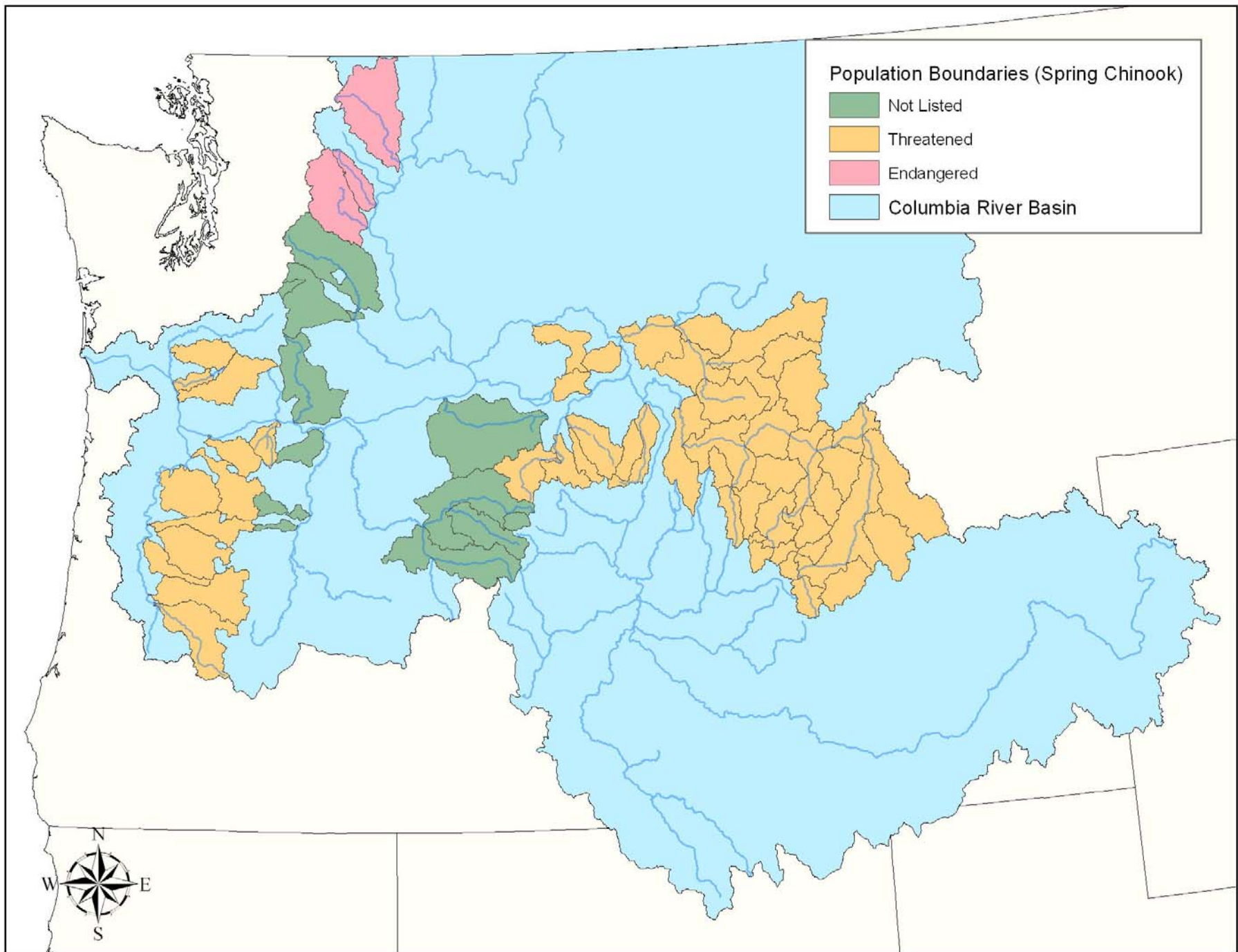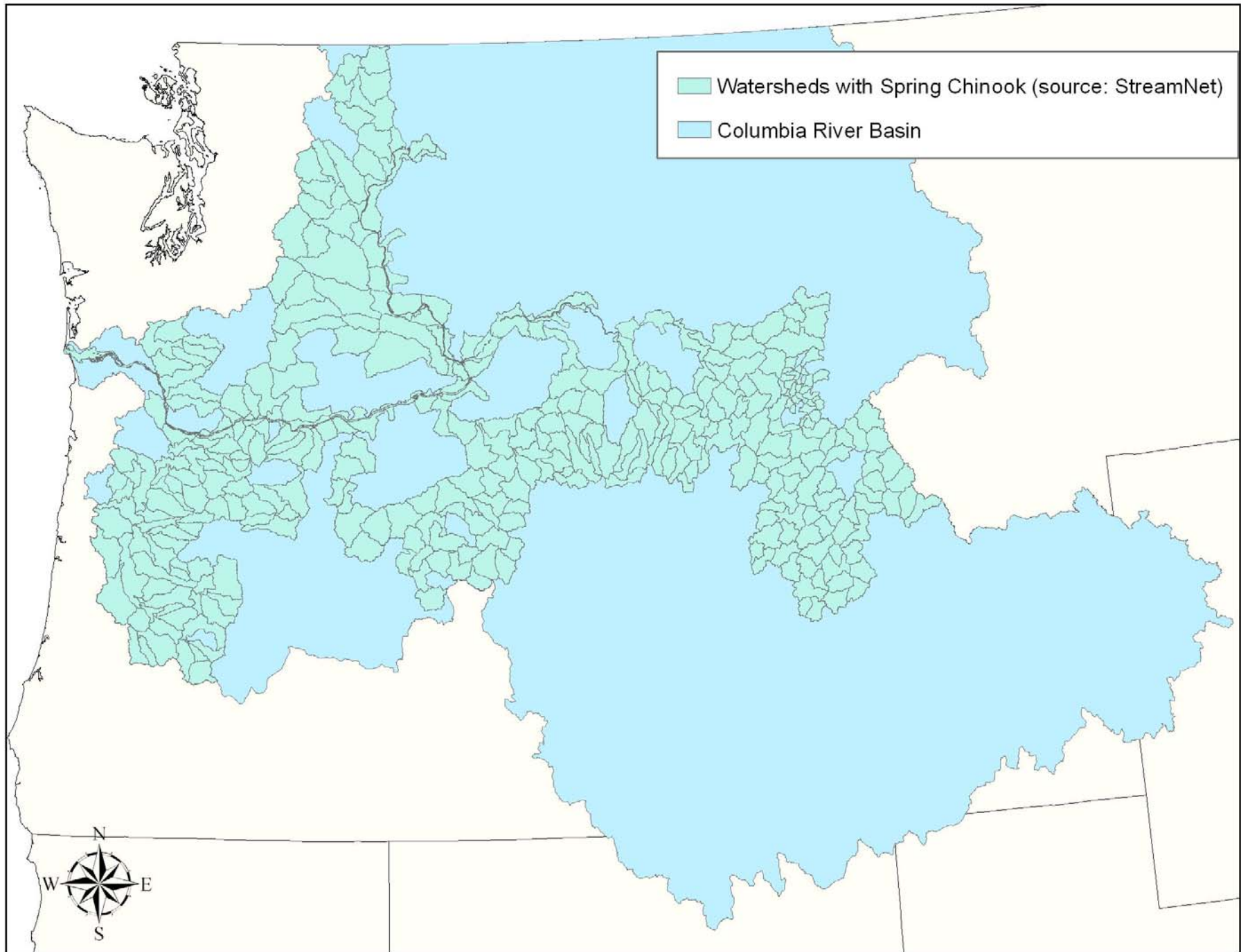# Linking Salmon Restoration Processes

Biological Basis of Management
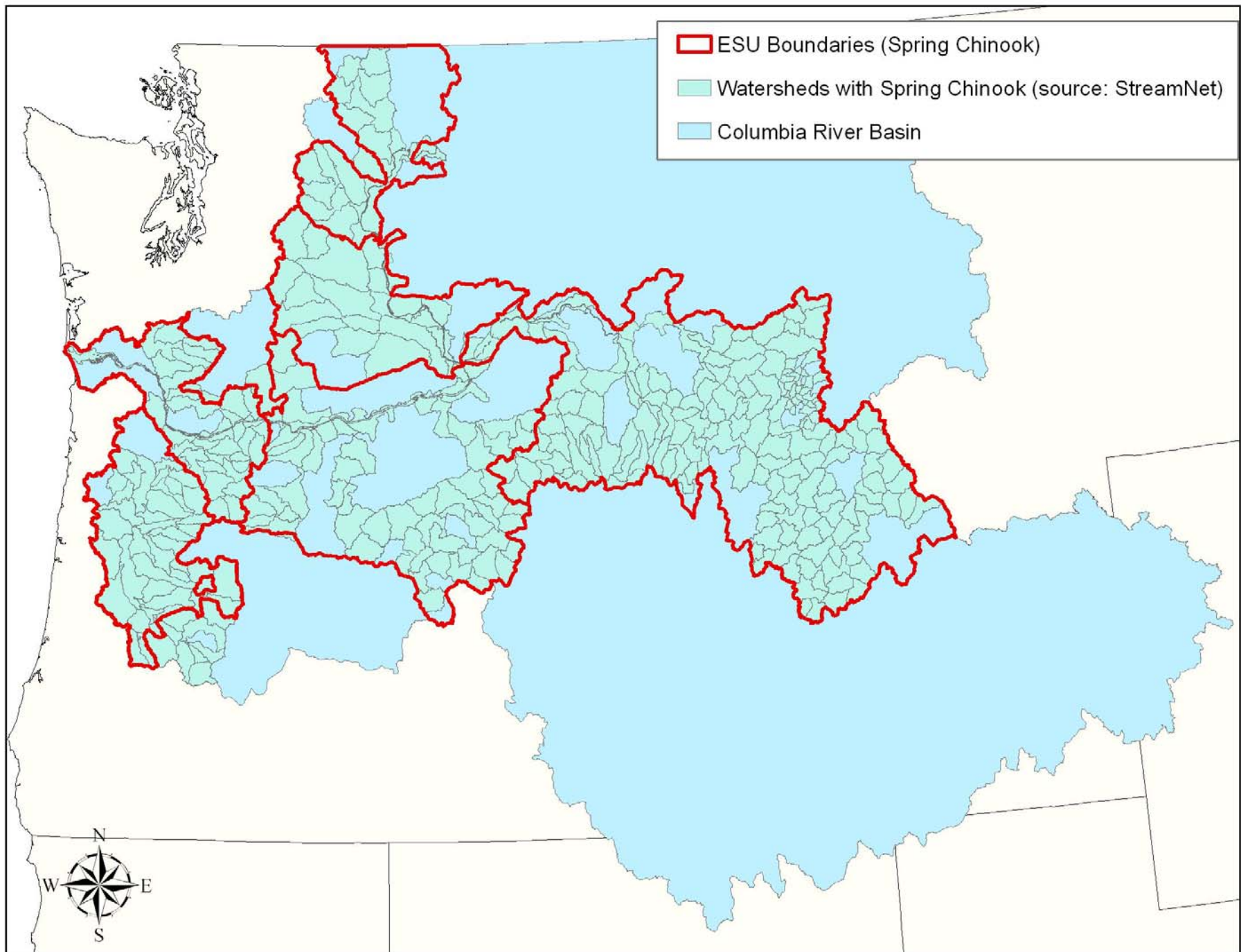
- Salmon Populations
- Watersheds

Population Boundaries (Spring Chinook)
- Not Listed
- Threatened
- Endangered
- Columbia River Basin

Watersheds with Spring Chinook (source: StreamNet)

Columbia River Basin

Populations Are Aggregated for Various Management Needs
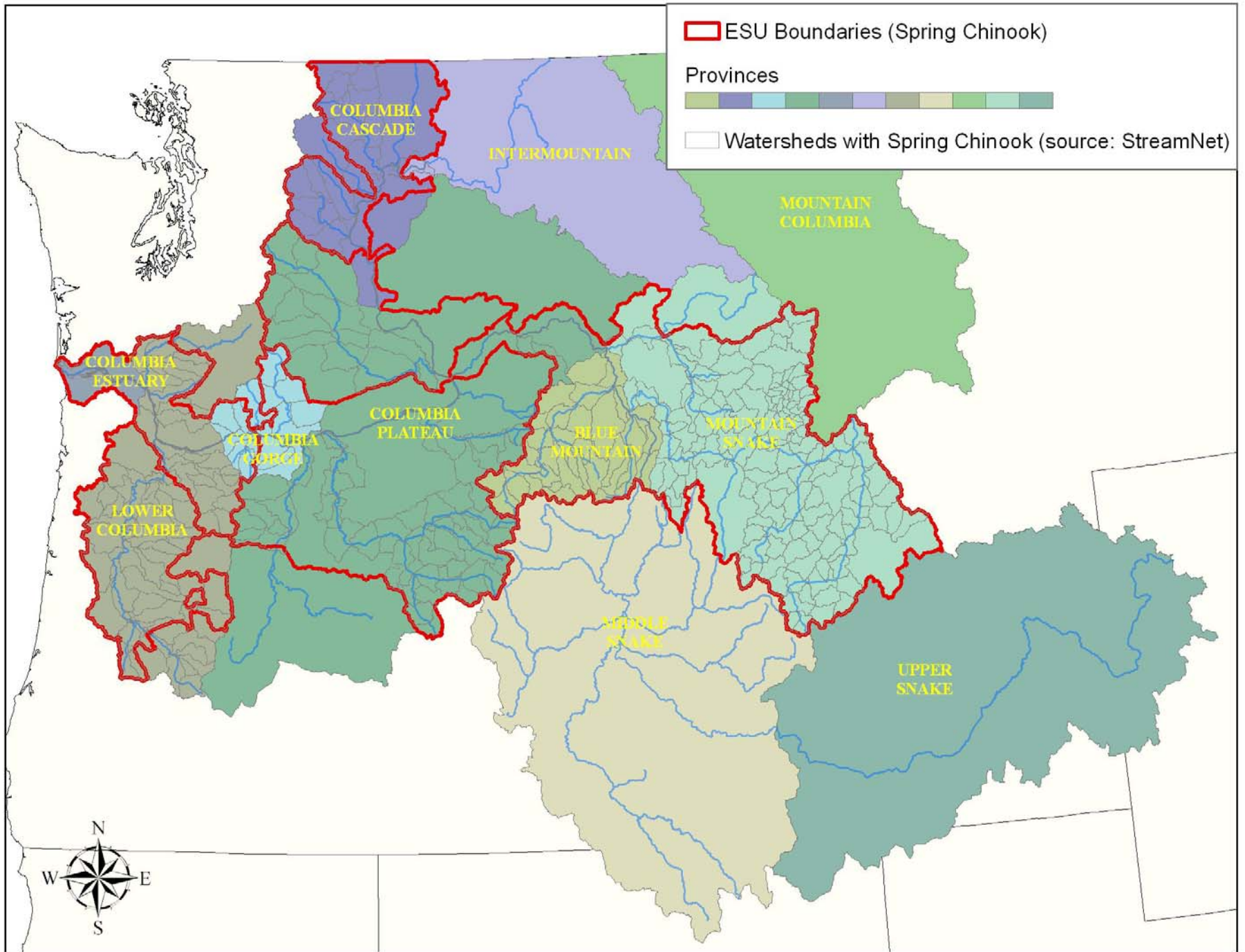
Legend:
- ESU Boundaries (Spring Chinook)
- Watersheds with Spring Chinook (source: StreamNet)
- Columbia River Basin

Management Areas (DRAFT)

- USvOR Spring Chinook Mgmt Area
- PSC Spring Chinook Mgmt Area
- Columbia River Basin
- ⬤ BonnevilleDam
- Watersheds with Spring Chinook (source: StreamNet)

# Finer-Scale Assessments Were Used for Subbasin Plans
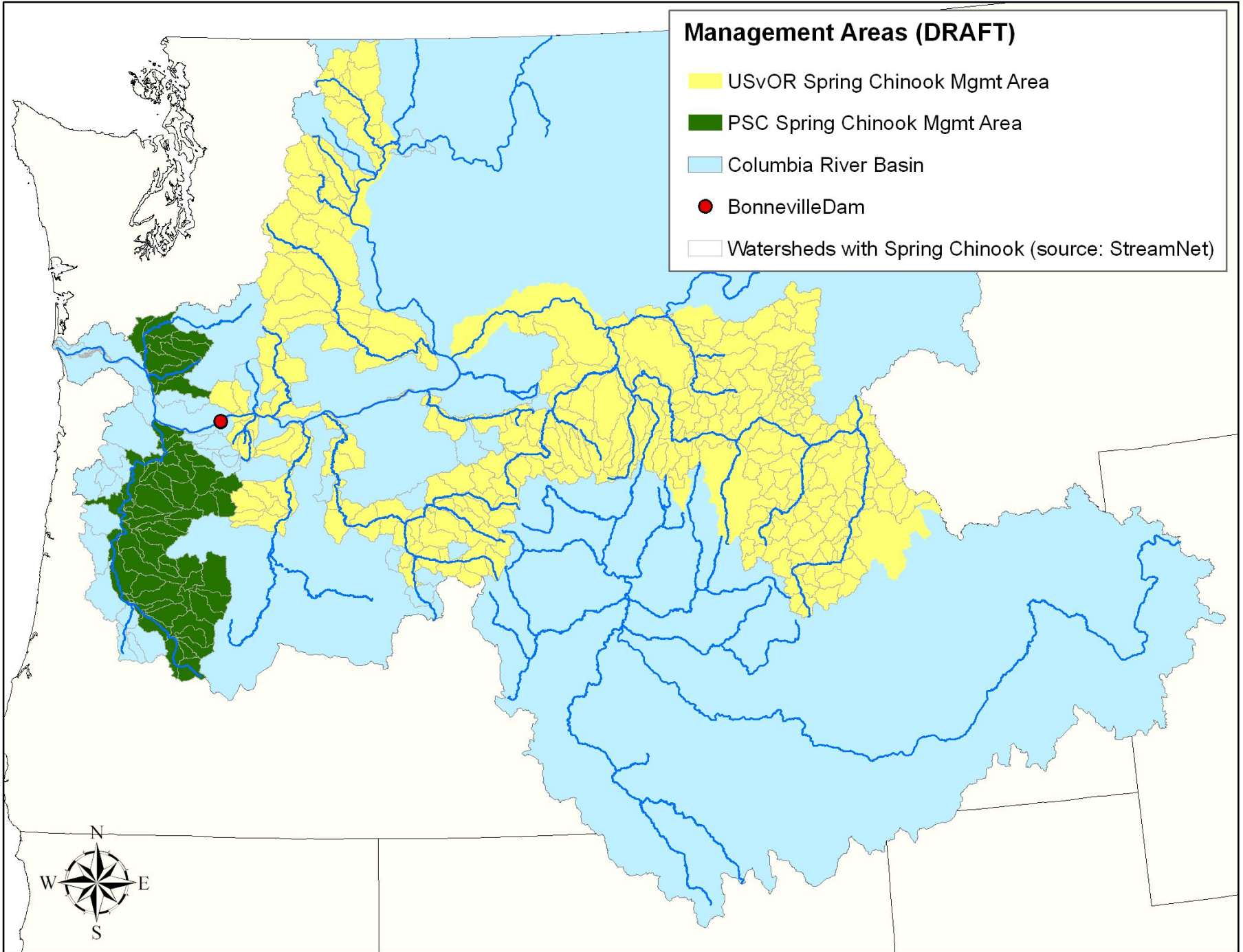
Management Areas (DRAFT)

- USvOR Spring Chinook Mgmt Area
- PSC Spring Chinook Mgmt Area
- Columbia River Basin
- ● BonnevilleDam
- Watersheds with Spring Chinook (source: StreamNet)

Deschutes Subbasin

N
W E
S

Lower Deschutes

- Conservation
- Restoration
- Restoration and Conservation
- None

White River

Deschutes R

Buck Hollow

Bakeoven Creek

Lower Westside Deschutes

Warm Springs

River

Trout Creek

Shitike Cr

Pelton Dam Complex

Metolius River

Lower Eastside Deschutes

Middle Deschutes

Deschutes R

Crooked R

Lower Crooked

Upper Crooked

N

50 Miles
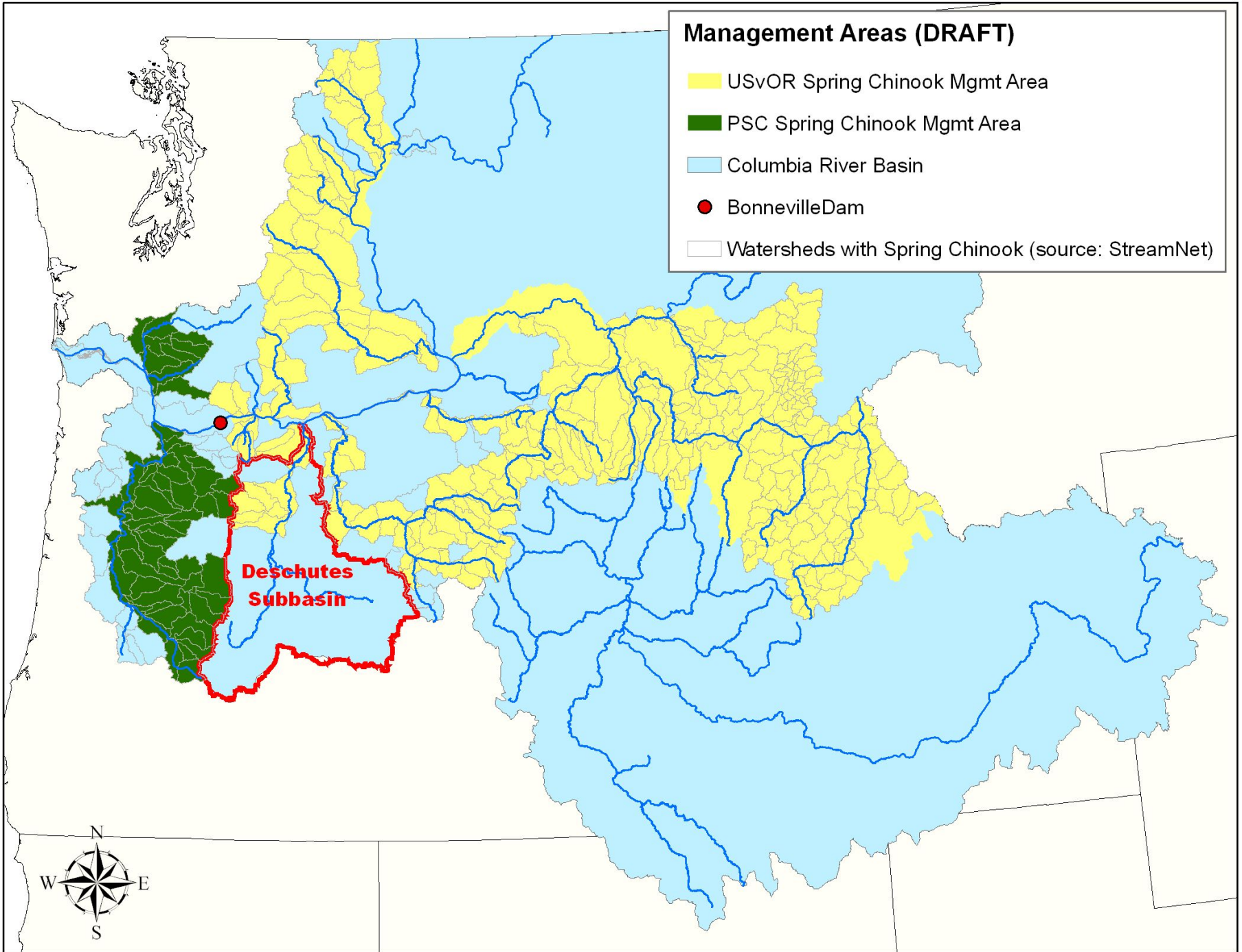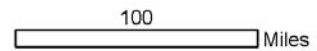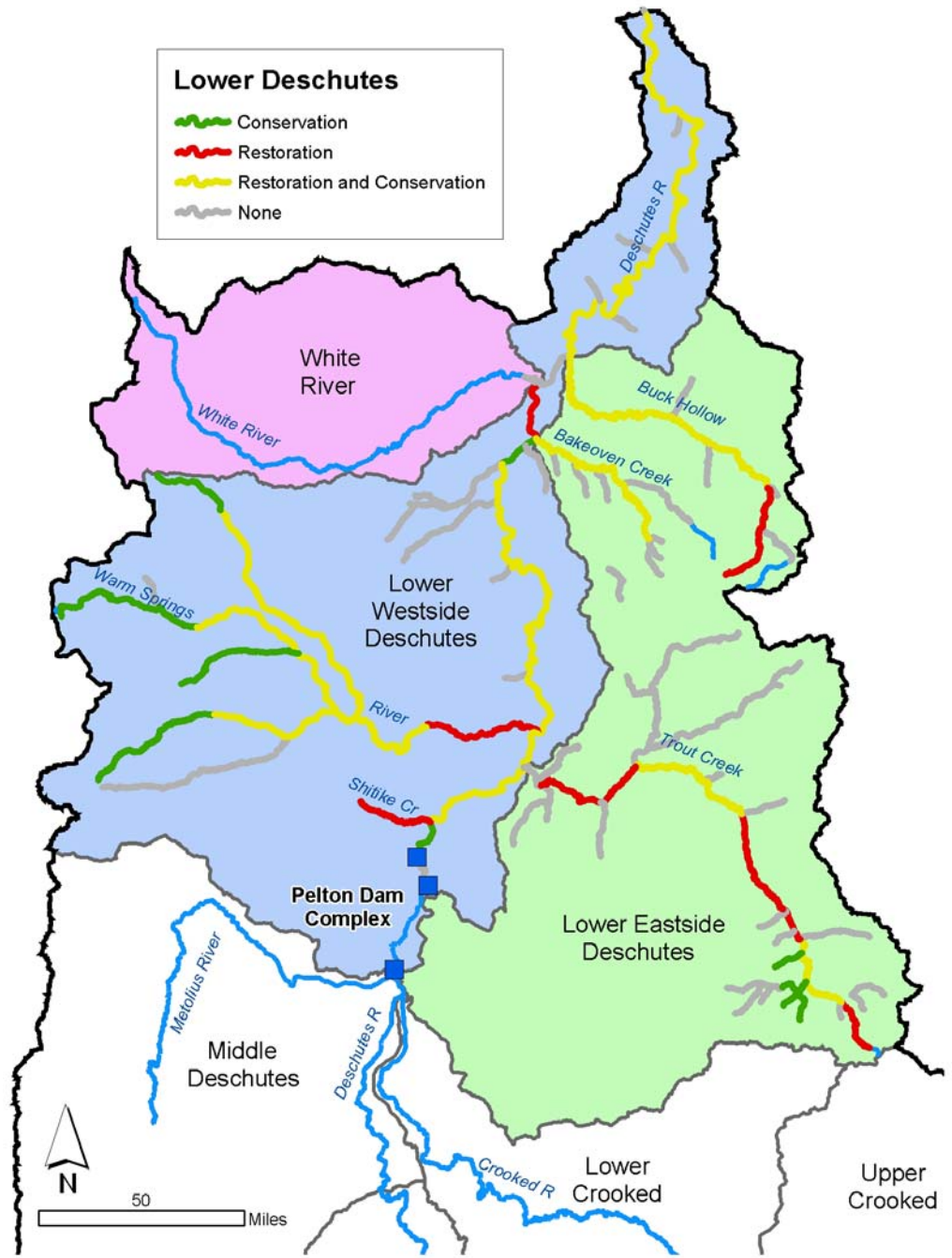
Lower Deschutes

Project Type

- Agricultural/Rangeland Improvement
- Combined
- Fish Passage Improvement
- Instream Flow Restoration
- Instream Habitat Restoration
- Monitoring
- Other
- Riparian
- Road Abandonment/Restoration
- Upland Habitat Restoration
- Wetland Restoration

EDT Priority Reaches

- Conservation
- Restoration
- Restoration and Conservation
- None
- Streams 100K

50 Miles

N

Name	Project Type	Number	%
Lower Deschutes Westside	Agricultural/Rangeland Improvement	24	29.6
	Combined	0	0.0
	Fish Passage Improvement	5	6.2
	Instream Flow Restoration	1	1.2
	Instream Habitat Restoration	5	6.2
	Monitoring	14	17.3
	Other	2	2.5
	Riparian	12	14.8
	Road Abandonment/Restoration	2	2.5
	Upland Habitat Restoration	15	18.5
	Wetland Restoration	1	1.2
	TOTAL	**81**	**100.0**

Name	Organization	# of Projects	%
Lower Deschutes Westside	Bureau of Land Management	20	24.7
	Confederated Tribes of Warm Springs	23	28.4
	Hood National Forest	12	14.8
	OR DEQ	2	2.5
	Oregon Dept. of Transportation	1	1.2
	Portland General Electric	12	14.8
	Sherman Co. SWCD	11	13.6
	TOTAL	**81**	**100.0**

Project Type

- 🟢 Ag / Range Improvement
- ⚫ Combined
- 🟠 Fish Passage Improvement
- 🔵 Instream Flow Restoration
- 🟡 Instream Habitat Rest
- 🔴 Monitoring
- 🟣 Other
- 🟪 Riparian
- 🔵 Road Abandonment/Rest
- 🟢 Upland Habitat Restoration
- 🩷 Wetland Restoration

EDT Priority Reaches

- 🟢 Conservation
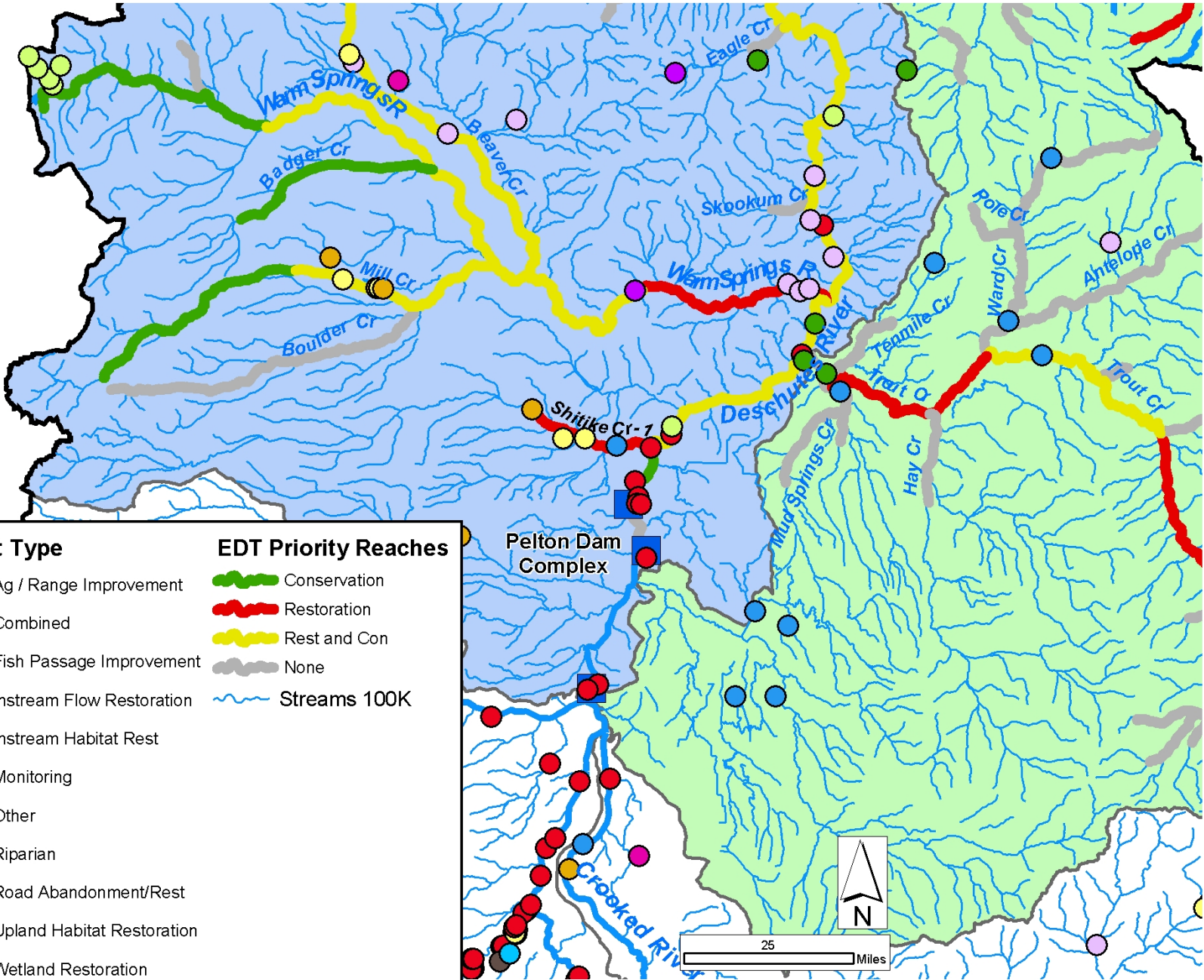- 🔴 Restoration
- 🟡 Rest and Con
- ⚪ None
- 〜 Streams 100K

Warm Springs R

Badger Cr

Beaver Cr

Eagle Cr

Skookum Cr

Warm Springs R

Mill Cr

Boulder Cr

Deschutes River

Pole Cr

Antelope Cr

Ward Cr

Tenmile Cr

Trout Cr

Trout Cr

Mud Springs Cr

Hay Cr

Shitike Cr - 1

Pelton Dam Complex

Crooked River

25 Miles

N

Project Type	Title	Description
Fish Passage Improvement	Shitike Creek Headworks Dam	dam removal
Instream Habitat Improvement	Shitike Creek Lower	instream habitat restoration with structures
Instream Habitat Improvement	Shitike Creek Community	gabion placement
Instream Flow Restoration	Shitike Creek Community Bridge	infiltration gallery to conserve and purify water

Geographic Area:	Shitike Cr-1			Stream:	
Reach:	From mouth at Deschutes R to headworks in section 17			**Reach Length (mi):**	8.70
				Reach Code:	Shitike Cr-1

Restoration Benefit Category:1/	A	**Productivity Rank:1/**	1	**Potential % change in productivity:2/**	33.3%
Overall Restoration Potential Rank:1/	1	**Average Abundance (Neq) Rank:1/**	1	**Potential % change in Neq:2/**	23.1%
(lowest rank possible - with ties)1/	18	**Life History Diversity Rank:1/**	4	**Potential % change in diversity:2/**	0.0%
Preservation Benefit Category:1/	A	**Productivity Rank:1/**	3	**loss in productivity with degradation:2/**	-19.8%
Overall Preservation Rank:1/	3	**Average Abundance (Neq) Rank:1/**	3	**% loss in Neq with degradation:2/**	-26.0%
(lowest rank possible - with ties)1/	21	**Life History Diversity Rank:1/**	3	**% loss in diversity with degradation:2/**	-20.1%

					Change in attribute impact on survival															
Life stage	**Relevant months**	**% of life history trajectories affected**	**Productivity change (%)**	Life Stage Rank	Channel stability	Chemicals	Competition (w/ hatch)	Competition (other sp)	Flow	Food	Habitat diversity	Harassment/poaching	Obstructions	Oxygen	Pathogens	Predation	Sediment load	Temperature	Withdrawals	Key habitat quantity
Spawning	Sep	25.3%	-10.9%	6							●							●		○
Egg incubation	Sep-Apr	25.3%	-26.6%	3	●												●	●		○
Fry colonization	Mar-May	36.9%	-20.8%	1	●				●	●	●					●				●
0-age active rearing	Mar-Oct	73.6%	-8.2%	2				●		●	●									●
0-age migrant	Oct-Nov	16.7%	-3.3%	7							●						●	●		●
0-age inactive	Oct-Mar	5.4%	-38.1%	5	●				●	●	●									●
1-age active rearing	Mar-May	5.4%	-5.8%	8				●	●		●									●
1-age migrant	Mar-Jun	14.4%	-0.5%	9							●						●			○
1-age transient rearing																				
2+-age transient rearing																				
Prespawning migrant	Apr-Aug	100.0%	-0.1%	10							●									●
Prespawning holding	May-Sep	25.3%	-18.8%	4					●		●							●		●

Using Core Data Standards and Tools We Can:

- Capture fine-scale biological and physical detail

- Integrate details at larger scales to address management needs

- Provide summary reports at any scale

- Prioritize and implement effective actions

- Communicate with, and between, management and stakeholder groups

Moving From Concept to Reality

- Cooperate to develop and use core data standards (e.g. NED, PNAMP, CSMEP, StreamNet)
- Move existing data into the core framework (StreamNet, Subbasin Archiving, agencies)
- Improve information sharing (NED, existing projects, agencies)
- Provide technical support to management and stakeholder groups, as needed
- Plan ahead – easier, cheaper, more accurate
- Require new projects to use core standards