Topics

- Definition of high quality habitat

- Description of High Intrinsic Potential habitat

- Description of maps

- Modeling conducted by Nickelson and Lawson (1998) demonstrates that during periods of prolonged poor ocean survival (i.e. ≤ 3%), coho populations will be more likely to persist in areas with high quality winter habitat.

- Based on expected life cycle survival, a population at full seeding requires winter habitat with a quality sufficient to support a rearing density of > 0.3 juveniles/m^2 when marine survival is 3% for the population to replace itself (i.e. two spawners produce two adults).

-The identification of high quality habitat within each population unit was determined using the “HLFM” model (Nickelson 1998) and the model “Habrate” (Burke et al. 2001) modified to accommodate Oregon Coast coho.

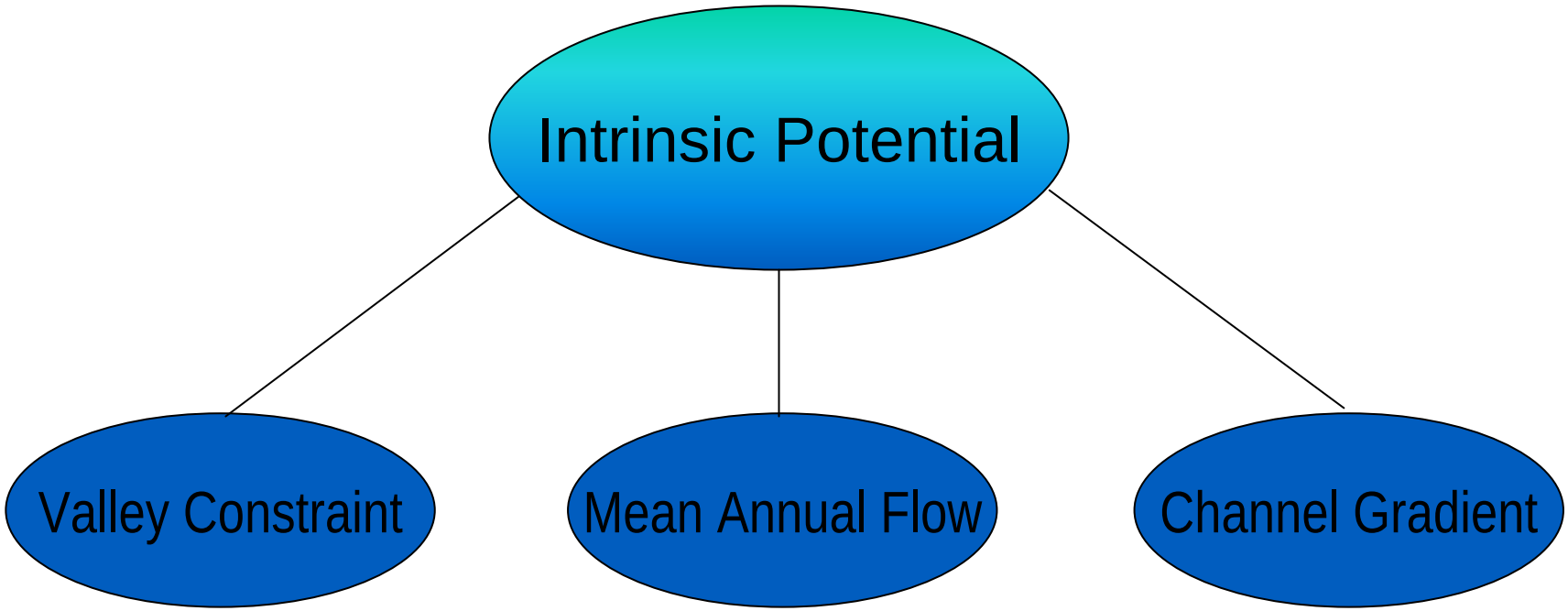
-Use both the HLFM and Habrate models because they capture two different components of high quality habitat.

-The HLFM model does a good job of capturing channel morphology related aspects of winter habitat quality but does not include habitat complexity (e.g. amount of large wood).

-The Habrate model incorporates habitat complexity into habitat rankings but downplays the importance of channel morphology (e.g. off-channel habitat and beaver ponds).

Intrinsic Potential

- Describes potential to provide high quality winter habitat
- Attributes are static over long time frames
- Calculated as the geometric mean of attributes



Low Intrinsic Potential

High gradient, constrained, or high (or very low) mean annual flow

High Intrinsic Potential

Low gradient, unconstrained, and low to moderate mean annual flow

Why all the fuss about the Intrinsic Potential of habitat?

- Coastal coho assessment showed that we need to be more strategic in our restoration efforts.

-IP is a tool that can assist us in developing population level restoration plans

-In addition to considering the intrinsic potential of a stream reach we must also consider the feasibility of improving habitat in that reach and the possibility that fish will find and use it once restored

FAQs about High Quality Habitat and Winter High Intrinsic Potential

-What evidence is there that WHIP is related to high quality habitat?

- Why is it that fish surveys (e.g. RBA for juveniles) sometimes show the highest fish numbers far removed from WHIP areas?

- Why do your maps show some areas (e.g. mainstem lower Nestucca) as being WHIP areas when there is no way these areas are highly productive for coho?

-Why don’t some areas I know to be high quality for coho show up on your map as WHIP areas?

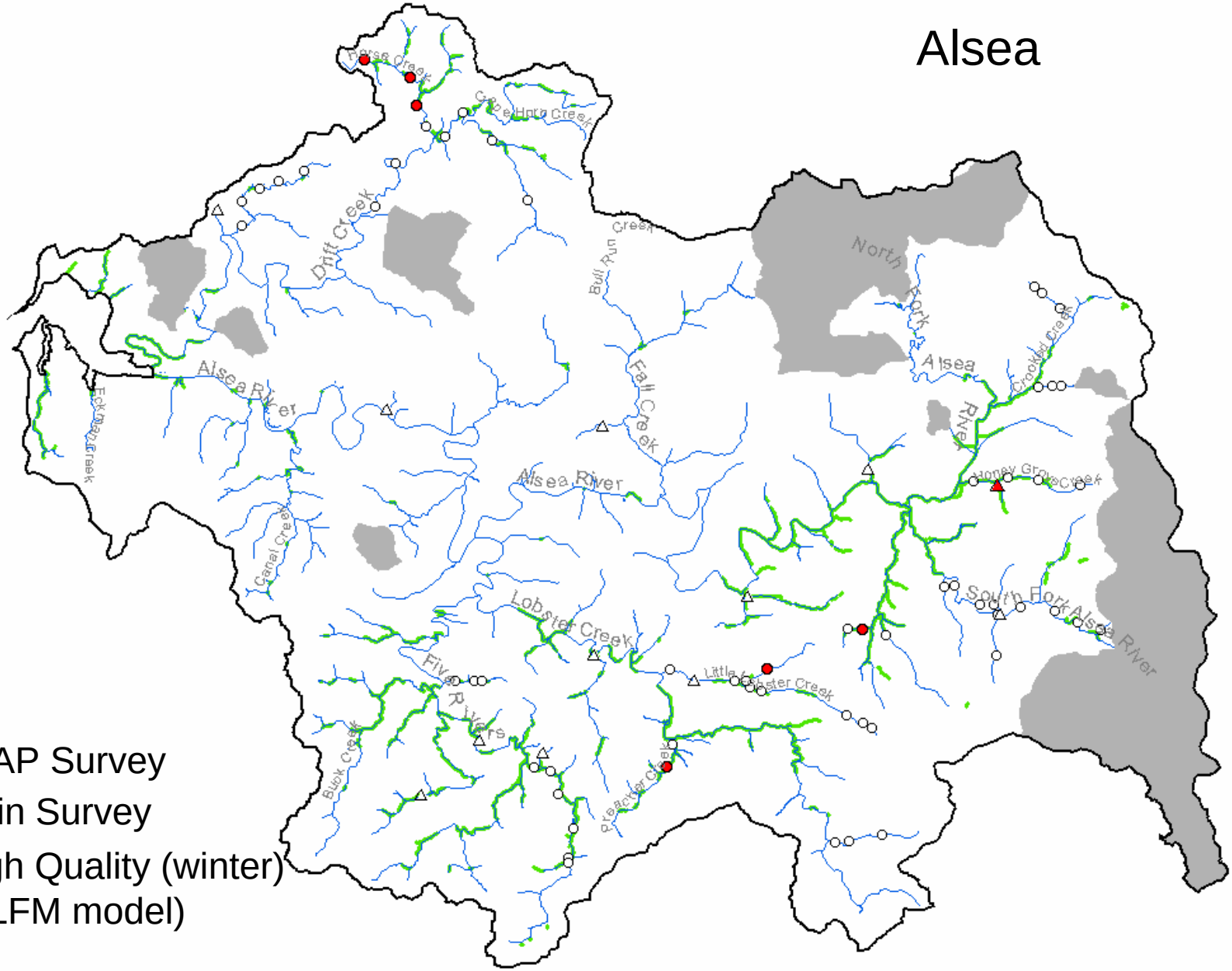
A few notes on the following maps

-We will be updating the maps soon to show the intrinsic potential of each reach, not just the highest intrinsic potential reaches

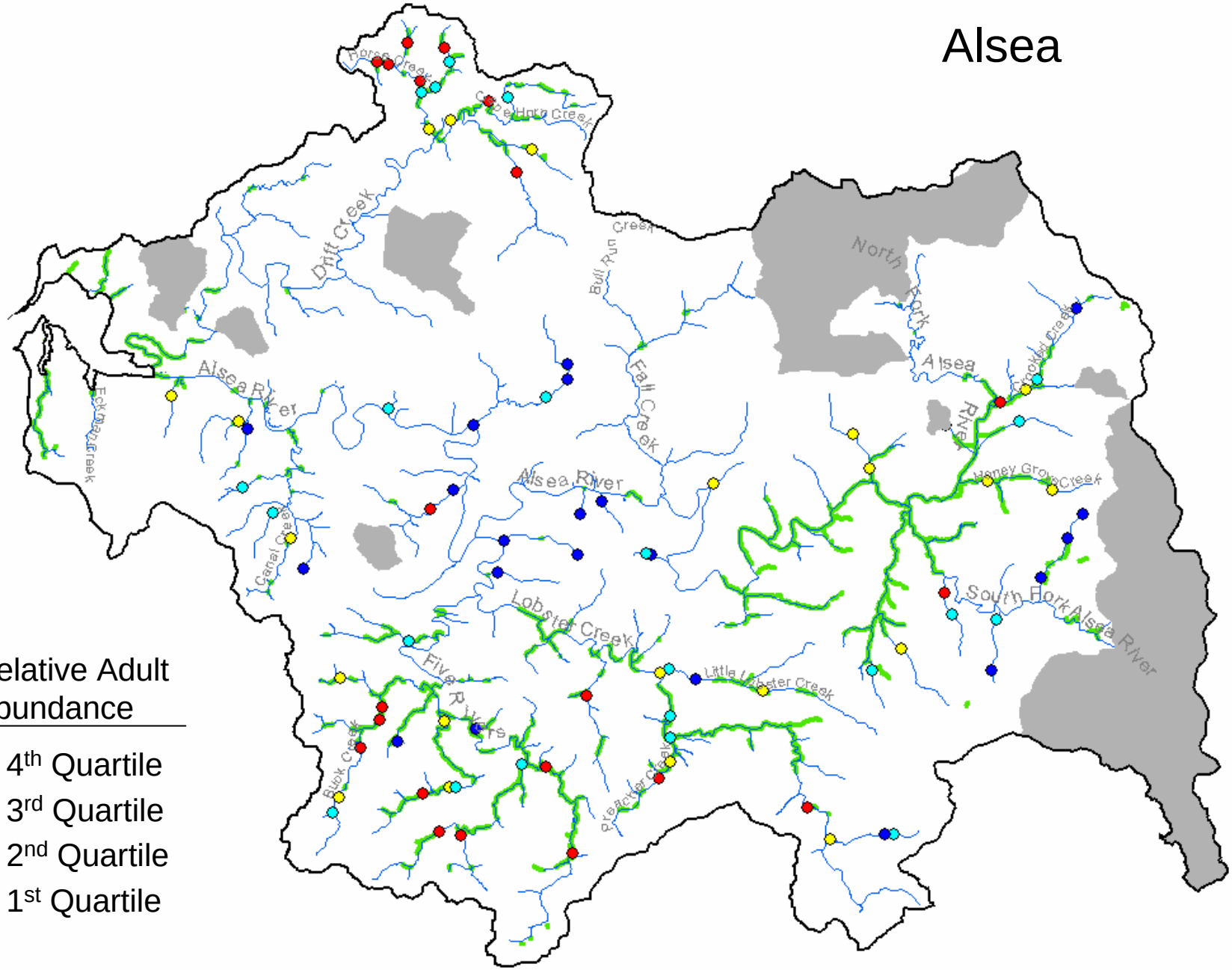
- The high habitat quality sites shown are only those as determined by HLFM model. We are updating these maps to show the habitat quality of each site, with separate maps for the HLFM and HABRATE models.

- Keep in mind that it may appear from the fish passage maps that there are barriers on larger streams that you know do not have a barriers. In reality the barriers are probably on a small tributaries that do not show up at the scale at which the maps are generated.

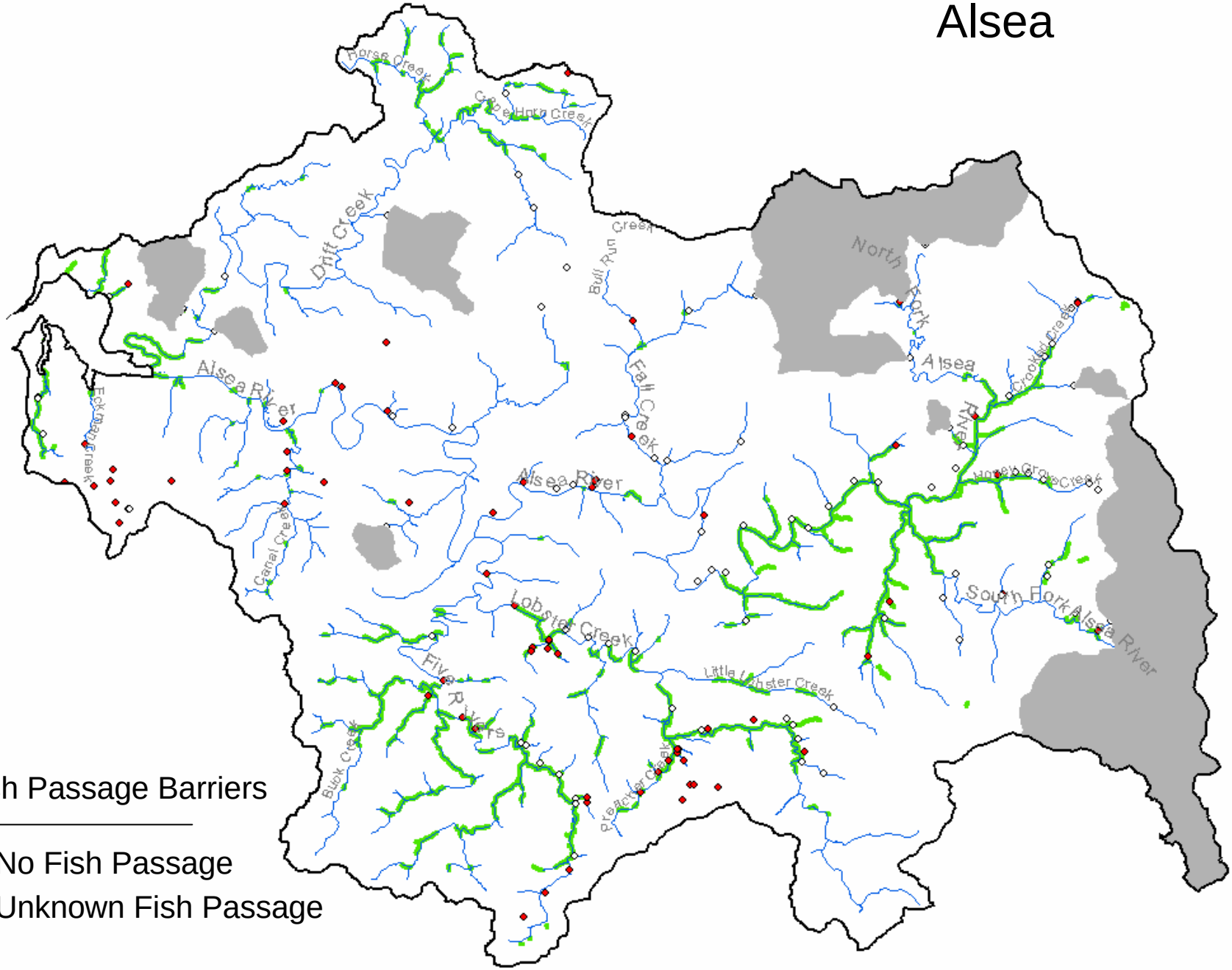
Alsea


Drift Creek
Bull Run Creek
Fall Creek
North Fork Alsea River
Alsea River
Crooked Creek
Honey Grove Creek
Canal Creek
Lobster Creek
South Fork Alsea River
Five Rivers
Buck Creek
Preacher Creek
HIP
EMAP Survey
Basin Survey
High Quality (winter) (HLFM model)

Alsea

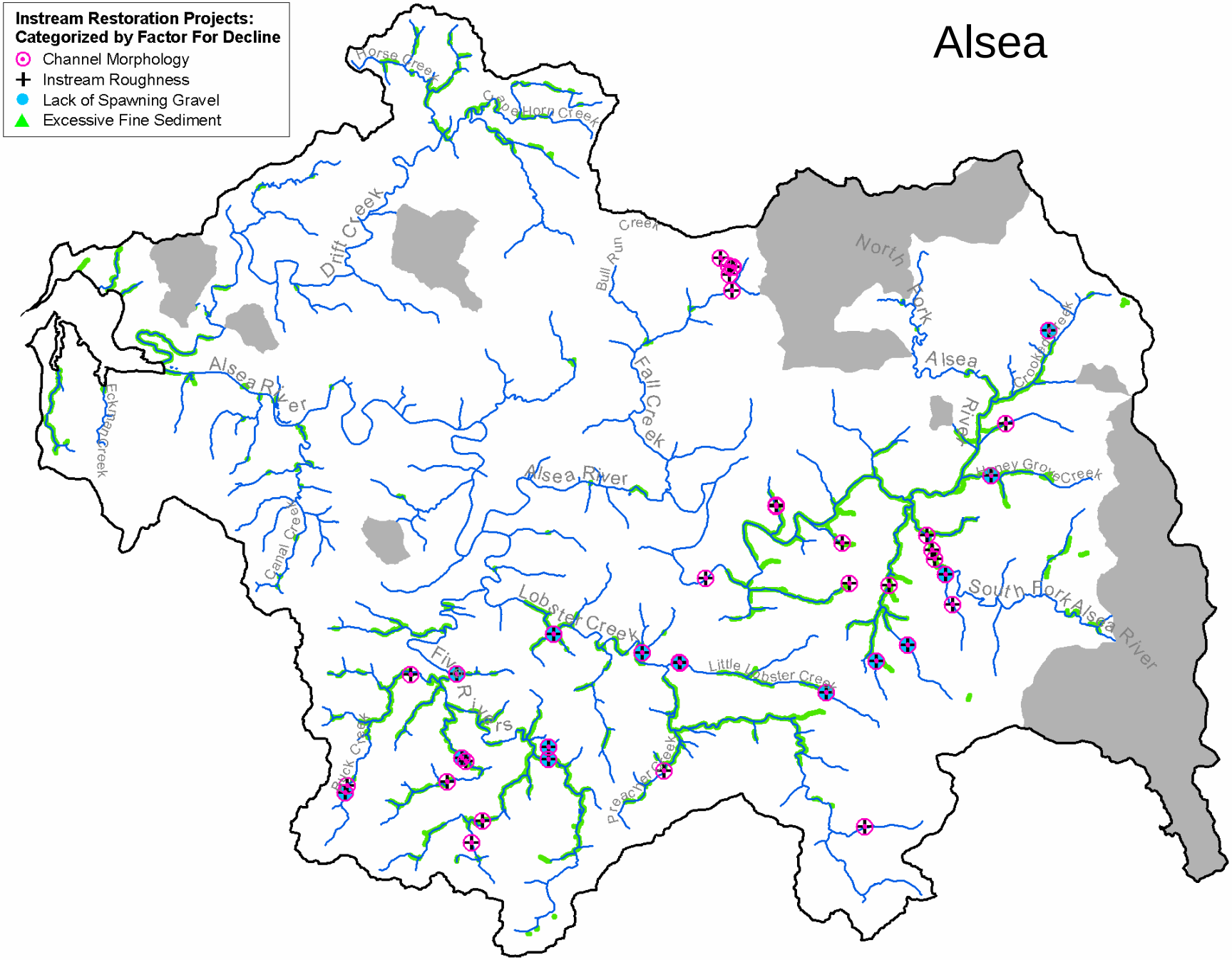

Drift Creek
Bull Run Creek
Fall Creek
Alsea River
North Fork Alsea River
Crooked Creek
Honey Grove Creek
South Fork Alsea River
Lobster Creek
Little Lobster Creek
Five Rivers
Buck Creek
Preacher Creek
Canal Creek
Eckmeyer Creek
Relative Adult Abundance
4th Quartile
3rd Quartile
2nd Quartile
1st Quartile

Alsea



Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage


Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment
Alsea
Horse Creek
Cabot Horn Creek
Drift Creek
Bull Run Creek
North Fork Alsea River
Crooked Creek
Alsea River
Eckman Creek
Fall Creek
Alsea River
Honey Grove Creek
Canal Creek
Lobster Creek
South Fork Alsea River
Five Rivers
Little Lobster Creek
Rock Creek
Preacher Creek

My Recommendations

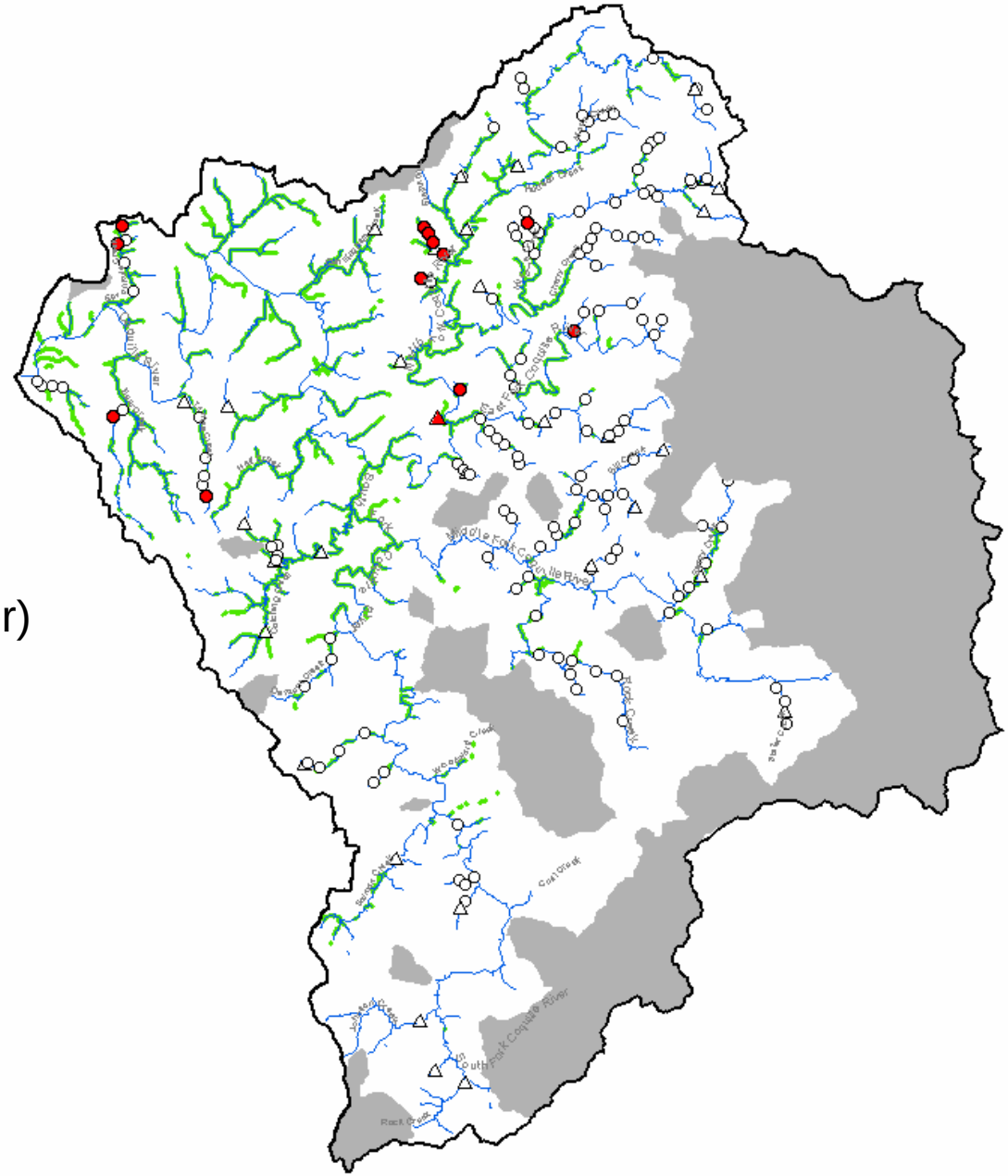
- Incorporate watershed council and other information into GIS

- Conduct winter habitat surveys to fill in gaps

- Use IP as one tool in prioritizing restoration efforts

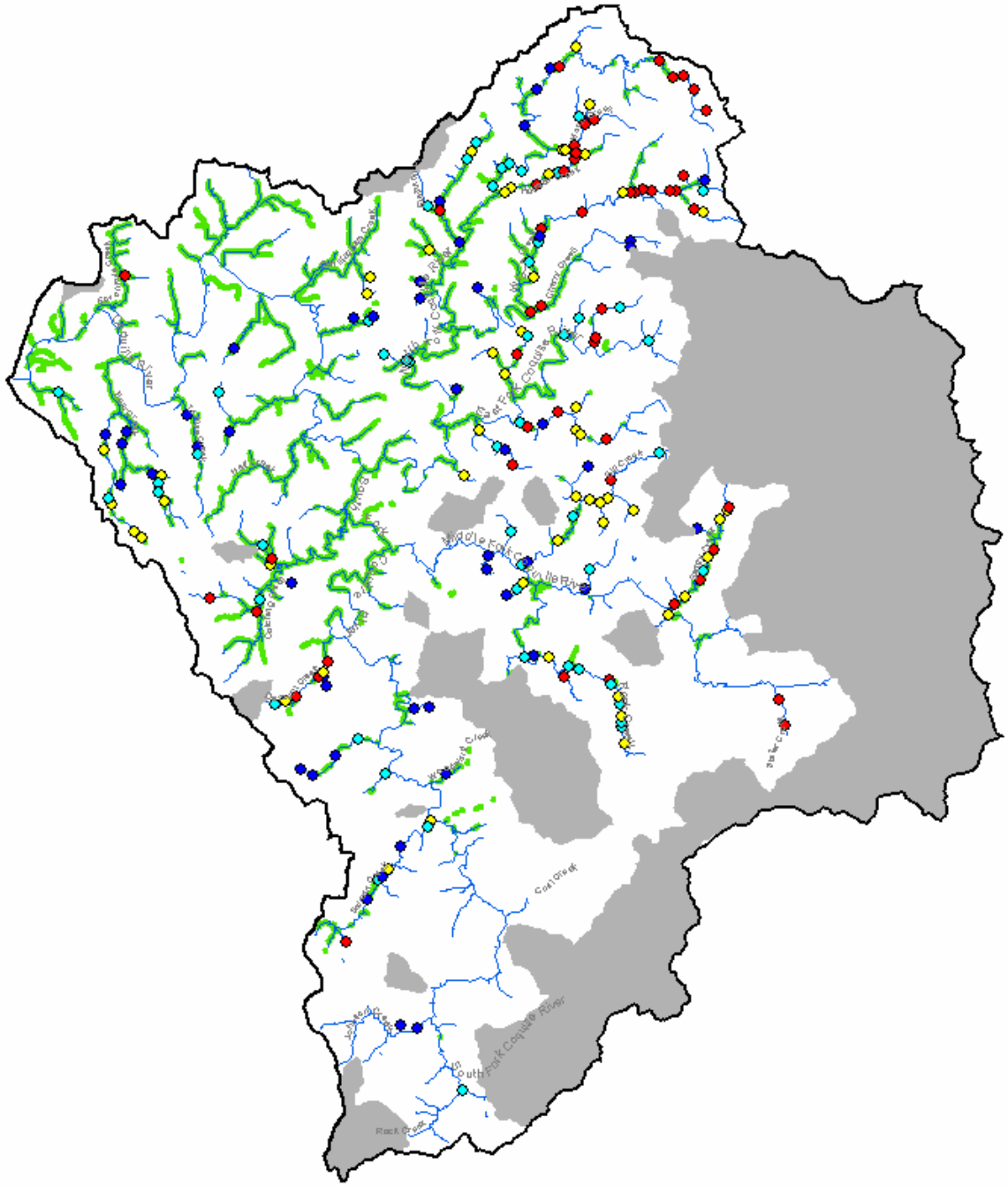
- Get more spatially explicit information on temperature limitations

Coquille



- HIP
- △ EMAP Survey
- ○ Basin Survey
- ● ▲ High Quality (winter) (HLFM model)

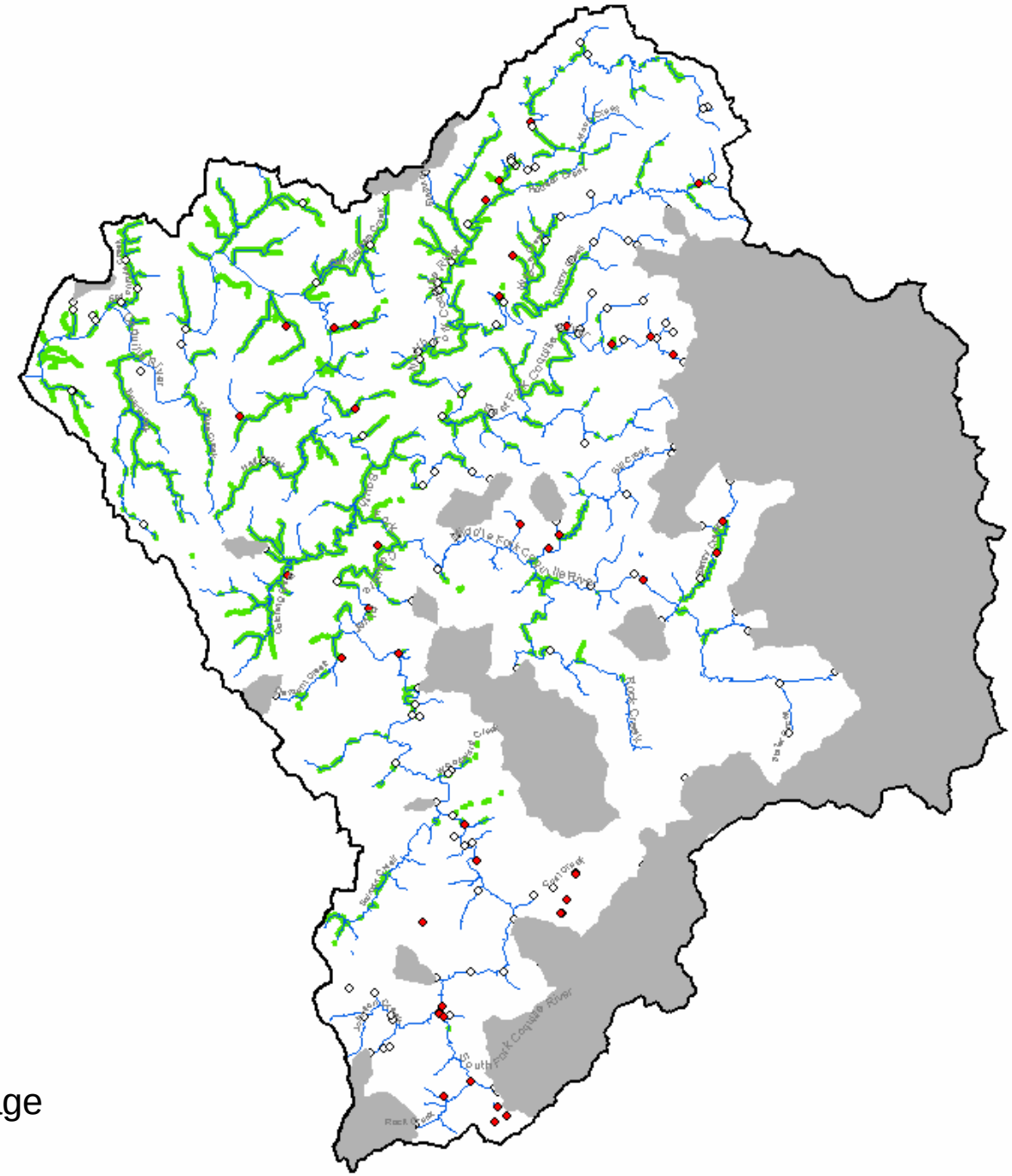
Coquille



Relative Adult Abundance

- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile

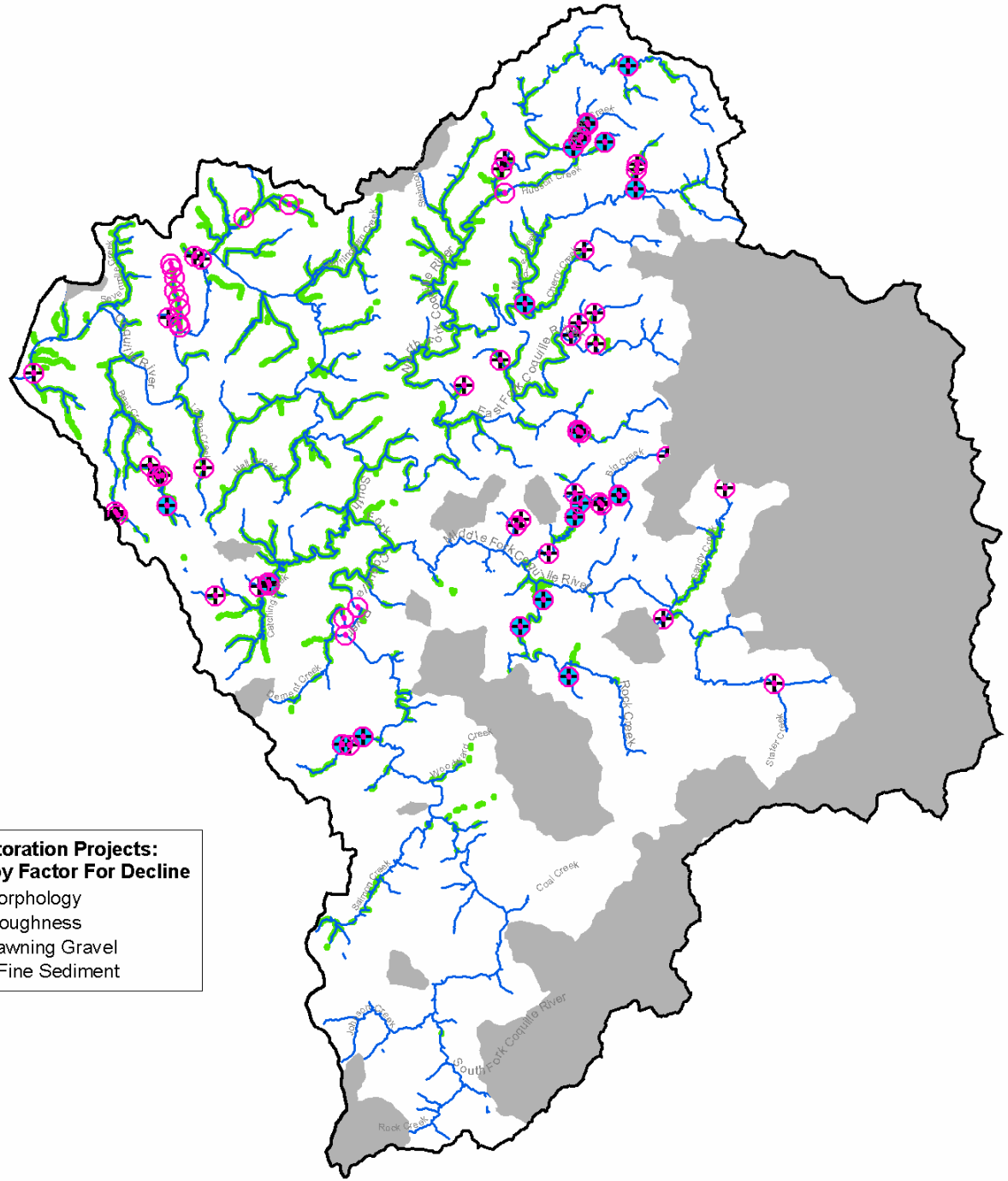
Coquille



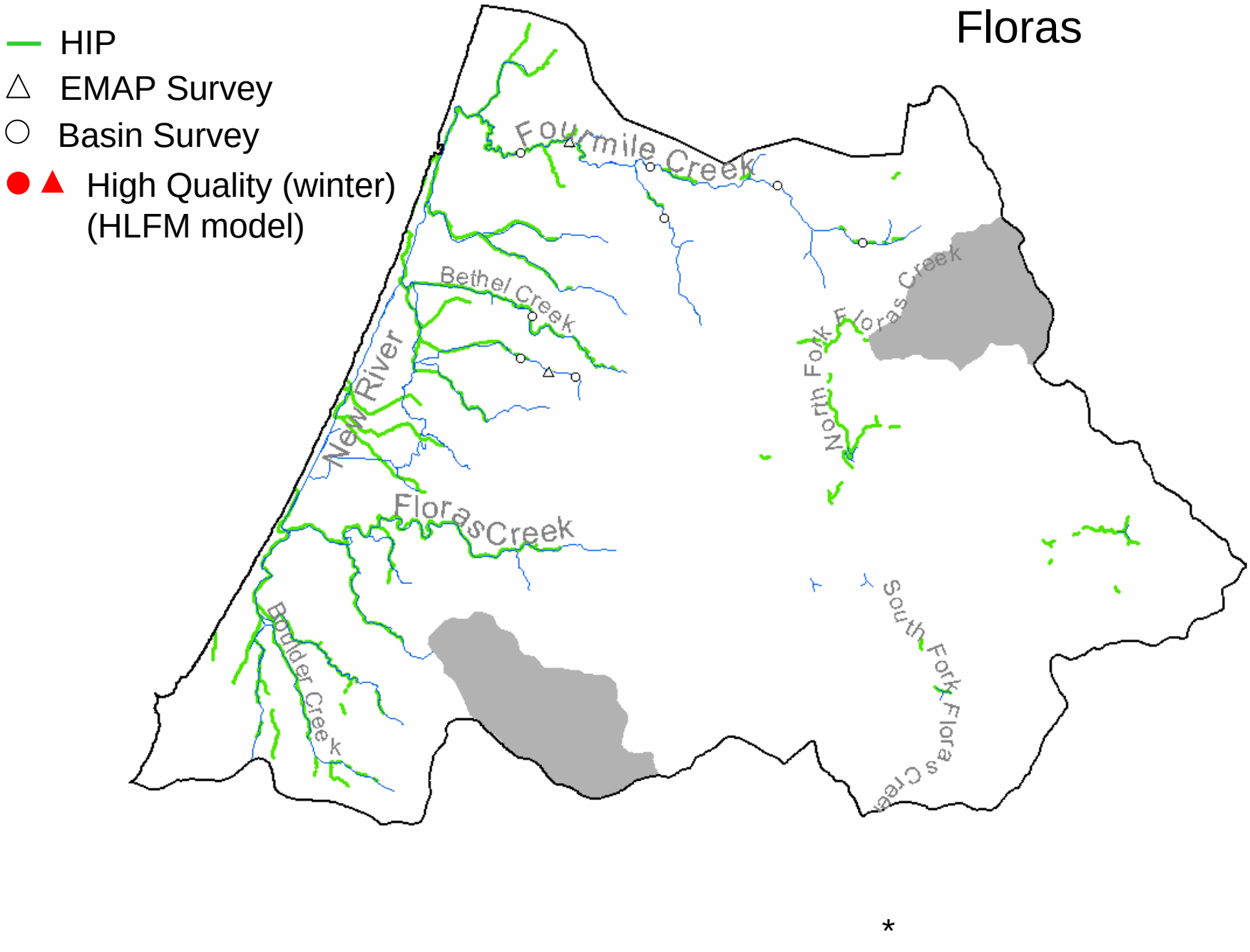
Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage

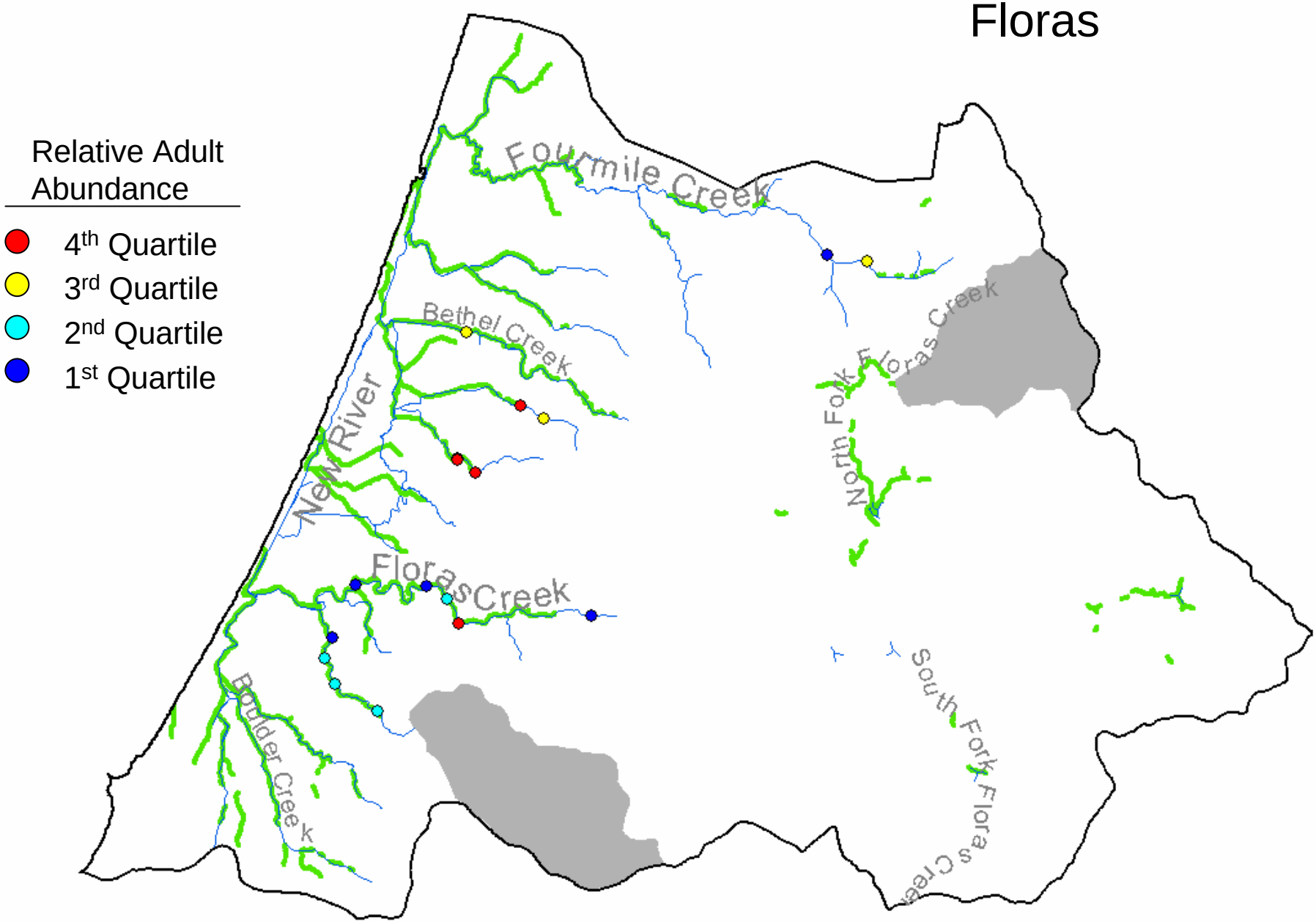
Coquille


Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment
Middle Fork Coquille River
East Fork Coquille River
South Fork Coquille River
Rock Creek
Coal Creek

Floras


HIP
EMAP Survey
Basin Survey
High Quality (winter)
(HLFM model)
Fourmile Creek
Bethel Creek
New River
North Fork Floras Creek
Floras Creek
Boulder Creek
South Fork Floras Creek
*

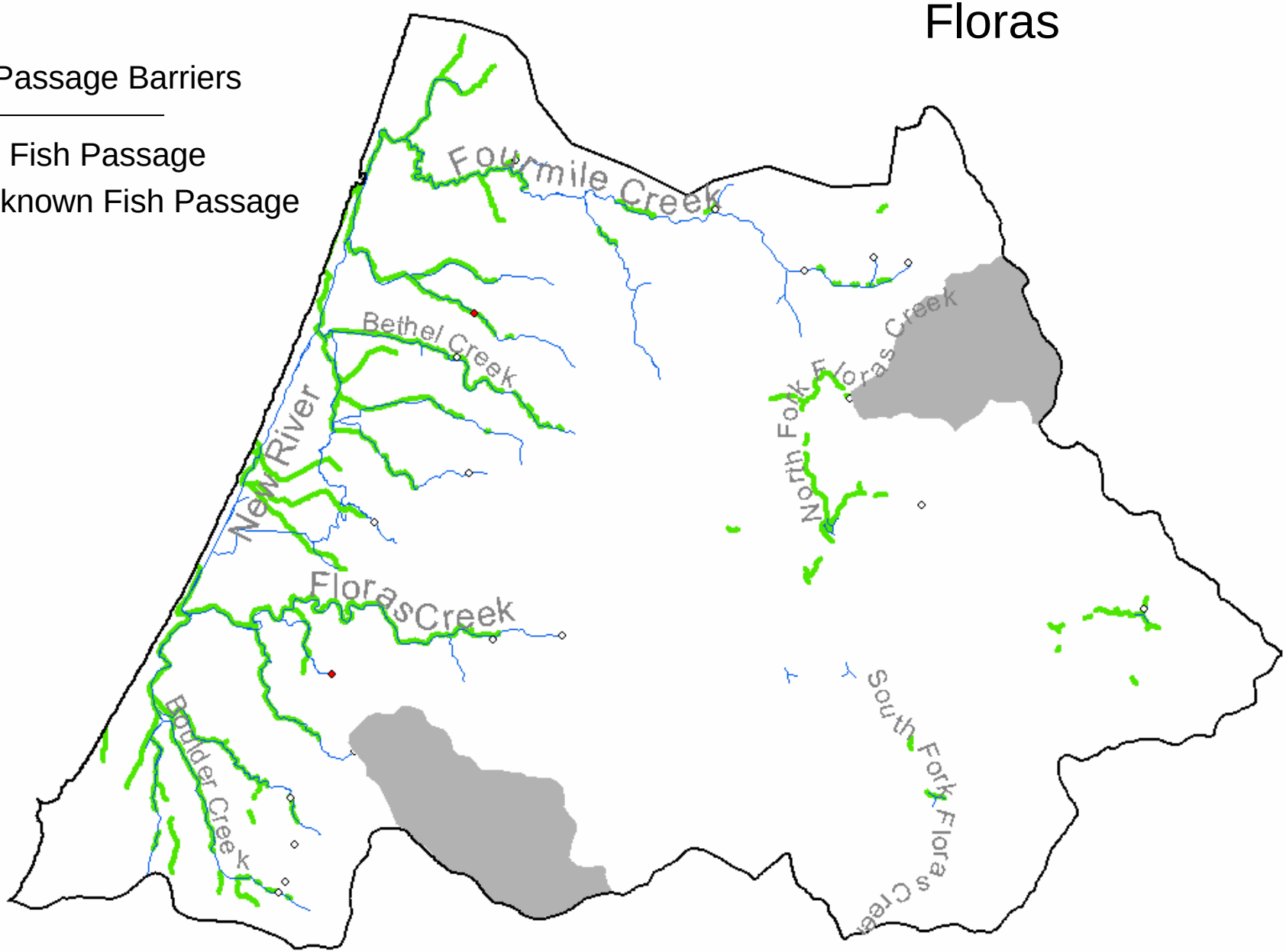
Floras

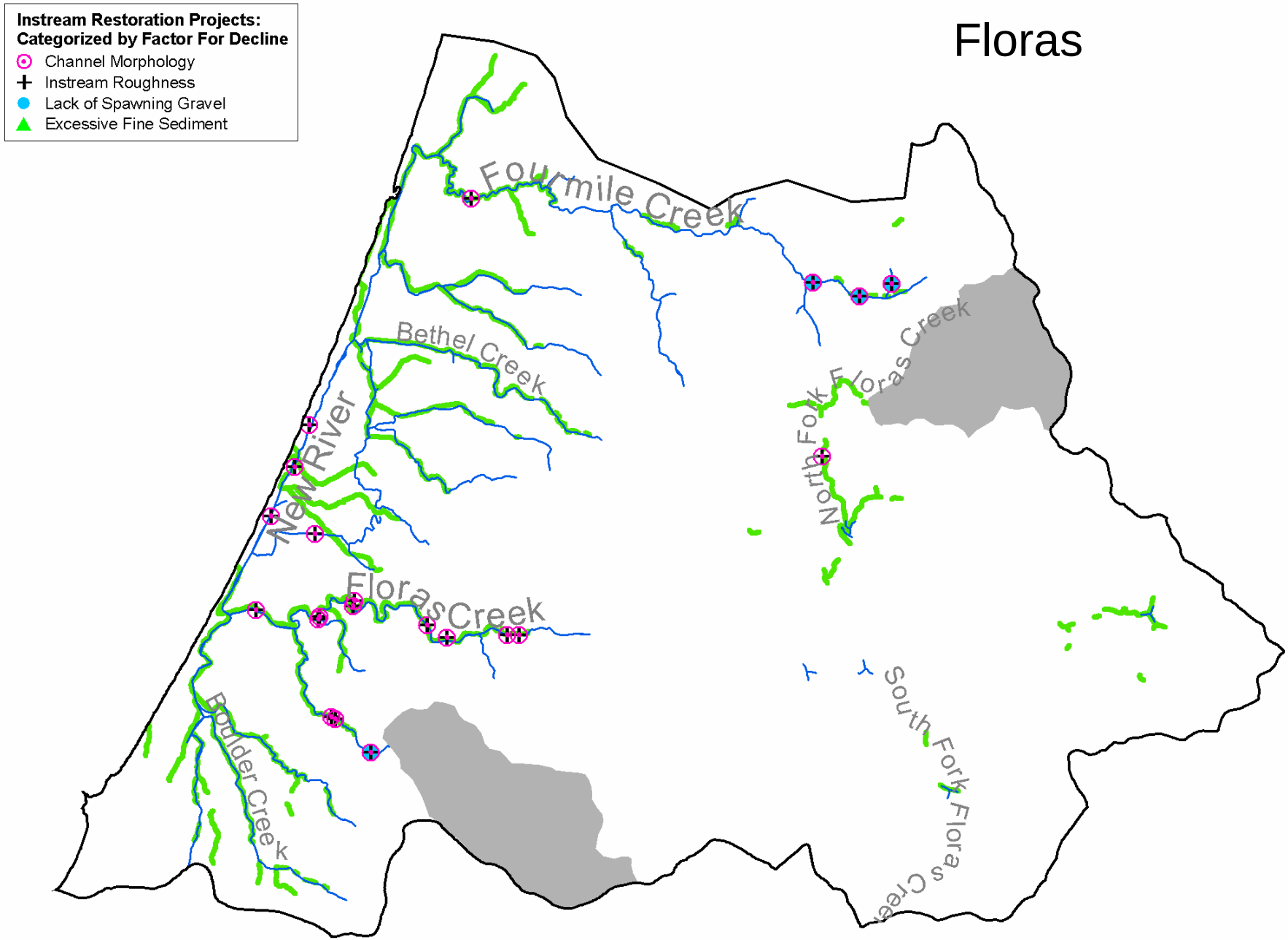

Relative Adult Abundance
4th Quartile
3rd Quartile
2nd Quartile
1st Quartile
Fourmile Creek
Bethel Creek
New River
North Fork Floras Creek
Floras Creek
Boulder Creek
South Fork Floras Creek

Floras

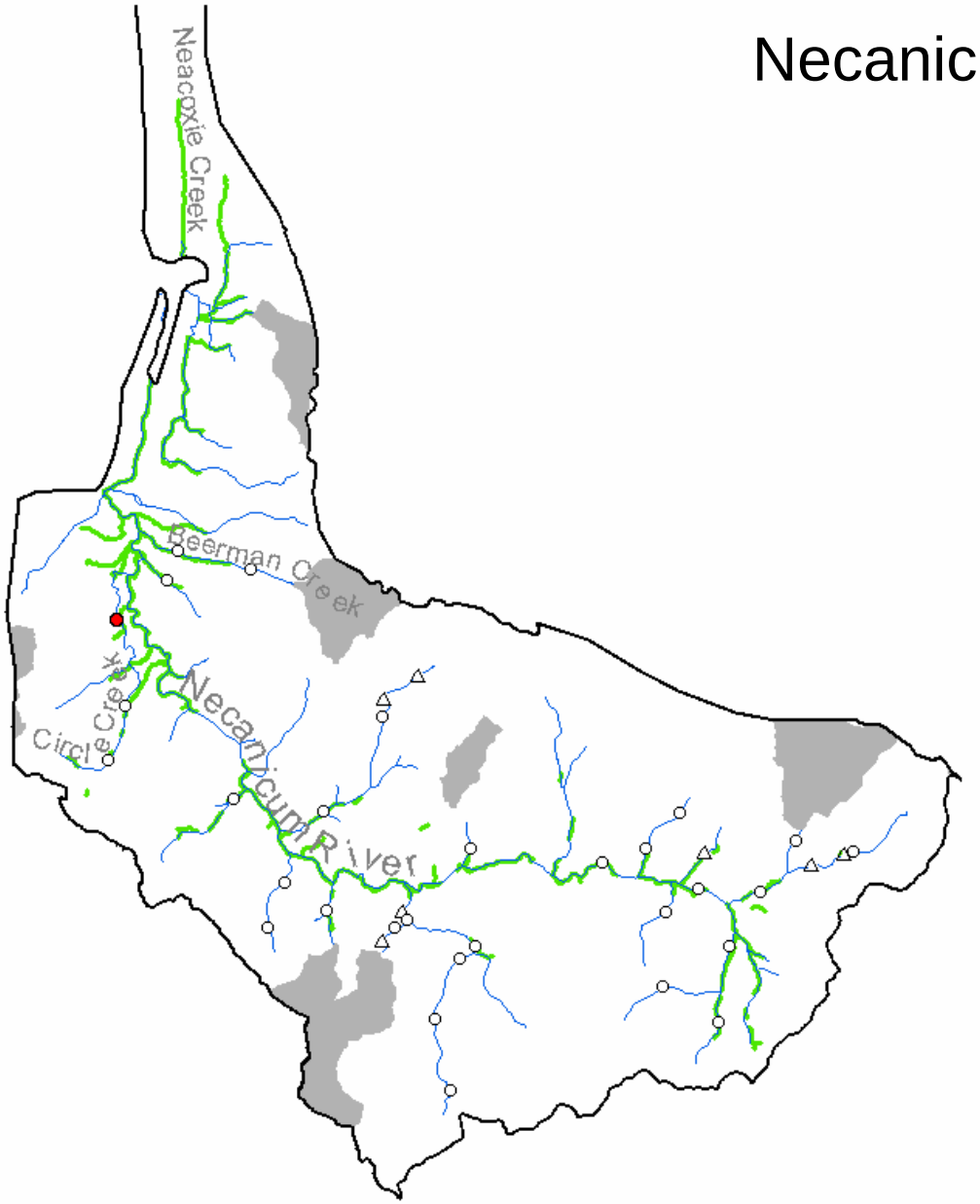
Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage




Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment
Floras
Fourmile Creek
Bethel Creek
New River
North Fork Floras Creek
Floras Creek
Boulder Creek
South Fork Floras Creek

Necanicum



— HIP

△ EMAP Survey

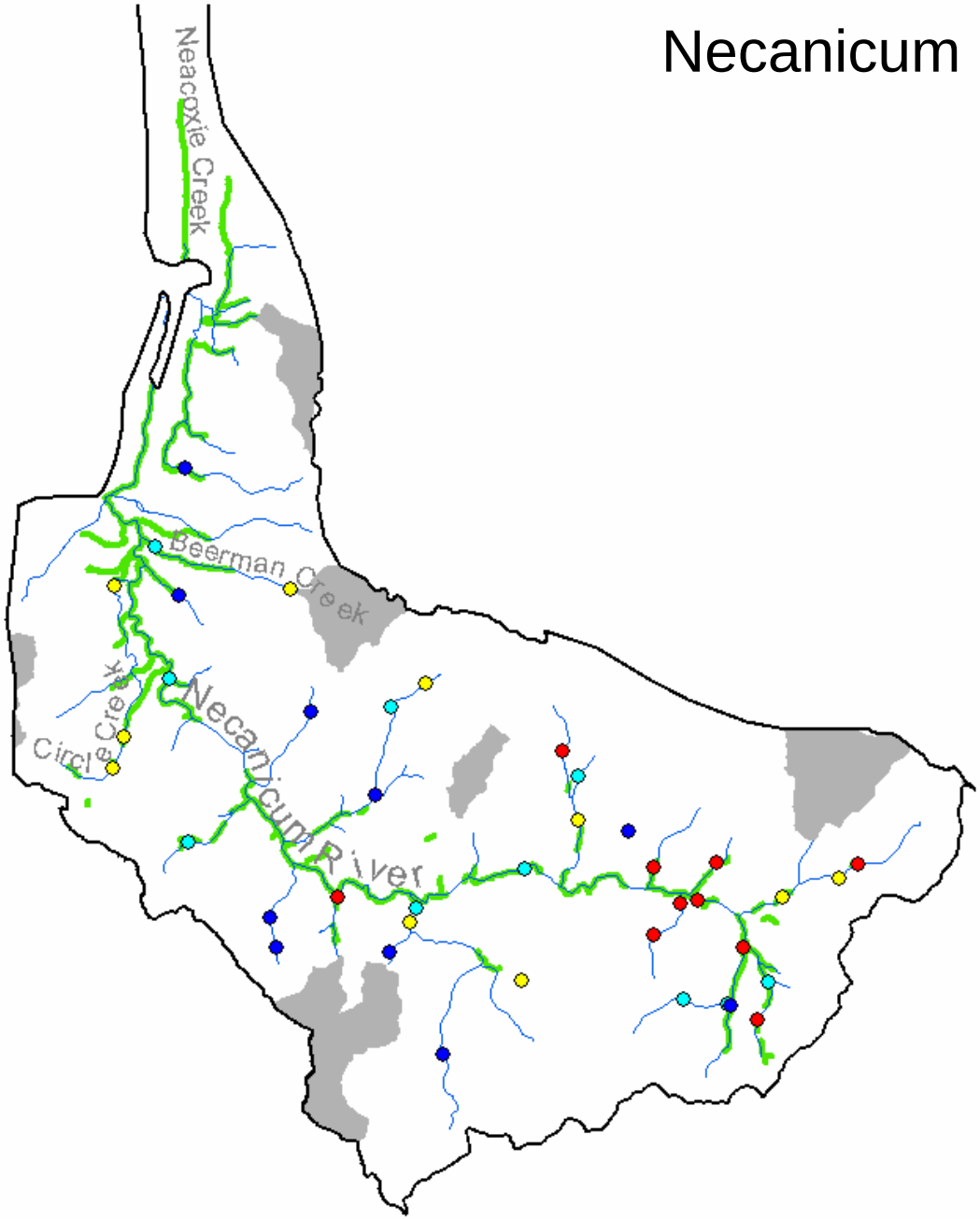
○ Basin Survey

● ▲ High Quality (winter) (HLFM model)

Necanicum

Relative Adult Abundance

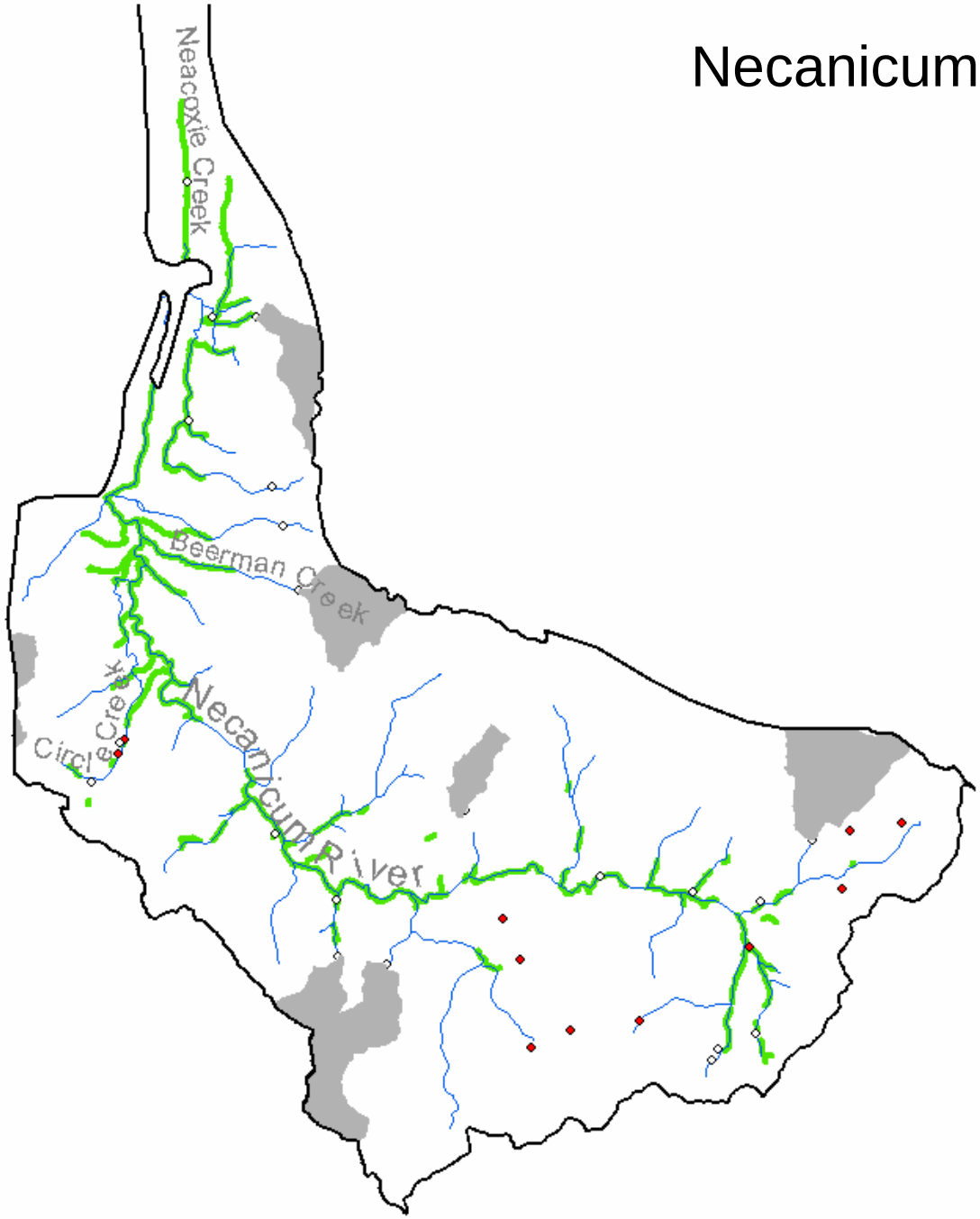
- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile



Necanicum

Fish Passage Barriers

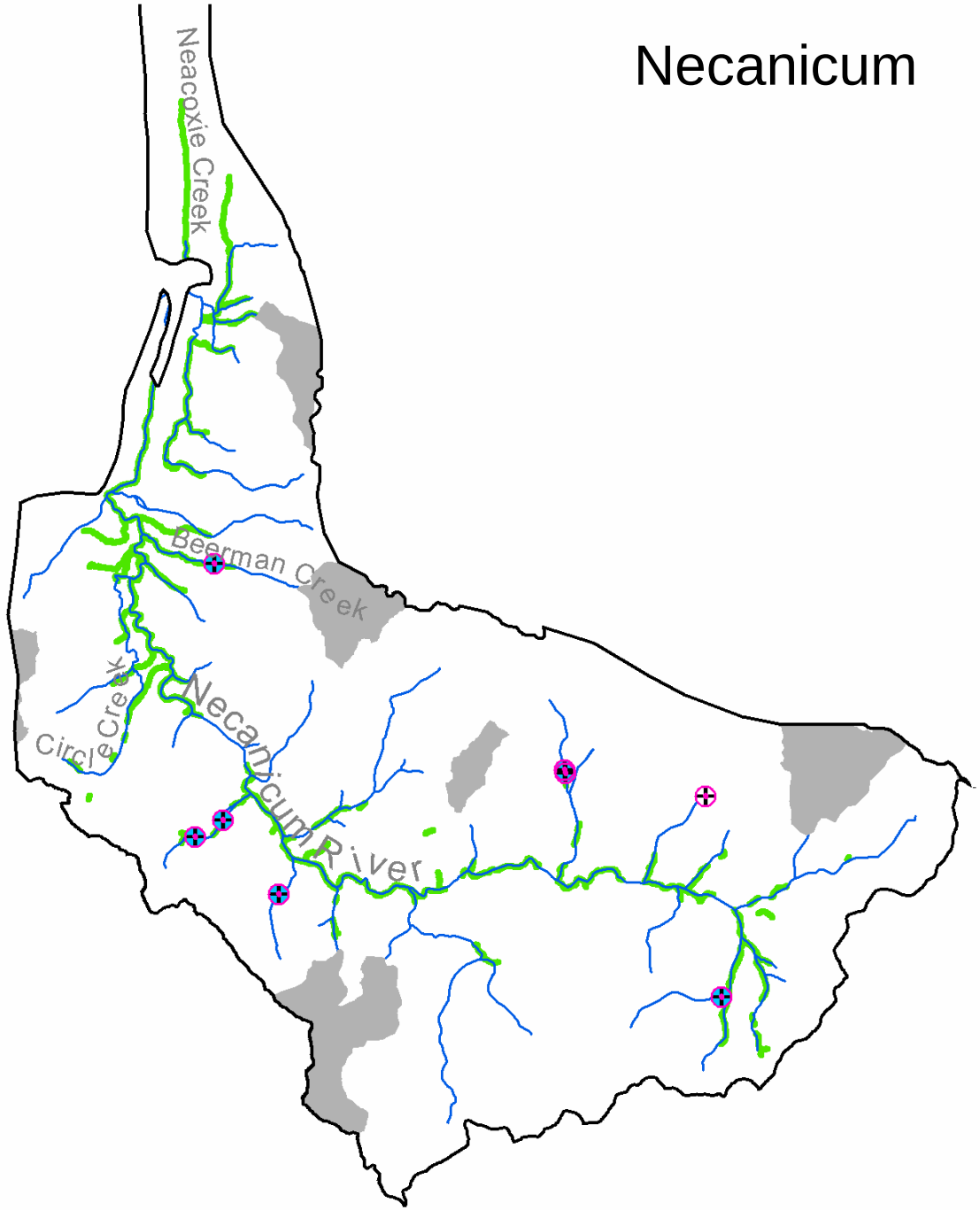
- No Fish Passage
- Unknown Fish Passage



Necanicum

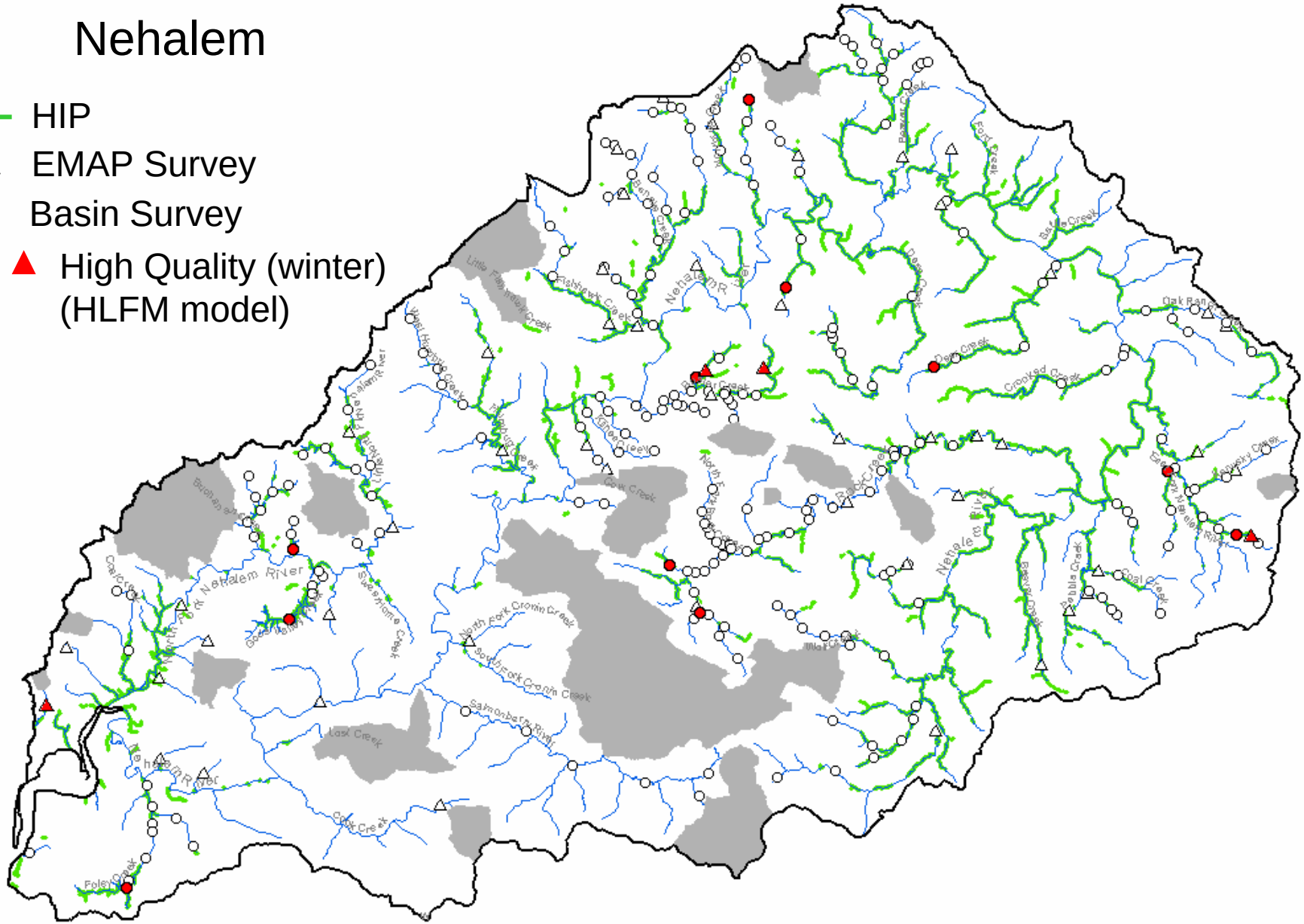
Instream Restoration Projects: Categorized by Factor For Decline

- Channel Morphology
- Instream Roughness
- Lack of Spawning Gravel
- Excessive Fine Sediment



Nehalem

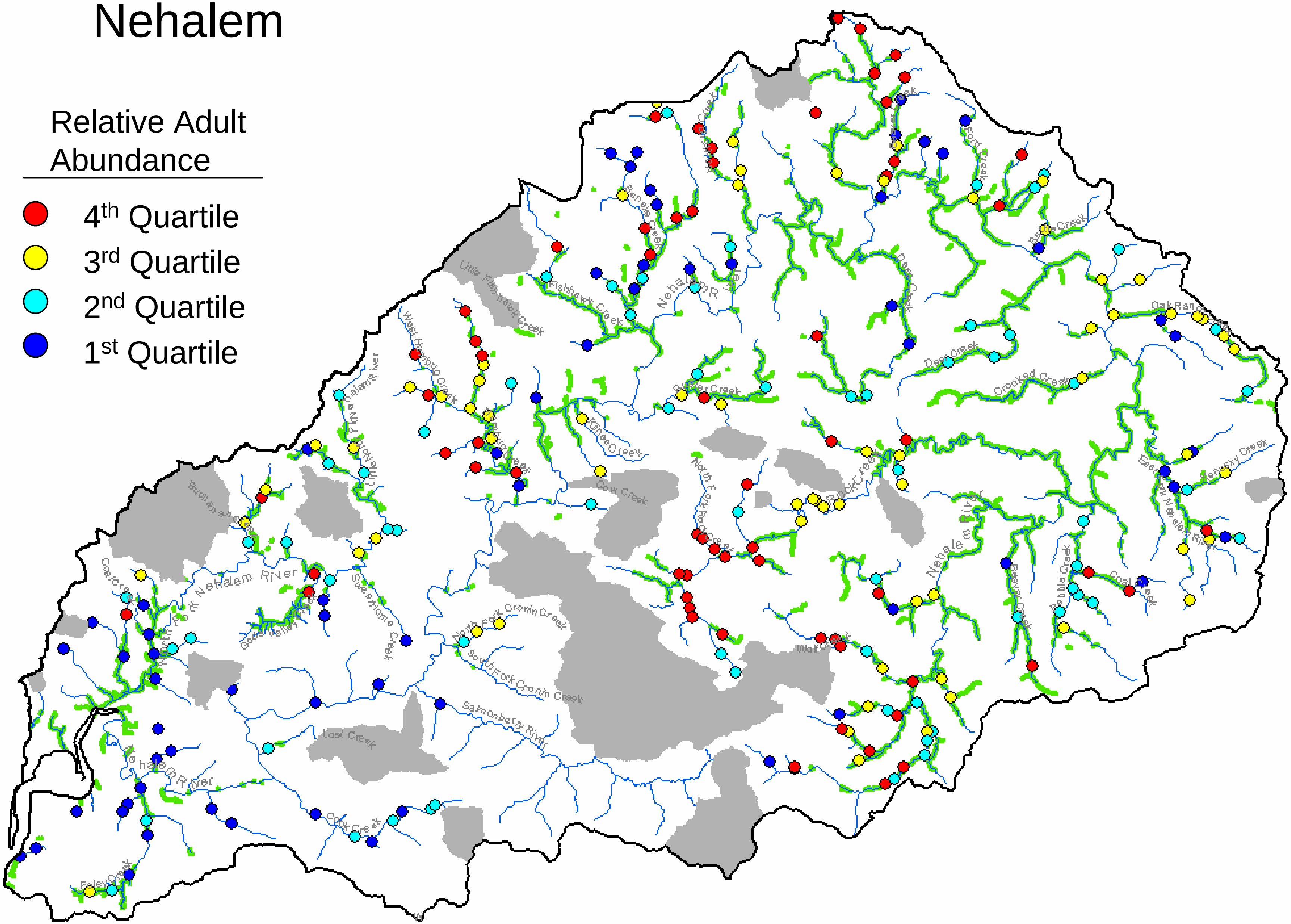
- HIP
- △ EMAP Survey
- ○ Basin Survey
- ● ▲ High Quality (winter) (HLFM model)



Nehalem

Relative Adult Abundance

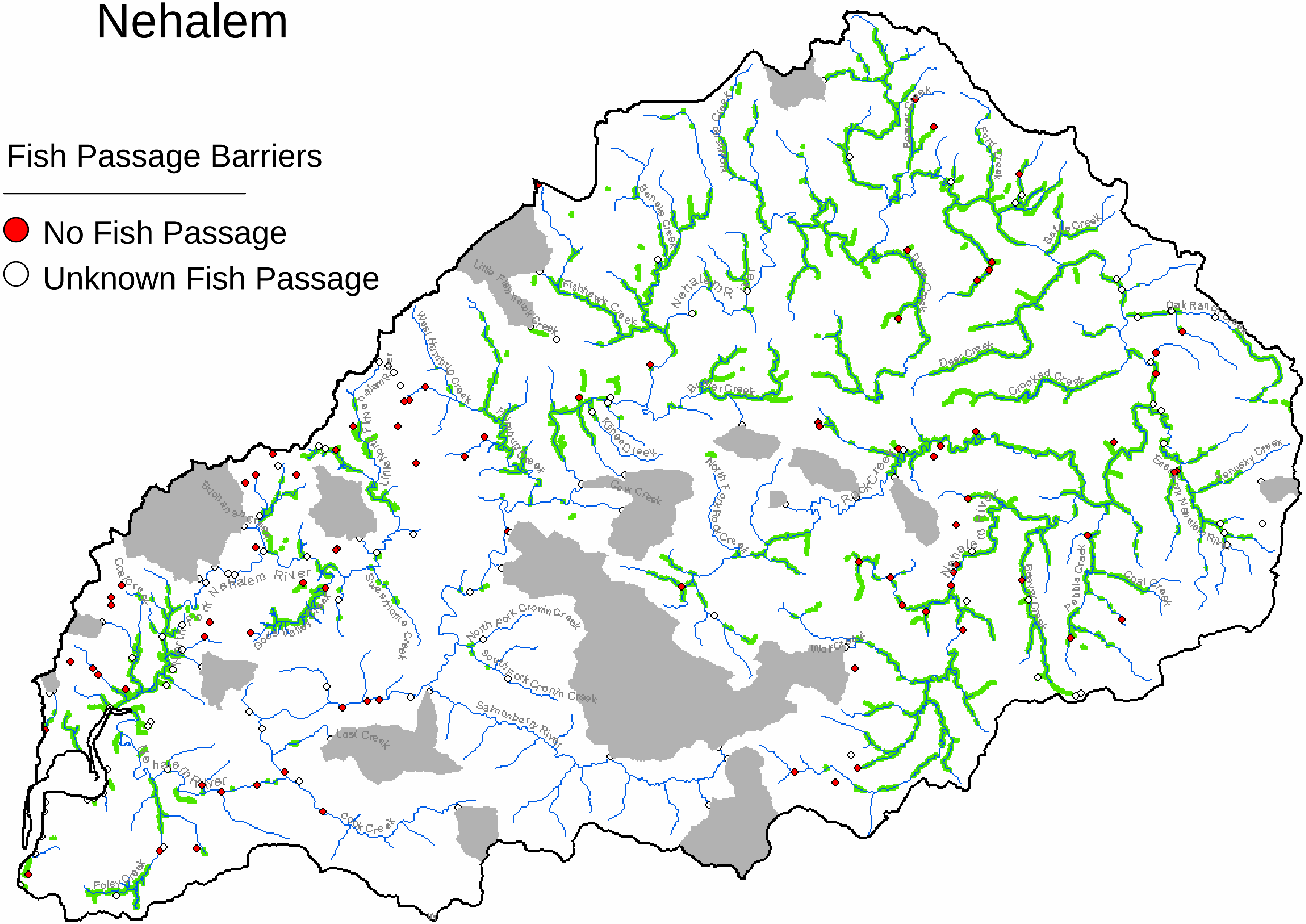
- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile



Nehalem

Fish Passage Barriers

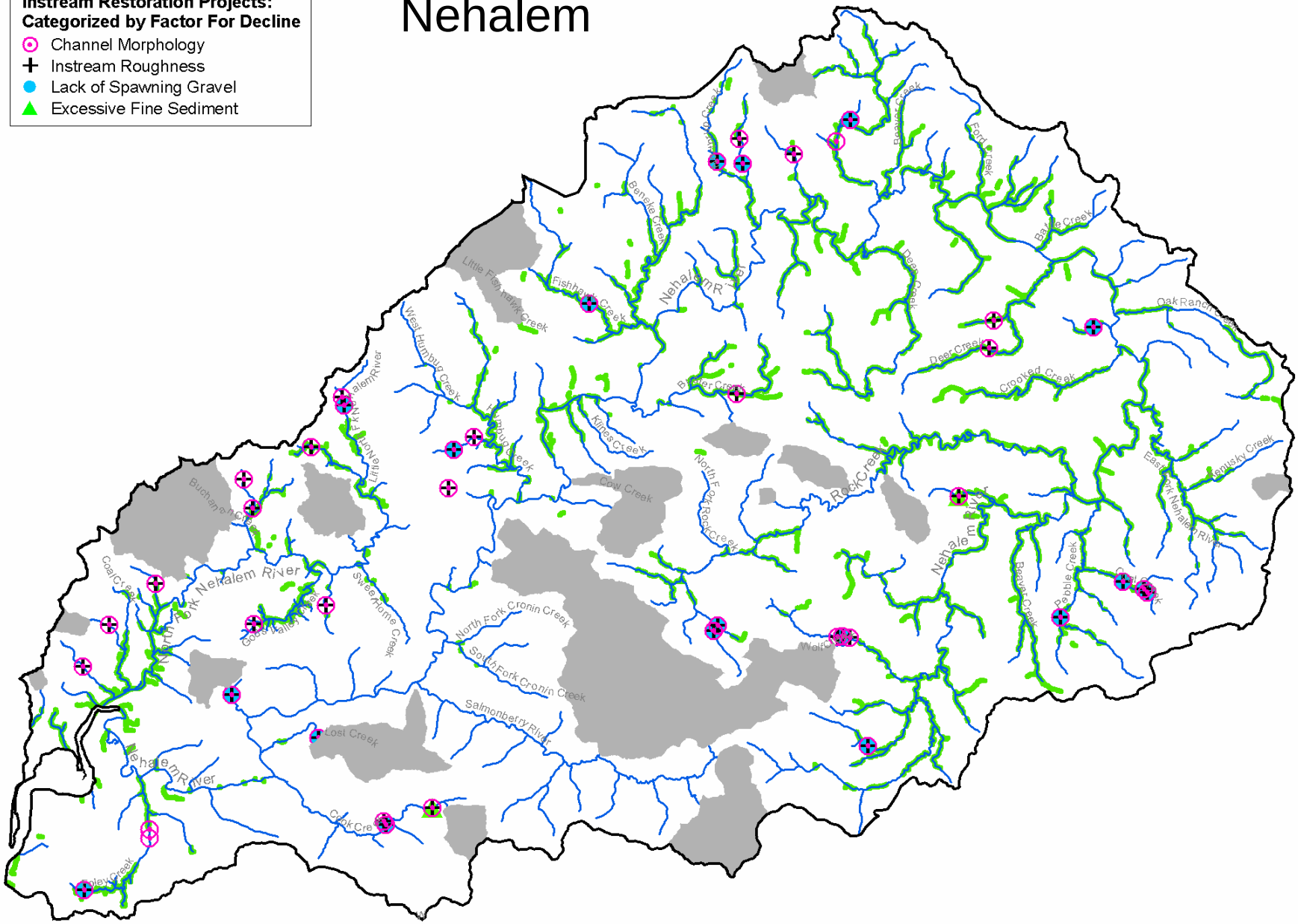
- No Fish Passage
- Unknown Fish Passage

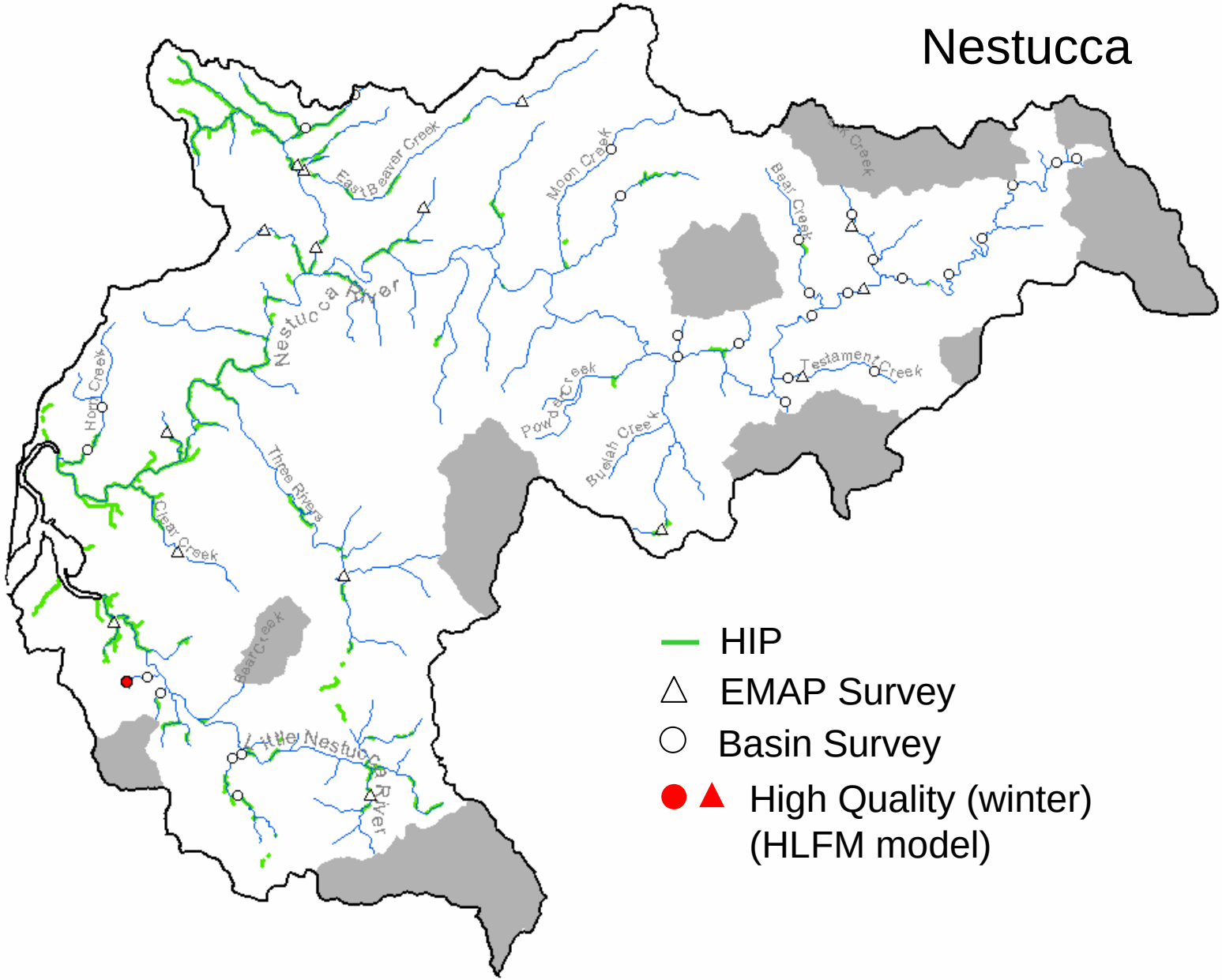


Nehalem

Instream Restoration Projects: Categorized by Factor For Decline

- Channel Morphology
- Instream Roughness
- Lack of Spawning Gravel
- Excessive Fine Sediment

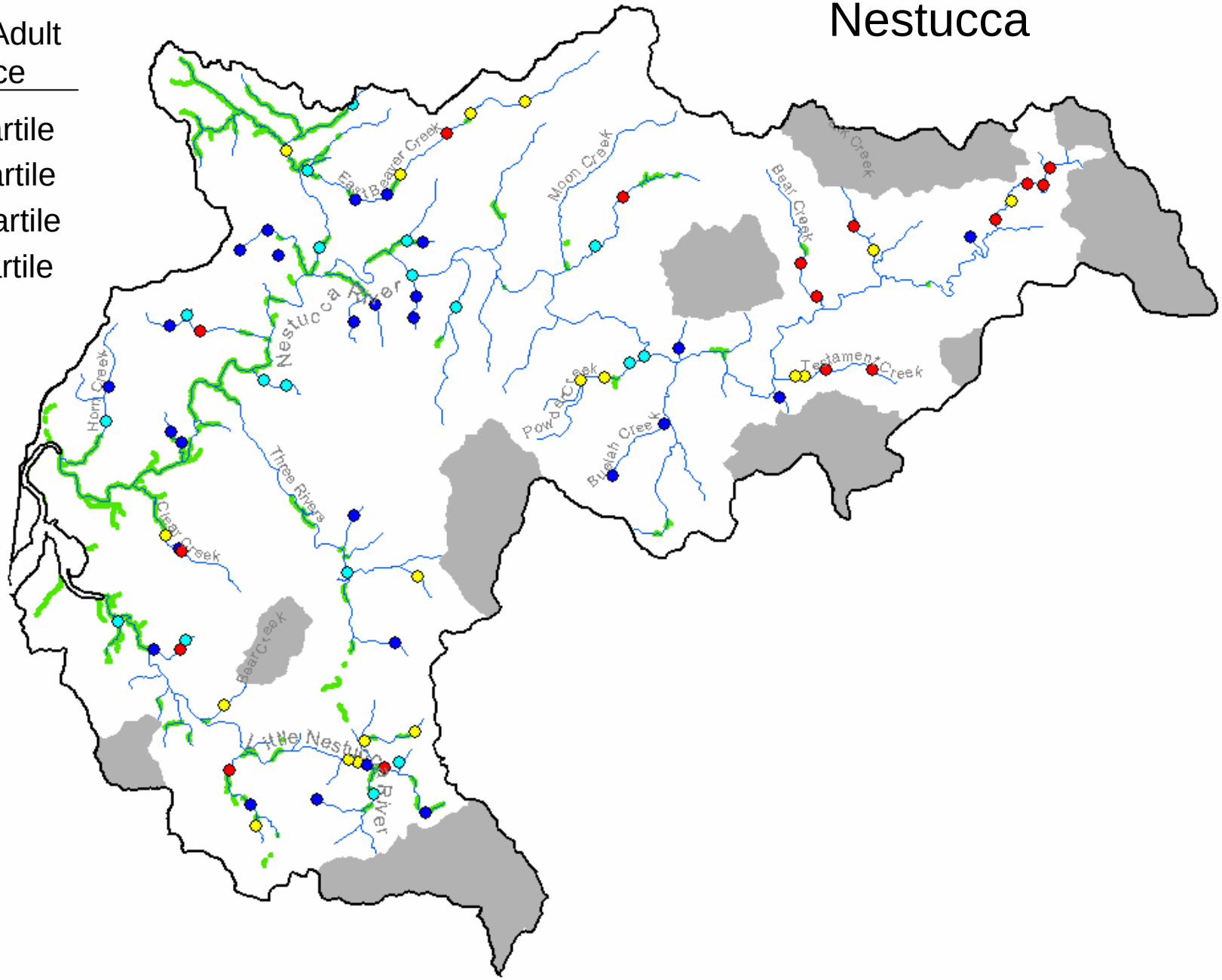



Nestucca
East Beaver Creek
Moon Creek
Bear Creek
Nestucca River
Horn Creek
Three Rivers
Clear Creek
Powder Creek
Buelah Creek
Testament Creek
Bear Creek
Little Nestucca River
HIP
EMAP Survey
Basin Survey
High Quality (winter)
(HLFM model)

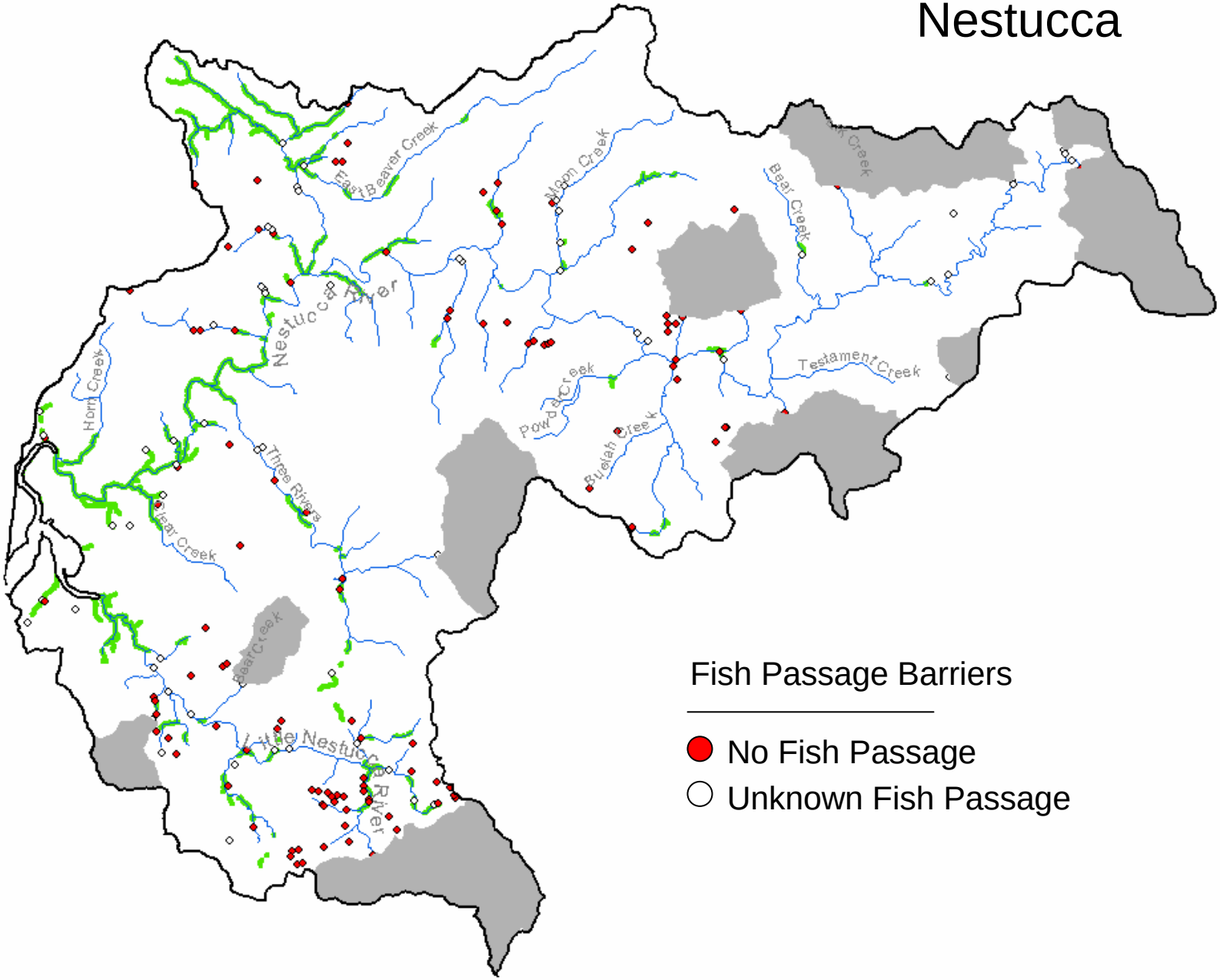
Nestucca

Relative Adult Abundance

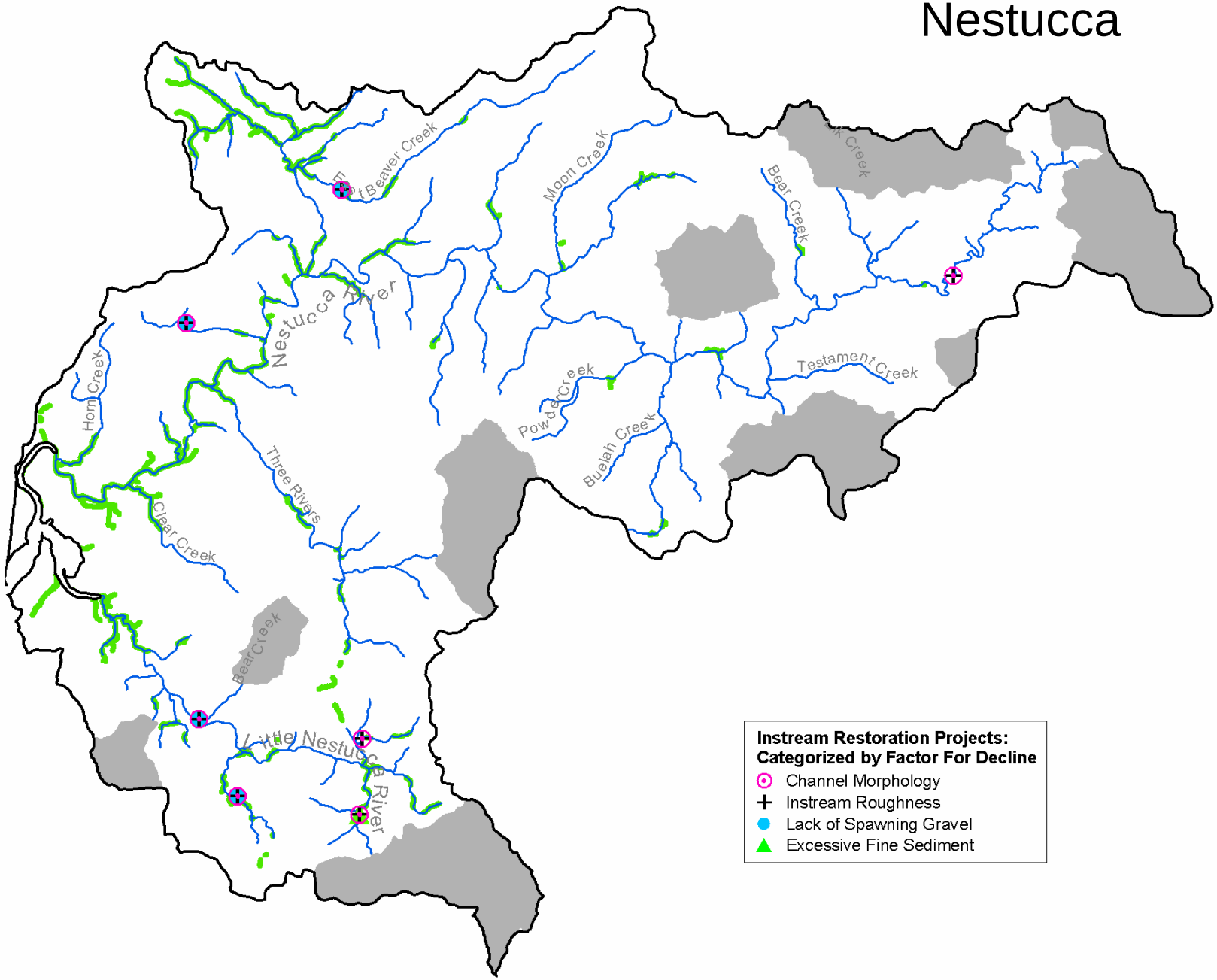
- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile



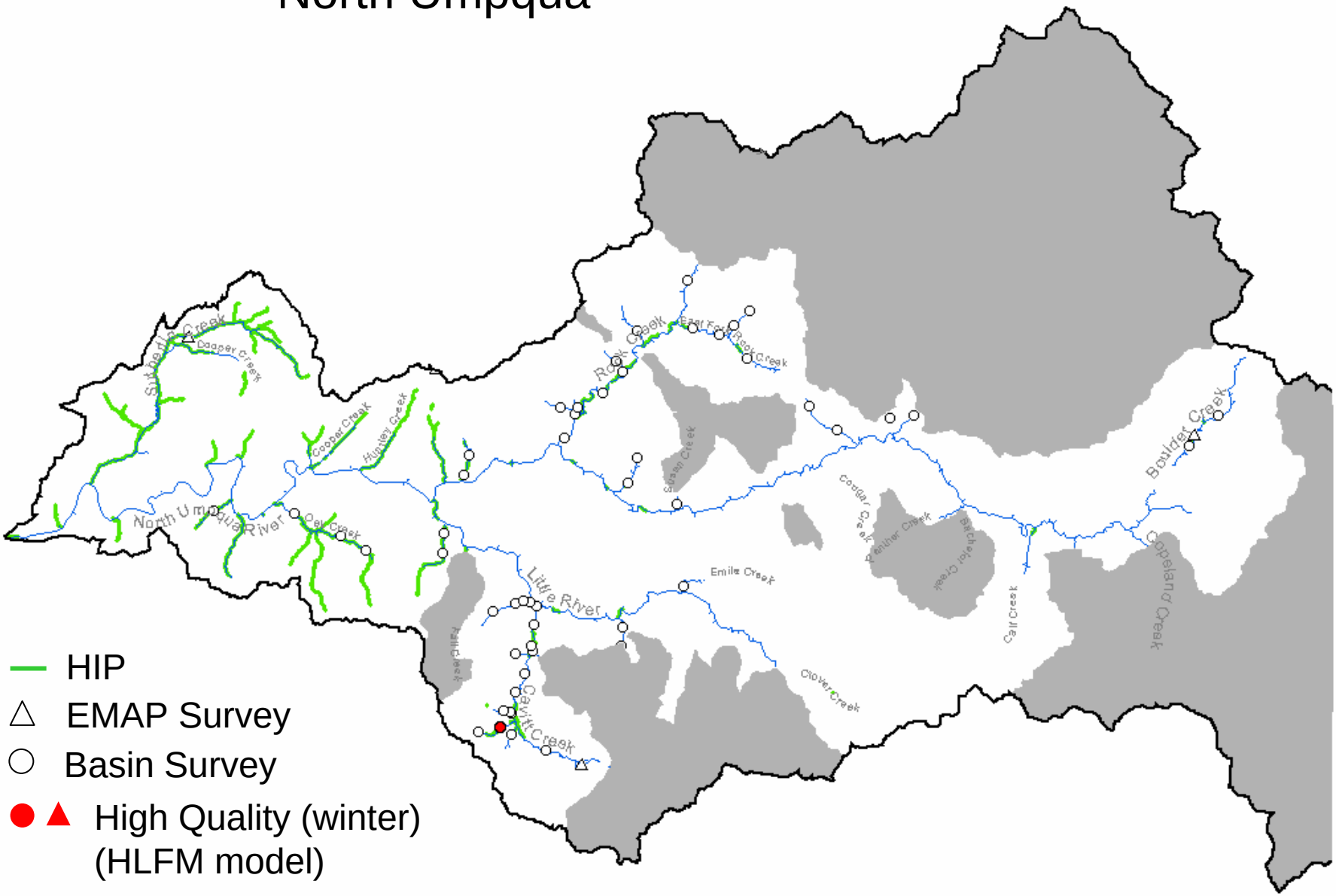
Nestucca


East Beaver Creek
Moon Creek
Bear Creek
Nestucca River
Horn Creek
Three Rivers
Bear Creek
Powder Creek
Beulah Creek
Testament Creek
Bear Creek
Little Nestucca River
Fish Passage Barriers
No Fish Passage
Unknown Fish Passage

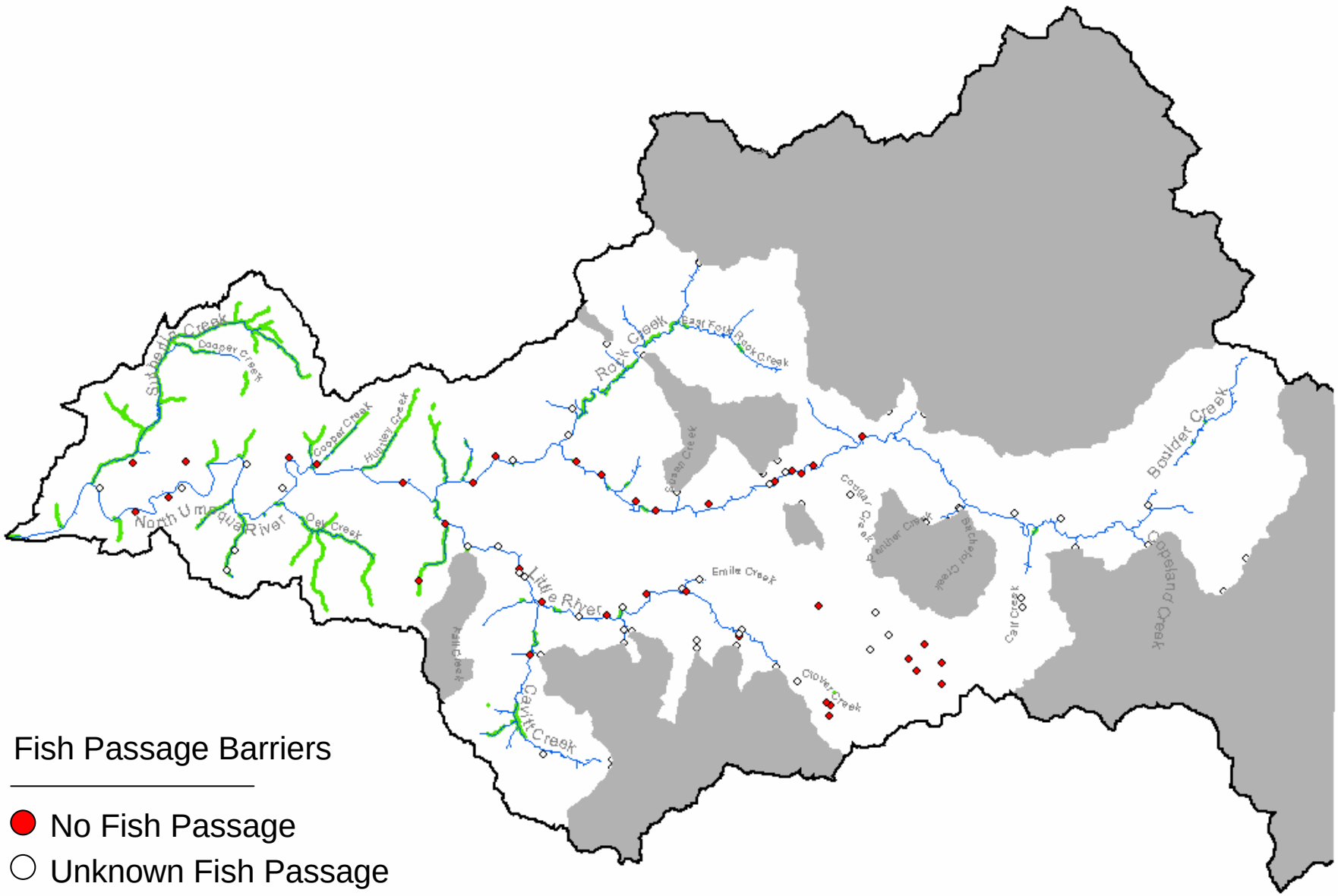
Nestucca


East Beaver Creek
Moon Creek
Bear Creek
Nestucca River
Horn Creek
Powder Creek
Testament Creek
Buelah Creek
Three Rivers
Clear Creek
Bear Creek
Little Nestucca River
Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment

North Umpqua



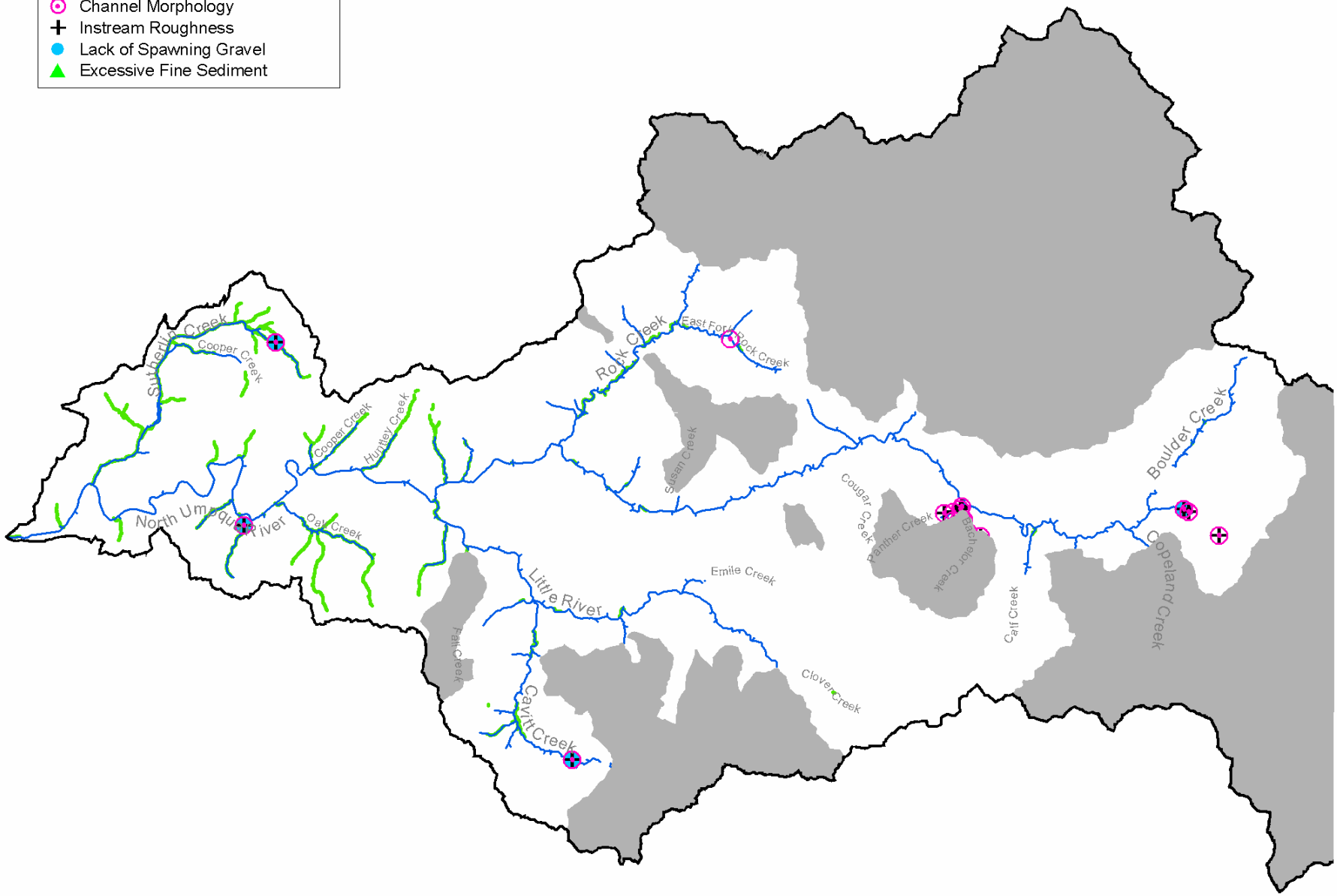
North Umpqua



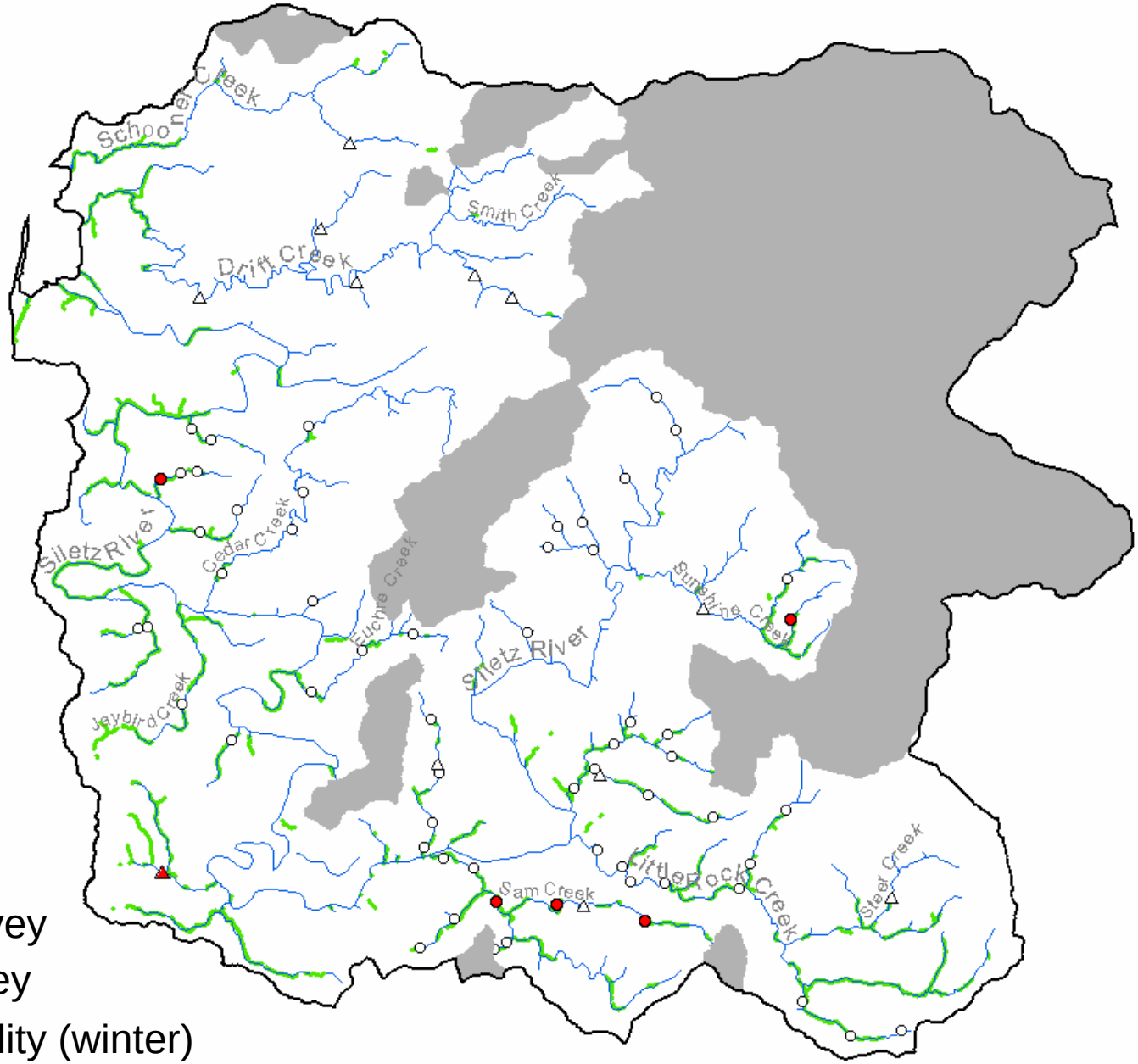
Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage

North Umpqua



Siletz



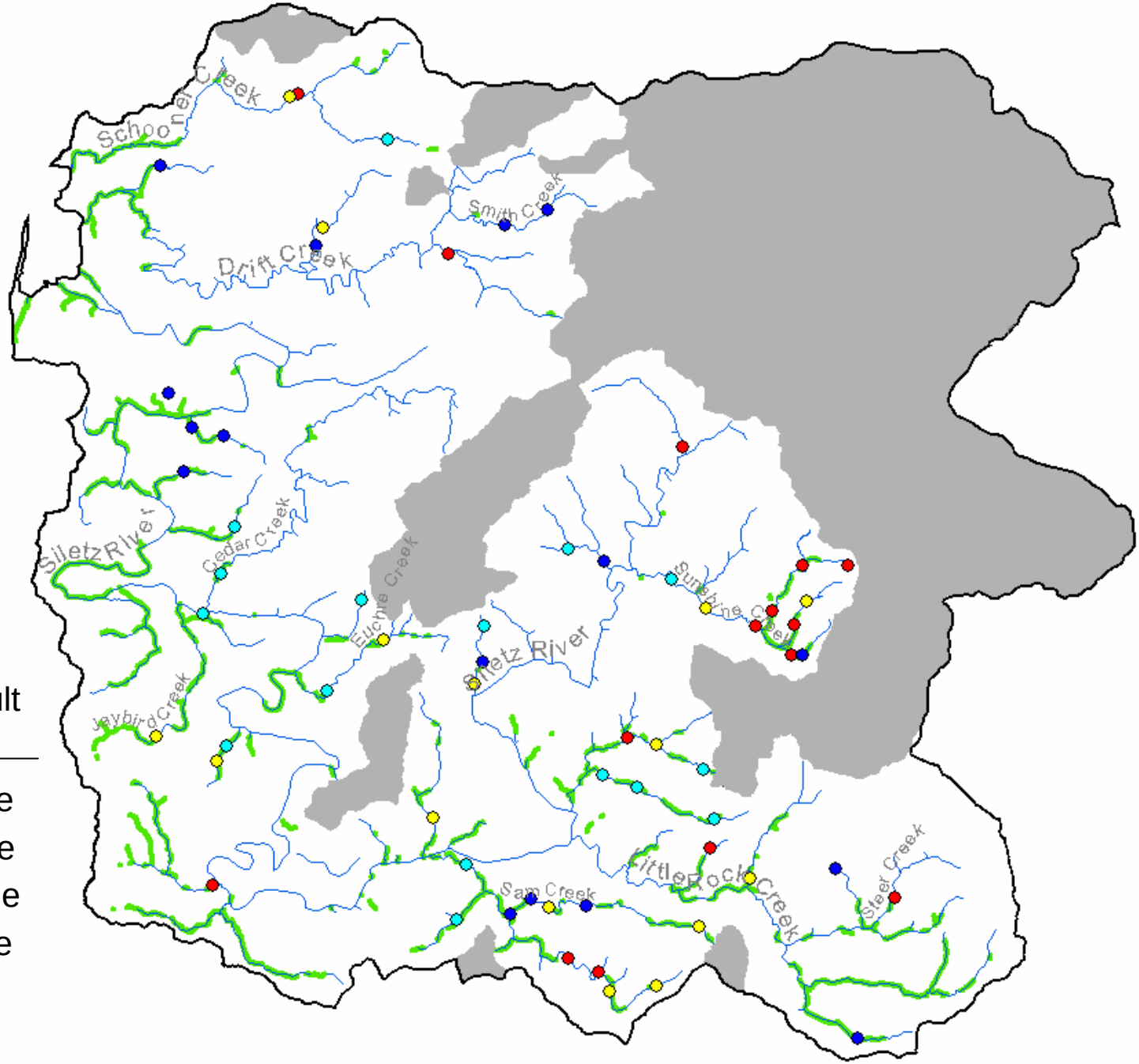
— HIP

△ EMAP Survey

○ Basin Survey

● ▲ High Quality (winter) (HLFM model)

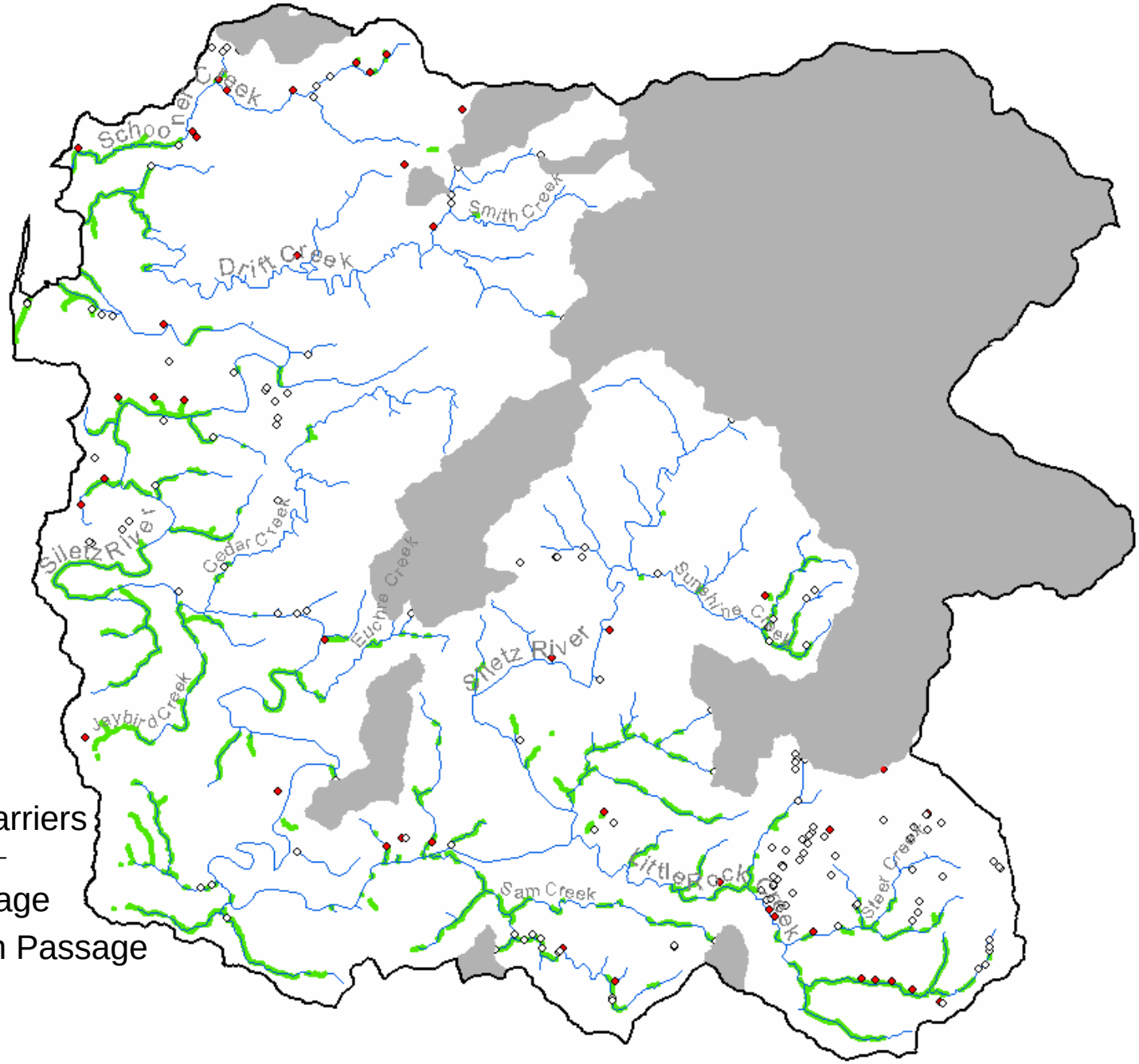
Siletz



Relative Adult Abundance

- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile

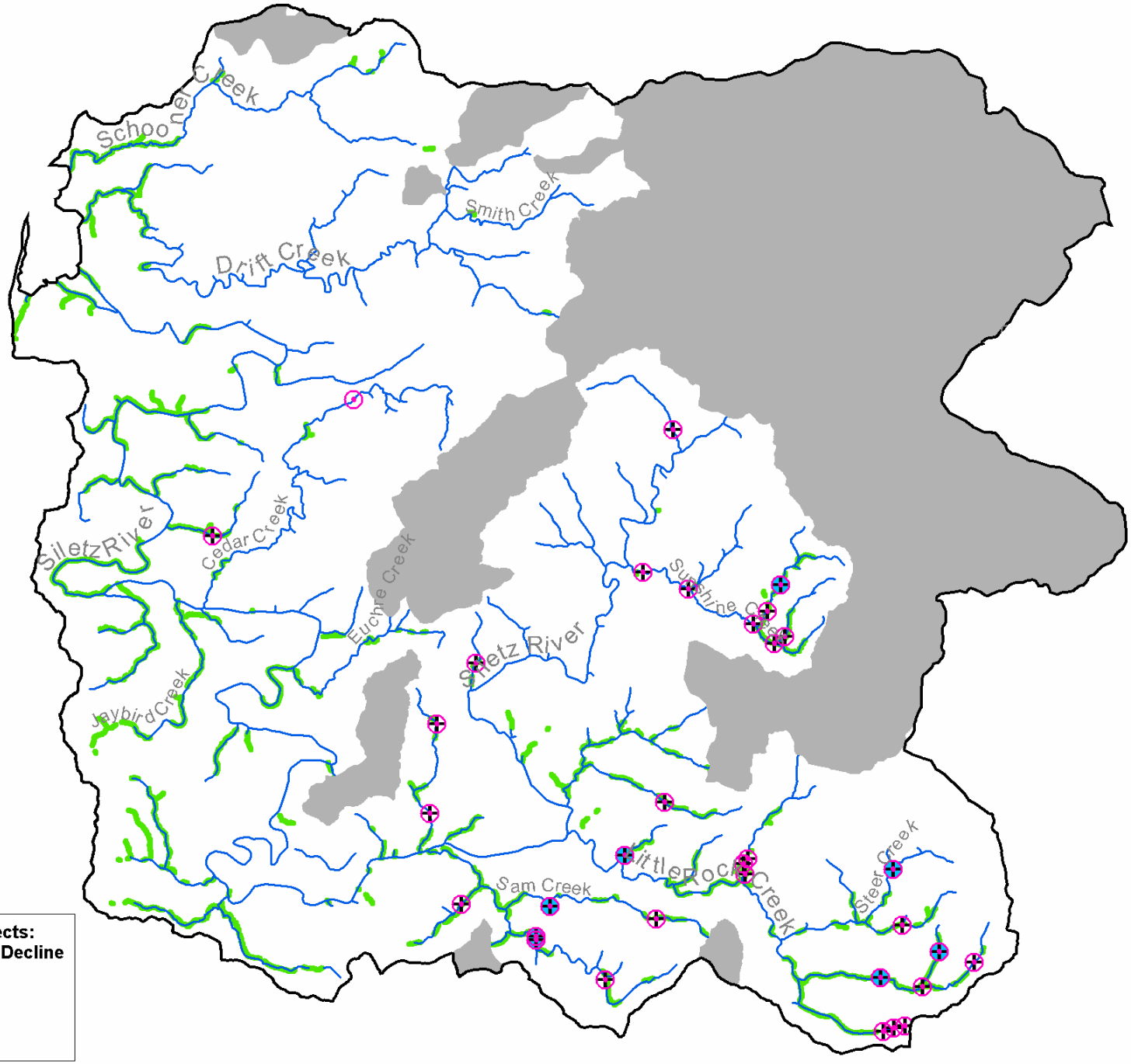
Siletz



Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage

Siletz


Schooner Creek
Drift Creek
Smith Creek
Siletz River
Cedar Creek
Euchre Creek
Siletz River
Sunshine Creek
Jaybird Creek
Sam Creek
Little Rock Creek
Steer Creek
Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment

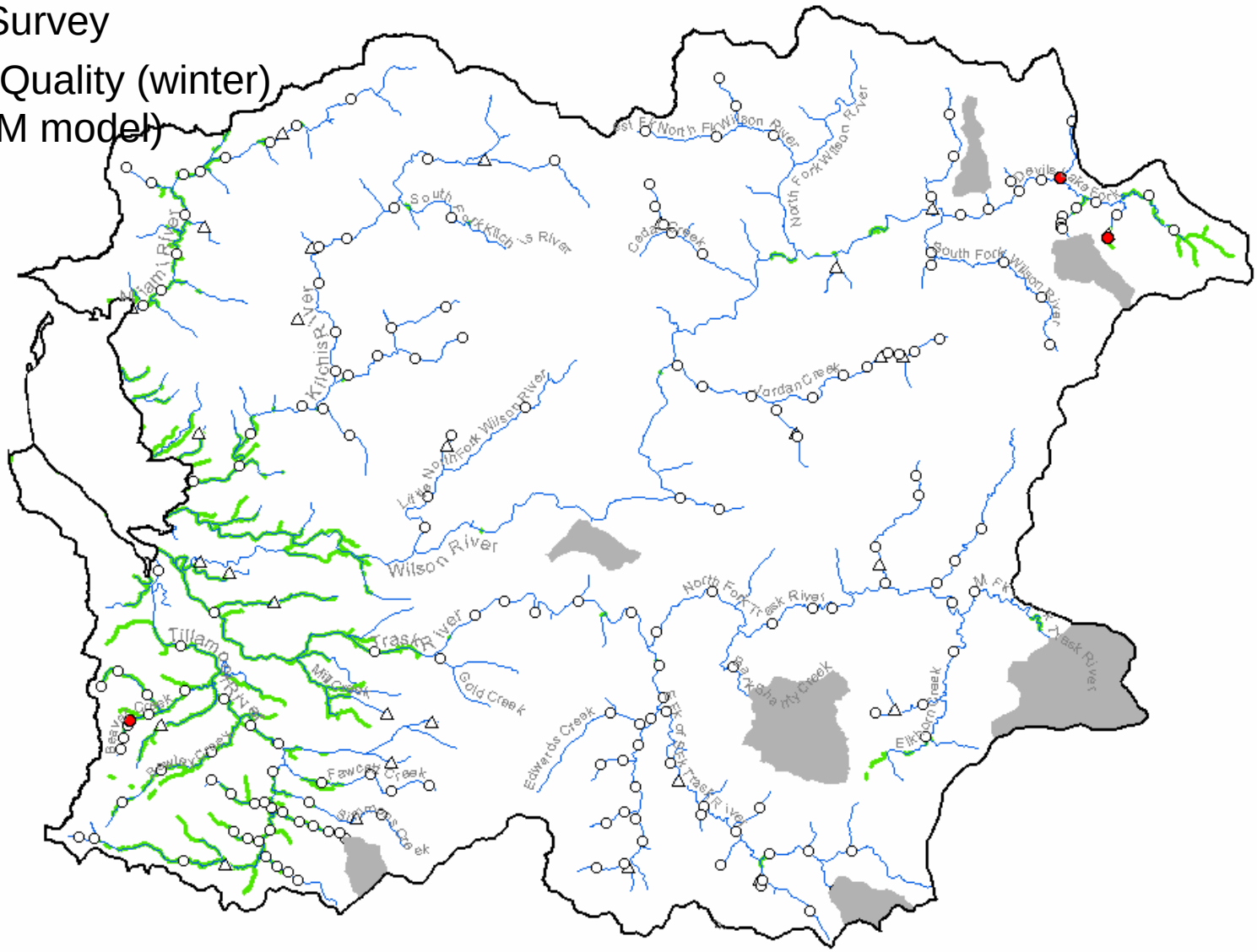
Tillamook

— HIP

△ EMAP Survey

○ Basin Survey

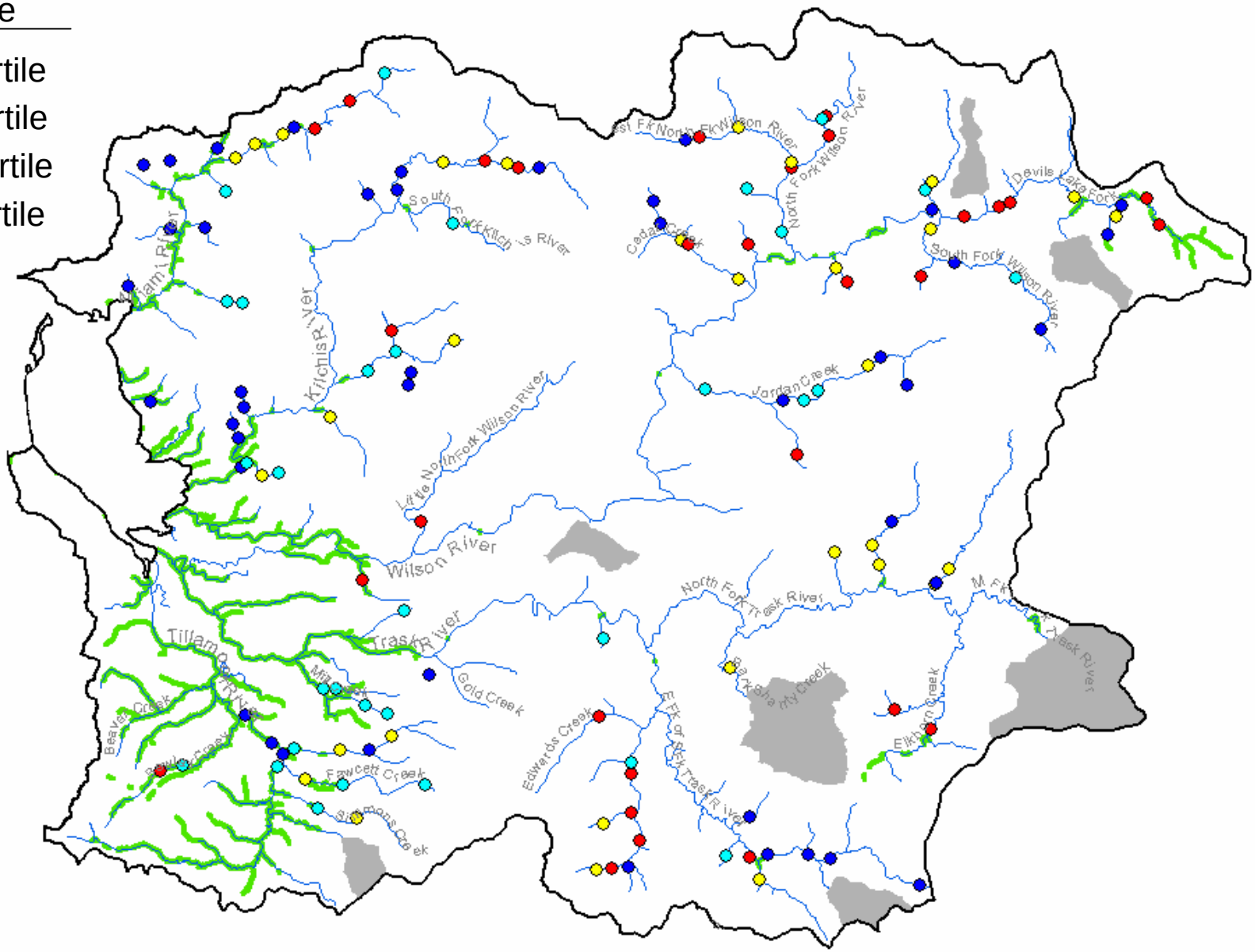
● ▲ High Quality (winter) (HLFM model)



Tillamook

Relative Adult Abundance

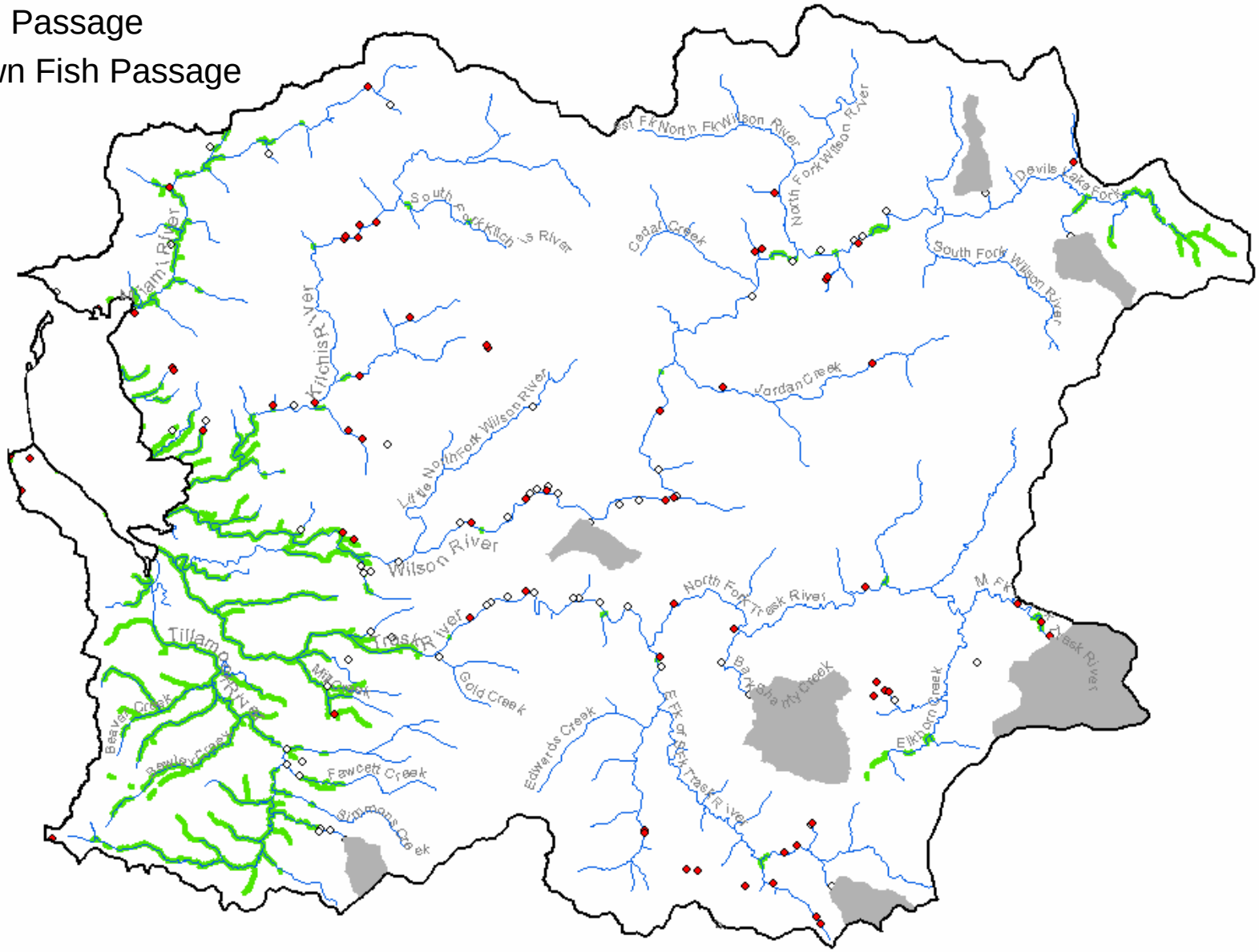
- 4th Quartile
- 3rd Quartile
- 2nd Quartile
- 1st Quartile



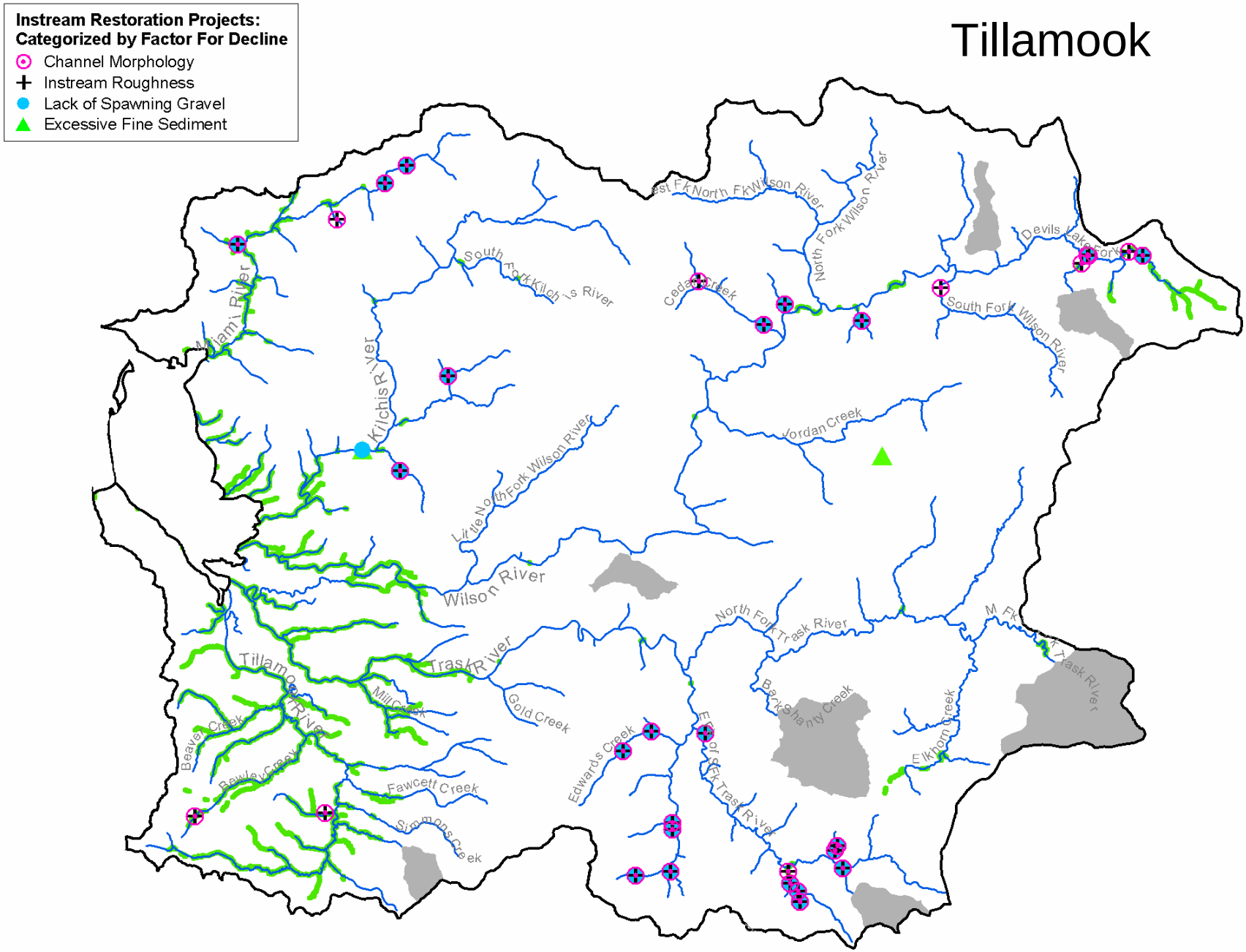
Fish Passage Barriers

- No Fish Passage
- Unknown Fish Passage

Tillamook



Tillamook


Instream Restoration Projects:
Categorized by Factor For Decline
Channel Morphology
Instream Roughness
Lack of Spawning Gravel
Excessive Fine Sediment
Miami River
Kilchis River
South Fork Kilchis River
West Fk North Fk Wilson River
North Fork Wilson River
Cedar Creek
Devils Lake Fork
South Fork Wilson River
Jordan Creek
Little North Fork Wilson River
Wilson River
Tillamook River
Trask River
Mill Creek
Gold Creek
Beaver Creek
Rowlee Creek
Fawcett Creek
Simmons Creek
North Fork Trask River
Edwards Creek
East Fk Trask River
Bark Shanty Creek
Elkhorn Creek
M Fk Trask River