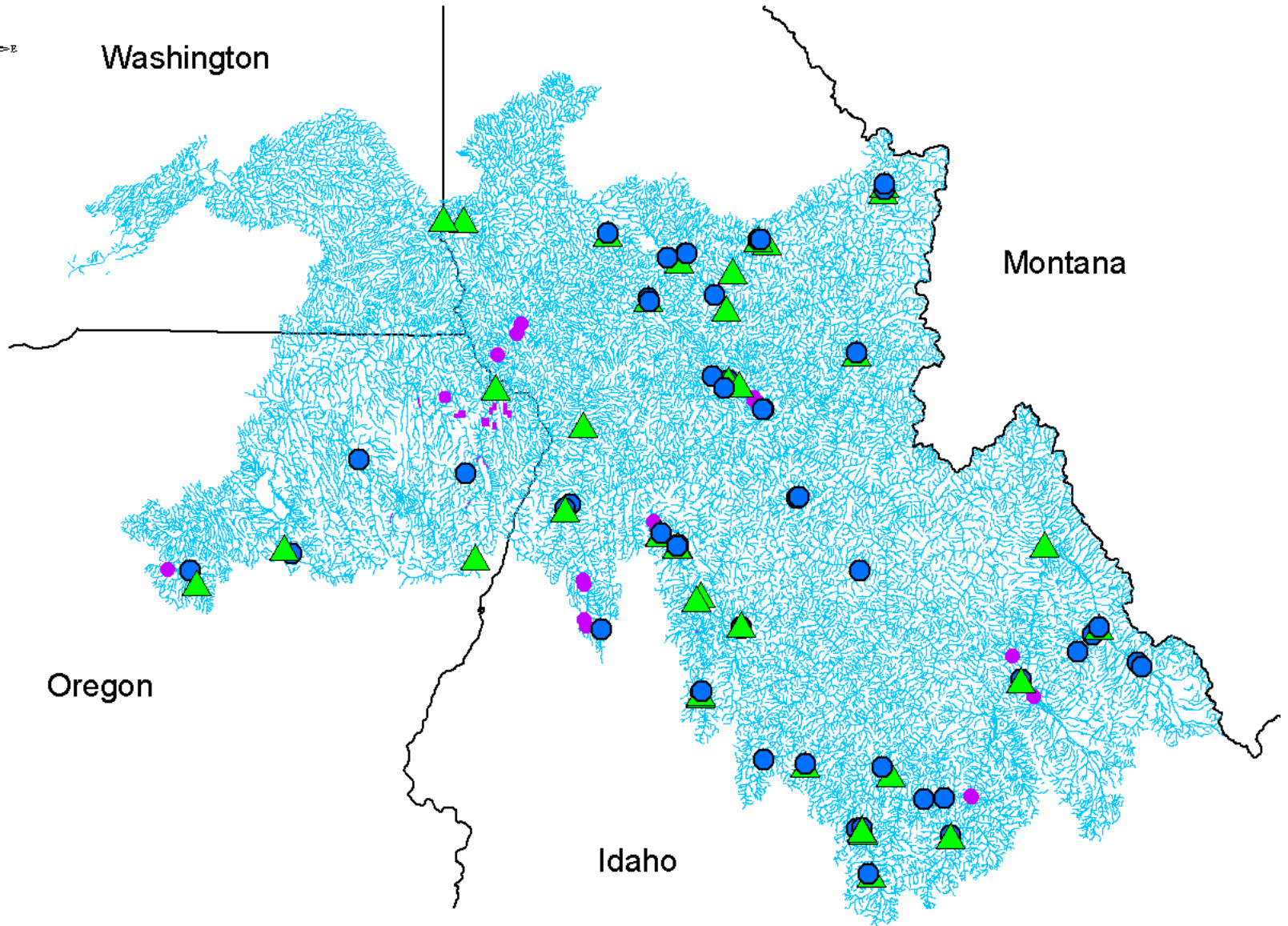Weir and Trap Locations
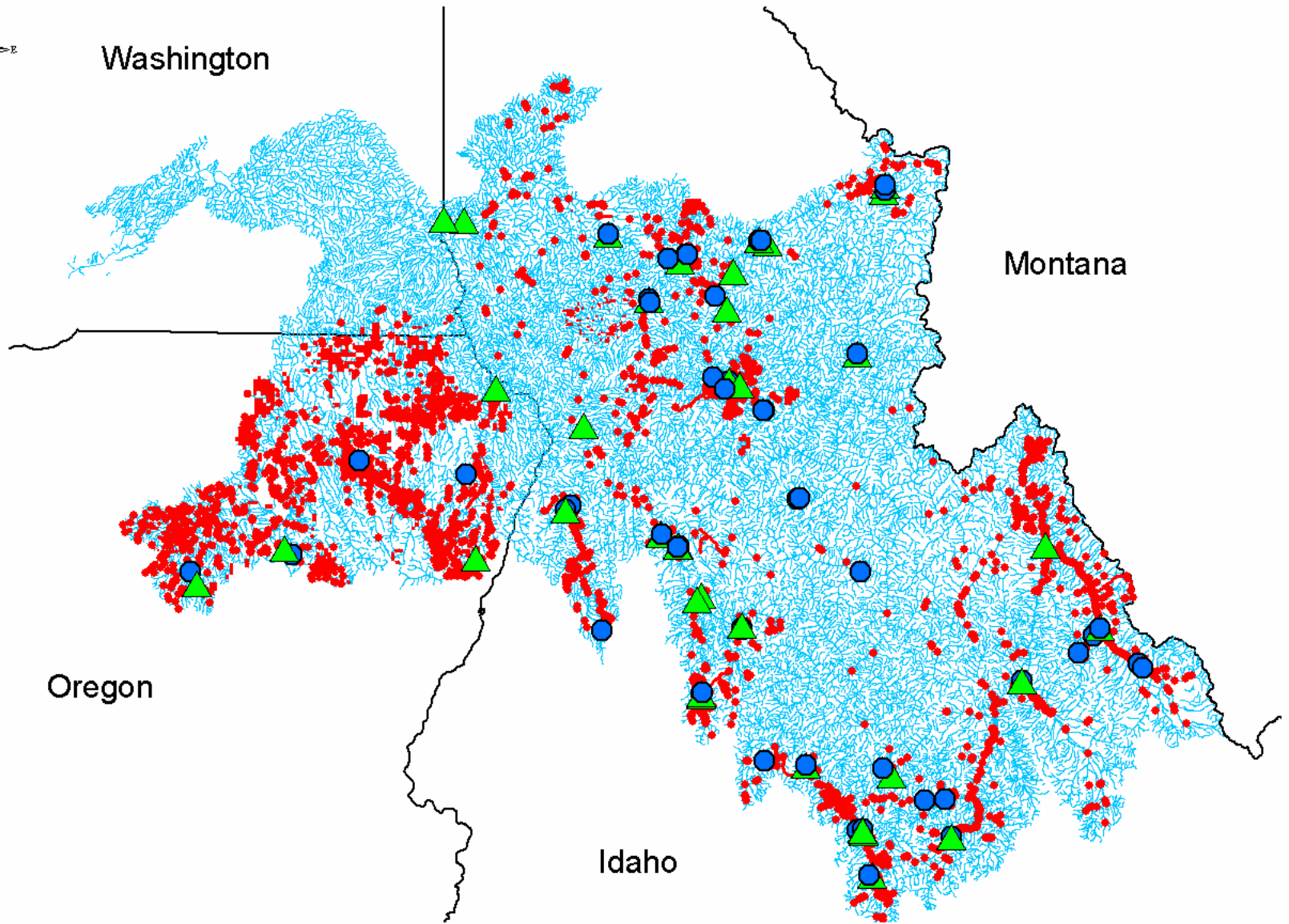
Restoration Projects (red dots)
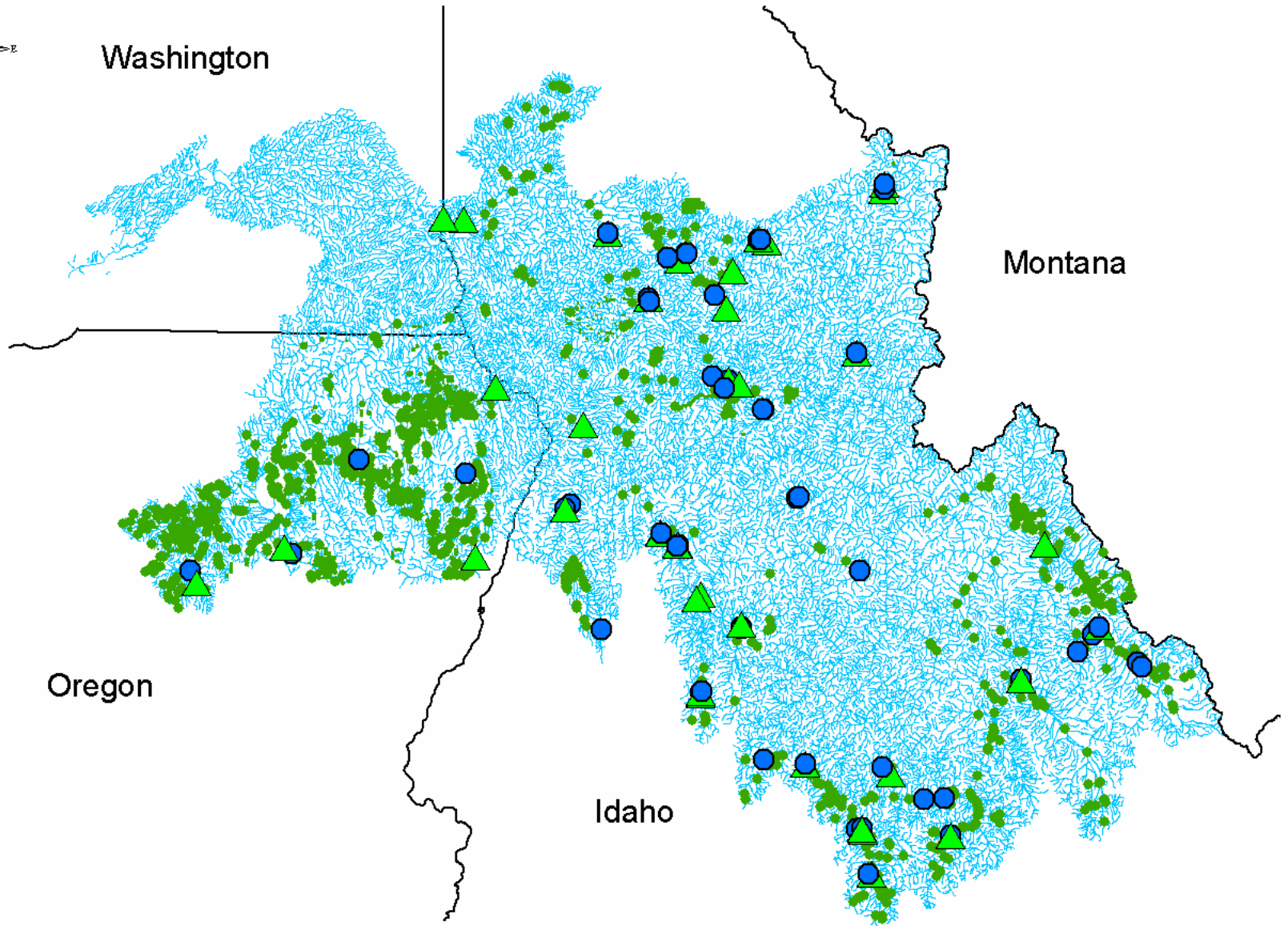- approx 3000 projects for Snake – Fisher Fisheries Ltd.

Acquisition/Protection Projects
(purple – 38 projects)

Restoration of Riparian Projects
(green – 1764 projects)
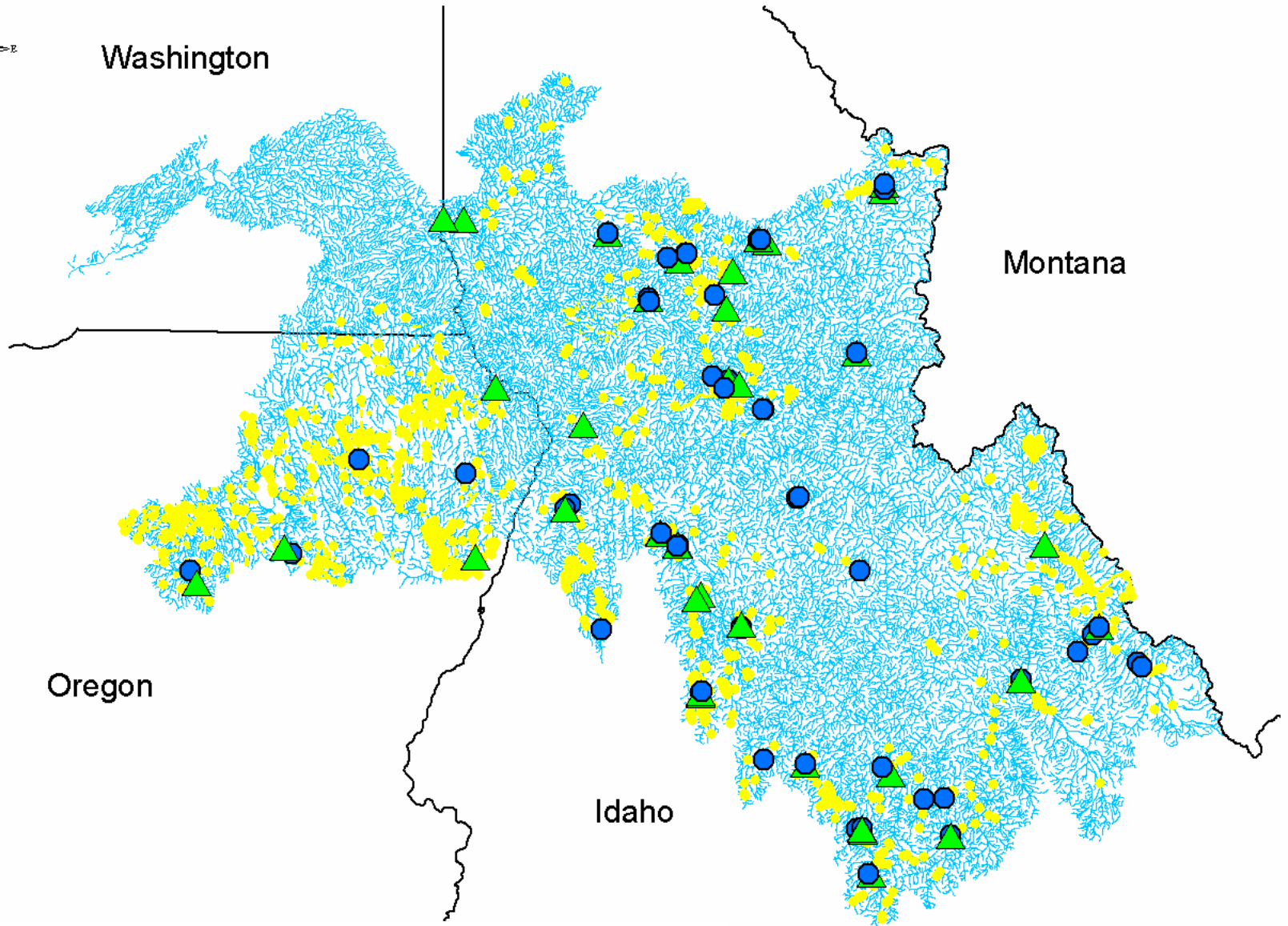
Water Quality/Quantity Improvements
(yellow – 1772 projects)
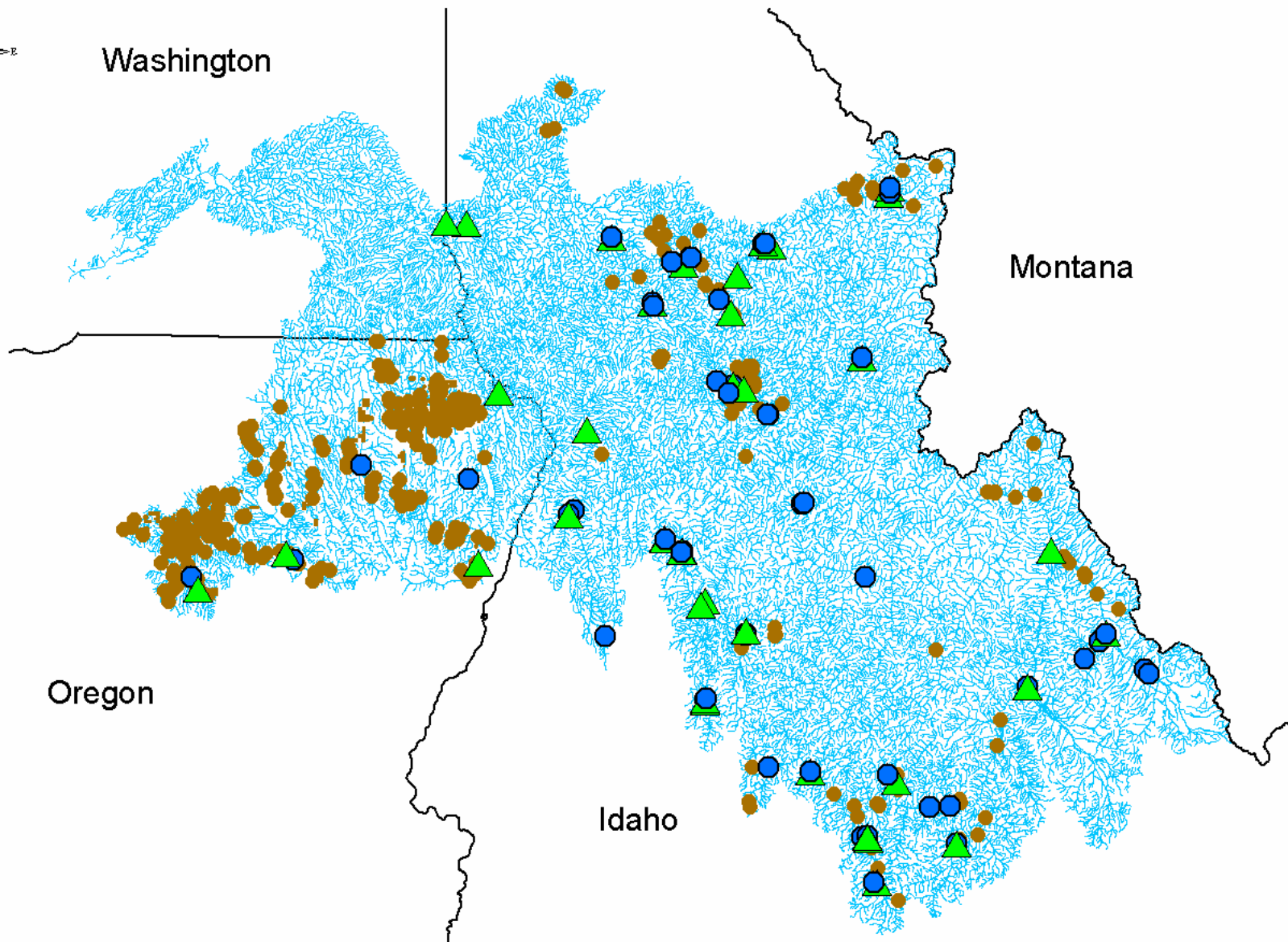
Habitat Features Projects - logs, boulders, gravel additions, pool creation, etc. (brown – 646 projects)
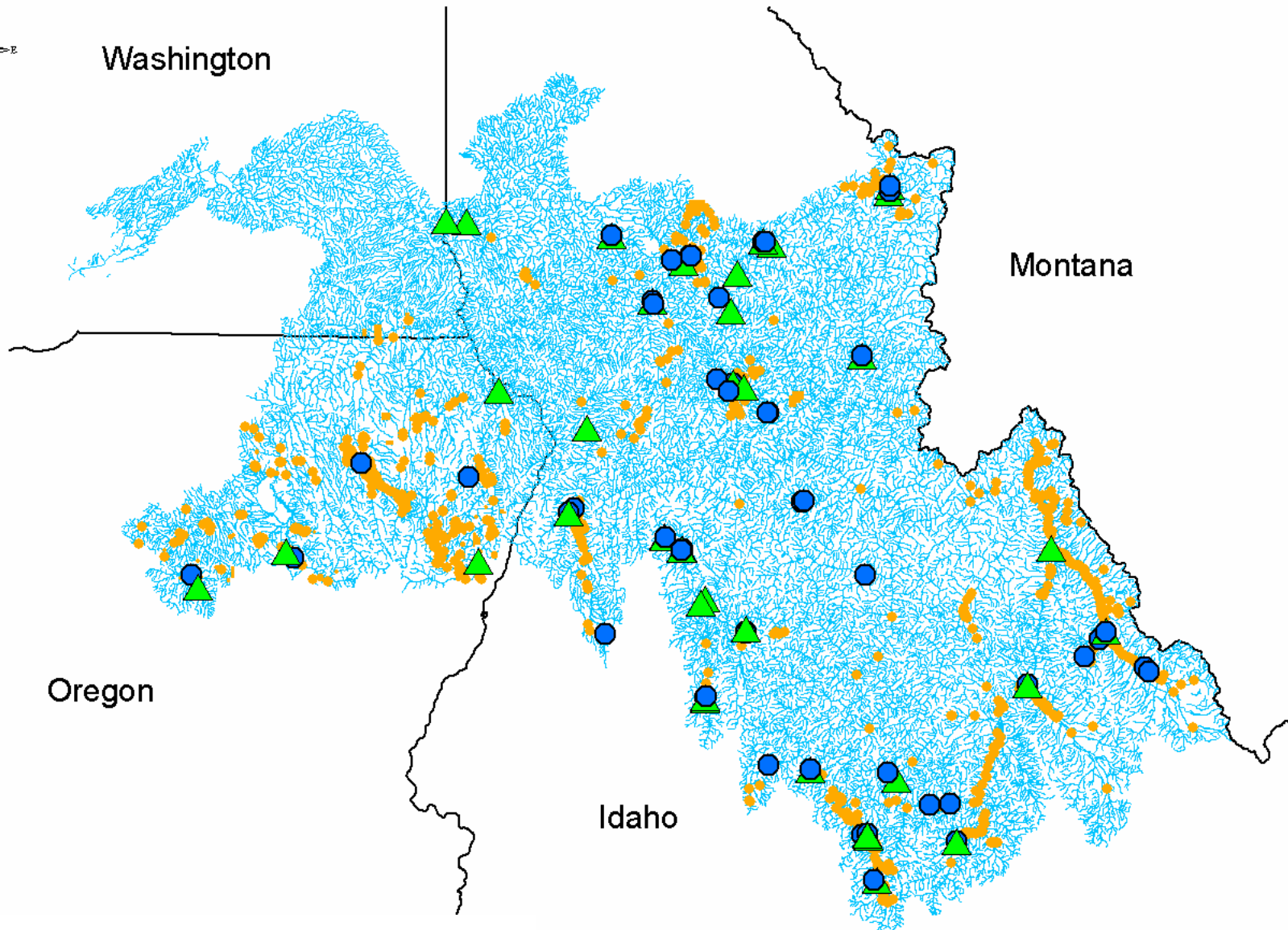
Fish Passage Improvements
(orange – 1060 projects)

Washington

Montana

Oregon

Idaho

Upcoming Habitat Projects:
2005 start date ● 36 projects
2006 start date ● 3 projects

(this dataset is currently being expanded)
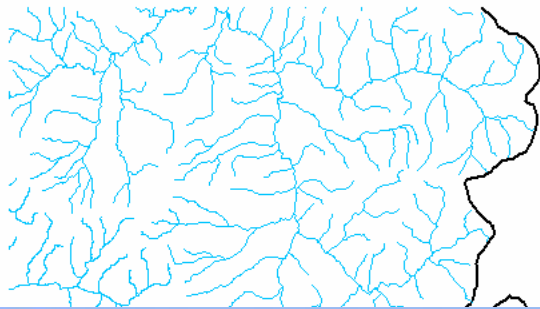
Identify Results

Layers: `<Top-most layer>`

Snake Basin Habitat Projects
  SAL 414

Location: (3727987.028415 1629020.010663)

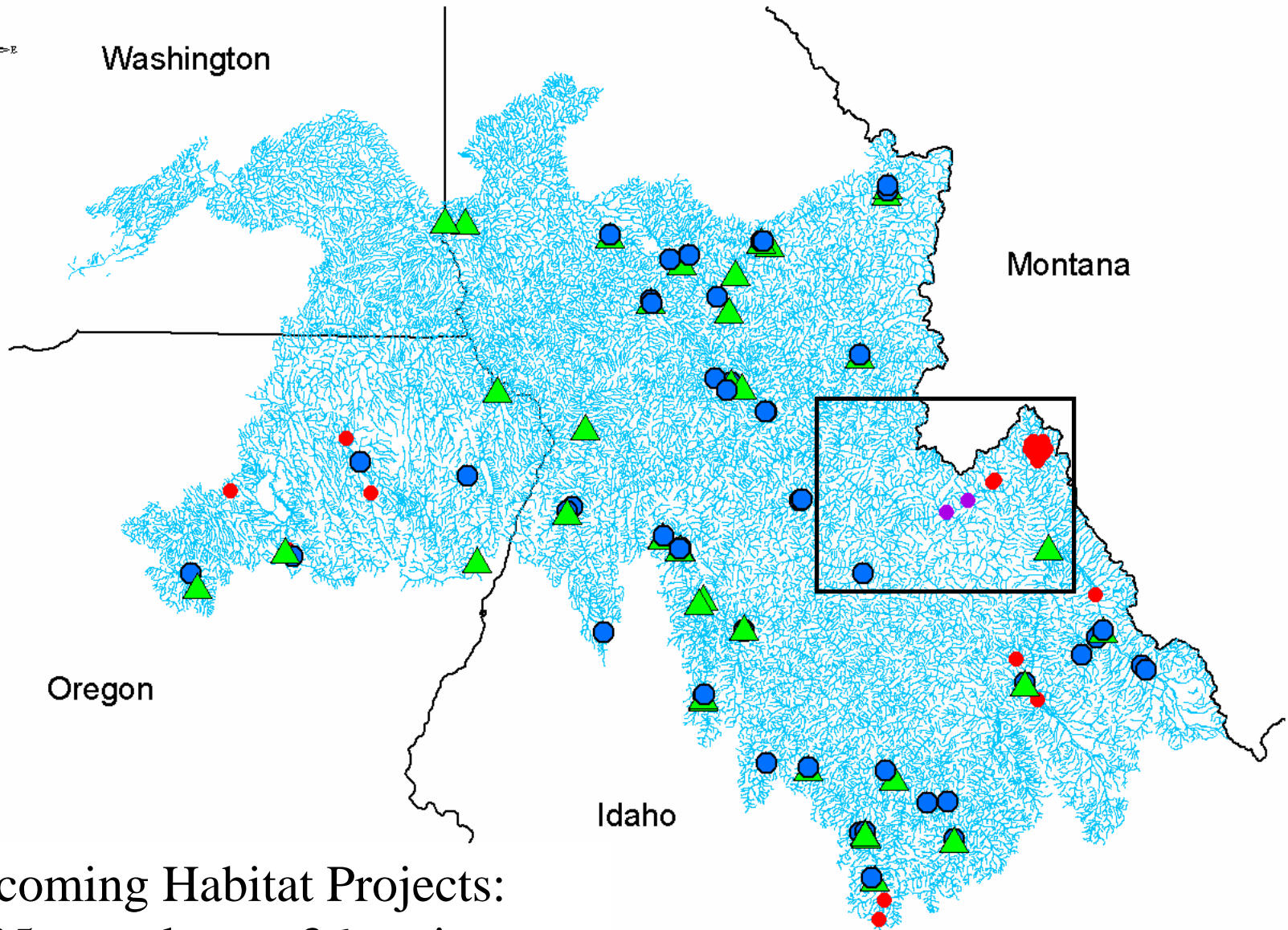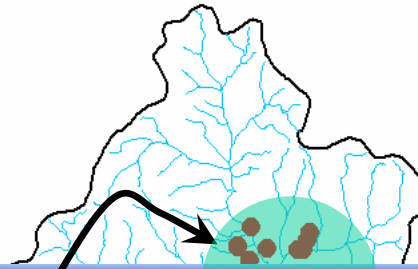| Field	Value
Agency	Salmon Challis NF North Fork RD
ProjectTit	Indian Creek Road Reconstruction
ProjectSum	Replace section of Indian Creek Road that captured Indian Creek during the 1
Subbasin	Mid-Salmon
Subbasin2	Mid-Salmon Tribs
ModelActio	Reduce Sediment Input; Restore Riparian Function
FishPassag	
HabitatFea	
ImproveWat	Y
RestoreRip	Y
Acquisitio	
Categories	0
YearStart	2005
YearEnd	2005
Location	Indian Creek
LocationNa	Indian Creek
75MapNameD	Ulysses; ID,MT
Downstream	SW ¼ NE ¼ Sec 12 T 24N R 19E PM Boise 1867
Downstrea1	45.426164
Downstrea2	-114.167532

jects

Sources of spatial data (Snake ESU)

Base layers:
1. StreamNet website

Fish Habitat Monitoring Sites:
1. Idaho DEQ website
2. ODFW Aquatic Inventories Project website
3. PIBO HUCs (Rick Henderson) - also available on PIBO website

Fish Population Monitoring Sites:
1. ODFW Data Resources website
2. IDFG GIS data (Evan Brown/Paul Bunn)
3. Nez Perce GIS data (Jeff Cronce)

Fish Habitat Actions
- Tim Fisher (Fisher Fisheries Ltd.)
- NOAA's restoration projects database (at a later date)

AREMP sampling sites –
blue circles

Pacific Northwest Water
Quality Sampling sites
(StreamNet) – red triangles
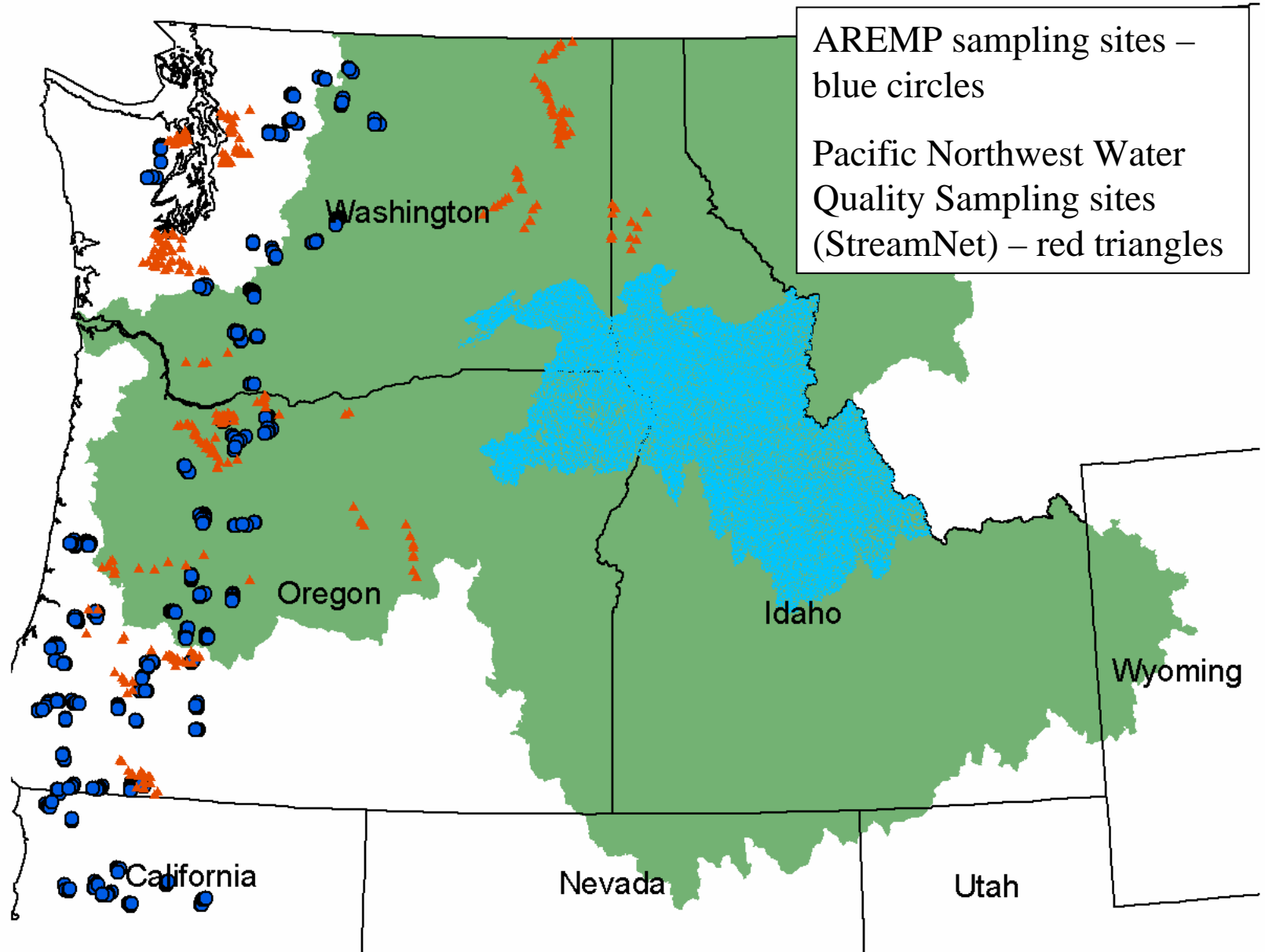
Some additional Fish Habitat Datasets outside Snake Boundaries

Use of spatial data in design tasks:

- Assess overlaps in fish population and fish habitat monitoring stations

- Evaluate arrangement of existing monitoring stations in relation to geographic delineations for TRT populations, etc.

- Evaluate arrangement of monitoring stations in relation to hatchery stocking areas, hydro facilities, harvest zones, habitat restoration projects, etc.

- Given availability of prospective data can improve flexibility in proactively adjusting monitoring design layouts

Spatial data for Snake monitoring easy to obtain?

- No, pretty cumbersome

- Mix of agency data custodians, individual web servers

- This example doesn't represent the full range of data that may be available (hard to know all of what's out there, hard to figure out how to get it)

- No centralized system to identify/serve up available data

In Comparison: Pacific region Canada - all fish habitat/population inventory data is identified and served up by 4 centralized and linked GIS websites (DFO's Mapster the central hub)

- FishWizard (BC Fisheries data warehouse)
- Mapster (DFO Fisheries inventory databases)
- Fisheries Projects Registry (provincial/federal habitat projects)
- Communjty Mapping Network (municipal, NGO, community groups' fisheries data - administered jointly by province/DFO)

Helps to have only 2 fisheries agencies!

- In BC little funding exists currently to undertake much "monitoring", but web systems for serving up existing inventory data in spatial formats well developed