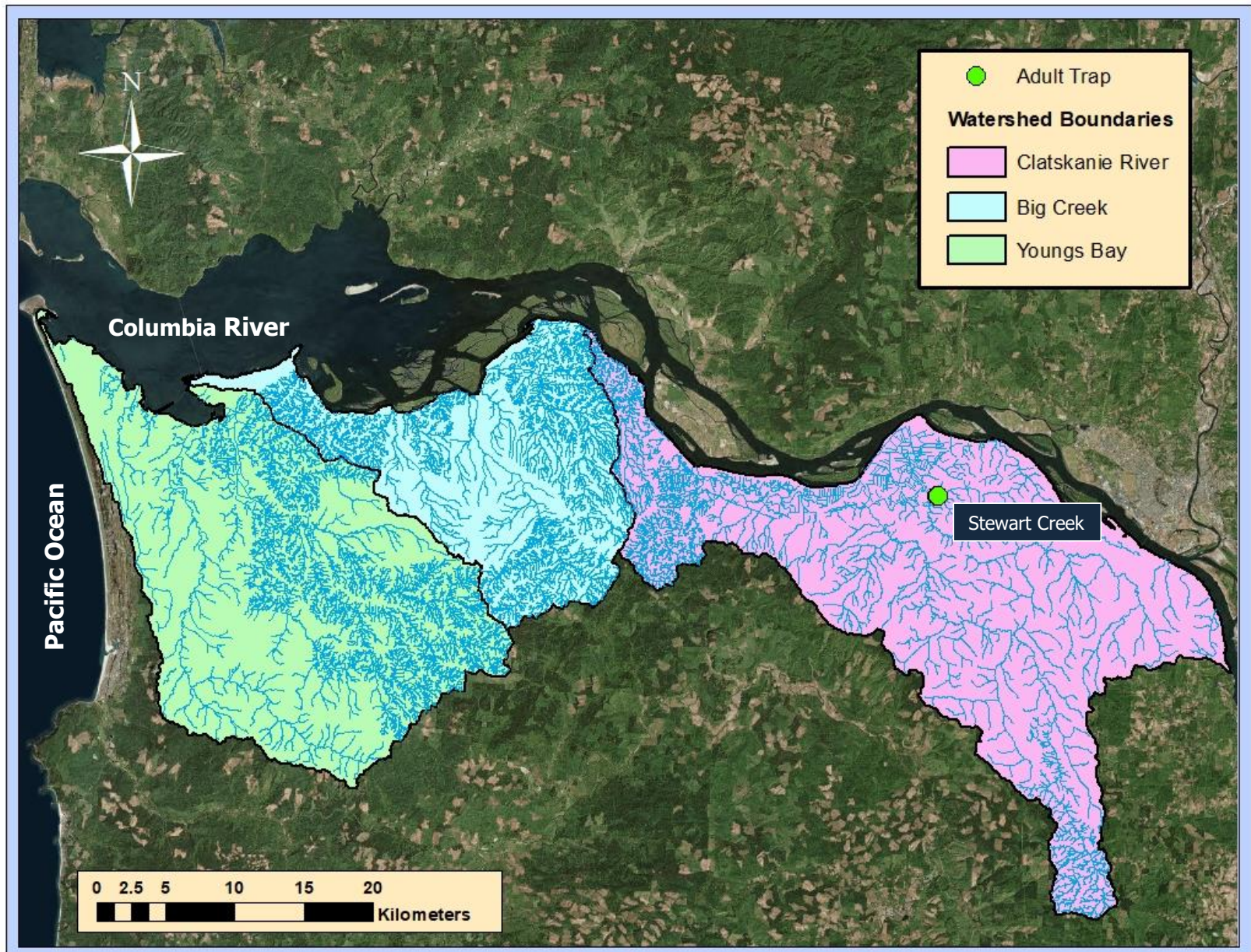


Chum Salmon Reintroduction Project (2017-18)

SALMON
SPAWNING
SURVEY

Derek Wiley
Assistant Project Leader
Oregon Department of Fish & Wildlife
93000 Ritter Road
Astoria, Oregon 97103

Adult Trapping (Stewart Creek)



Adult Trapping (Stewart Creek)



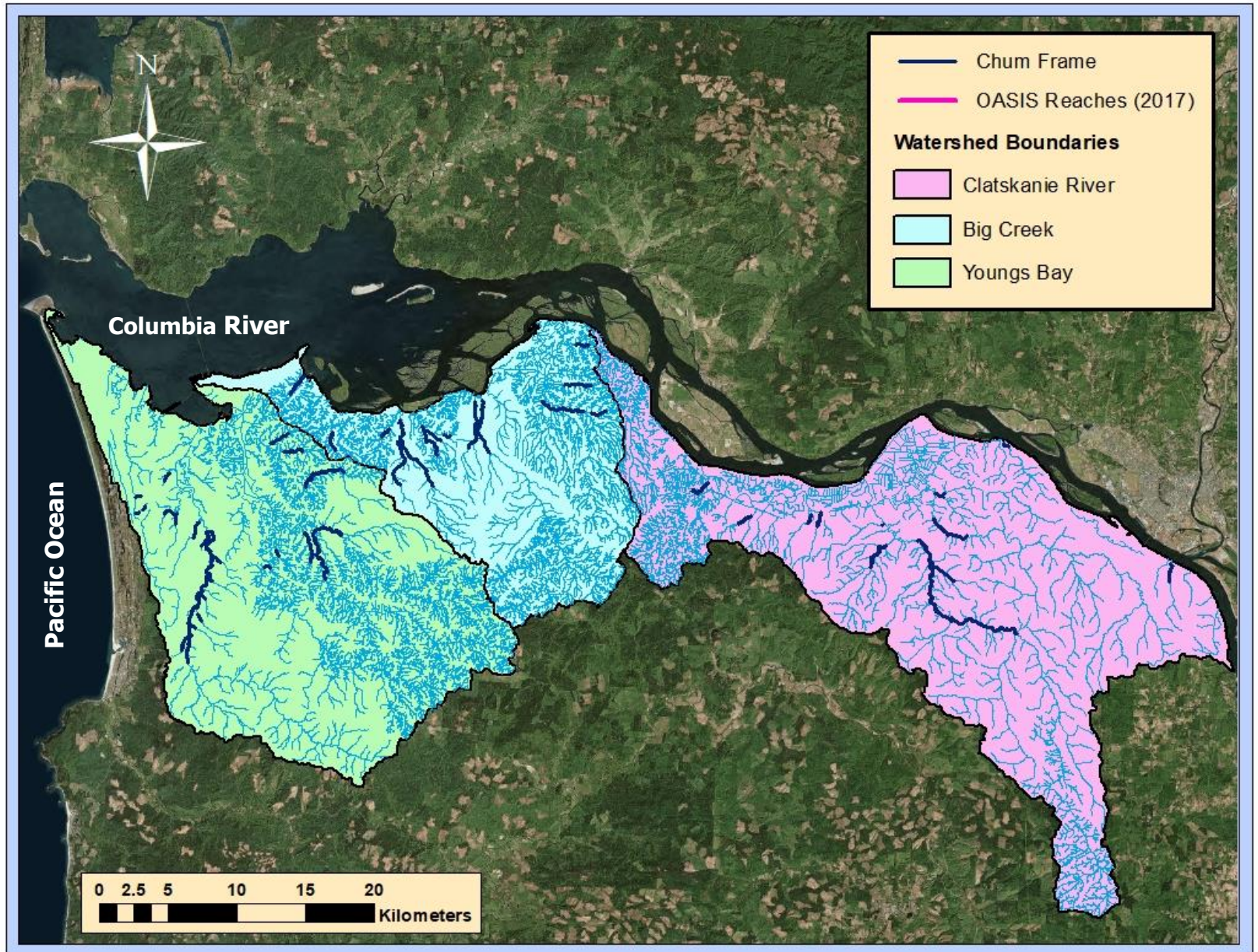
Adult Trap

- Operated 10/10 - 12/21
- No live fish captured
- Carcasses (3 male, 2 female wild coho on weir)

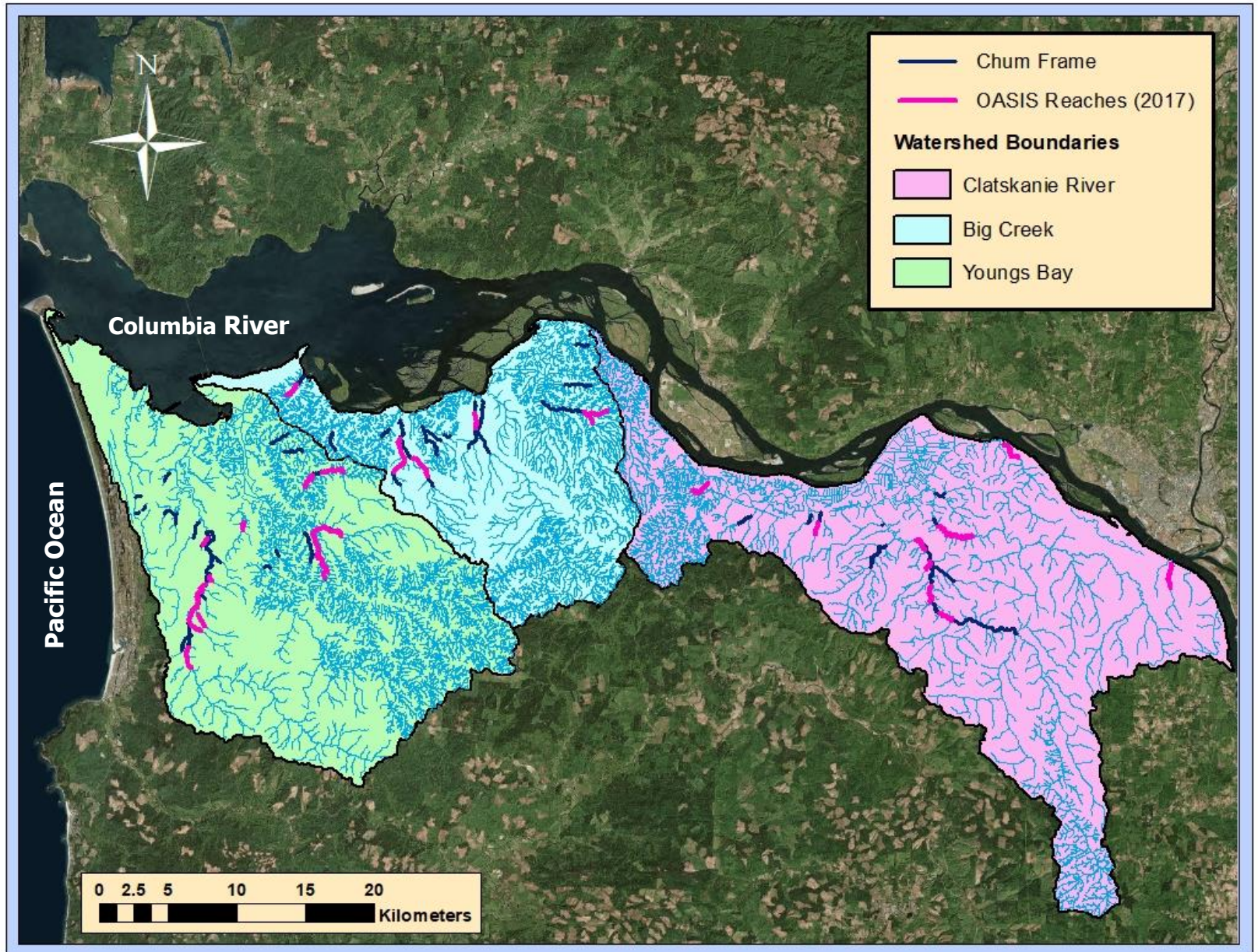
Spawning Surveys

- 11 surveys conducted upstream on main, NF & SF Stewart Creeks (10/11 - 12/11)
- 10 live coho observed (8 wild, 2 unknown)
- 2 wild coho carcasses

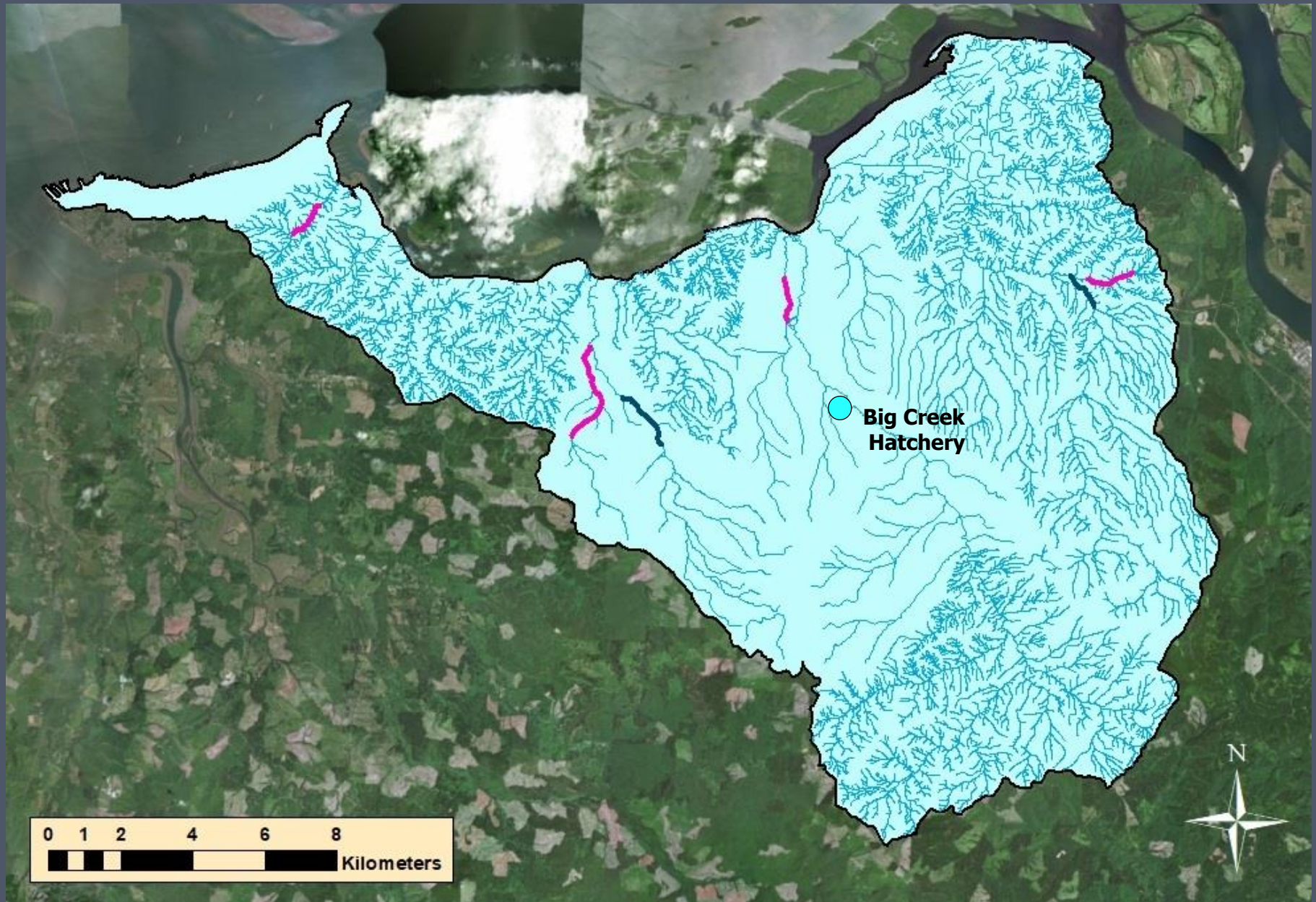
Spawning Surveys



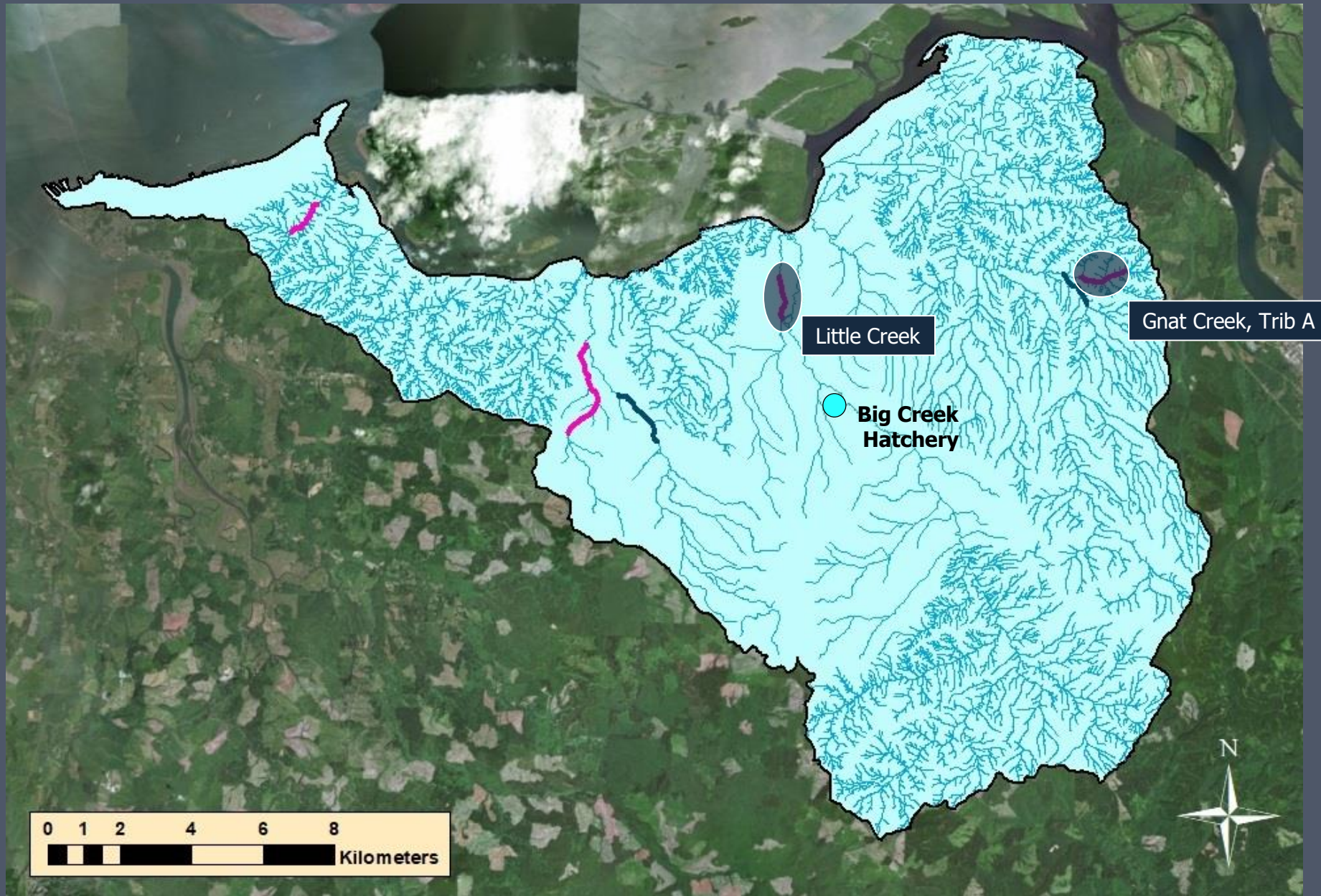
Spawning Surveys



Spawning Surveys (Big Creek Watershed)



Spawning Surveys (Big Creek Watershed)



Spawning Surveys (Big Creek Watershed)

Gnat Creek, Trib A



- No chum
- Two wild coho, 6 unknown coho
- Almost no spawning habitat

Little Creek



- No fish
- Survey is inaccessible
- Good and bad habitat

Spawning Surveys (Big Creek Watershed)

Little Creek



Good cobble/gravel

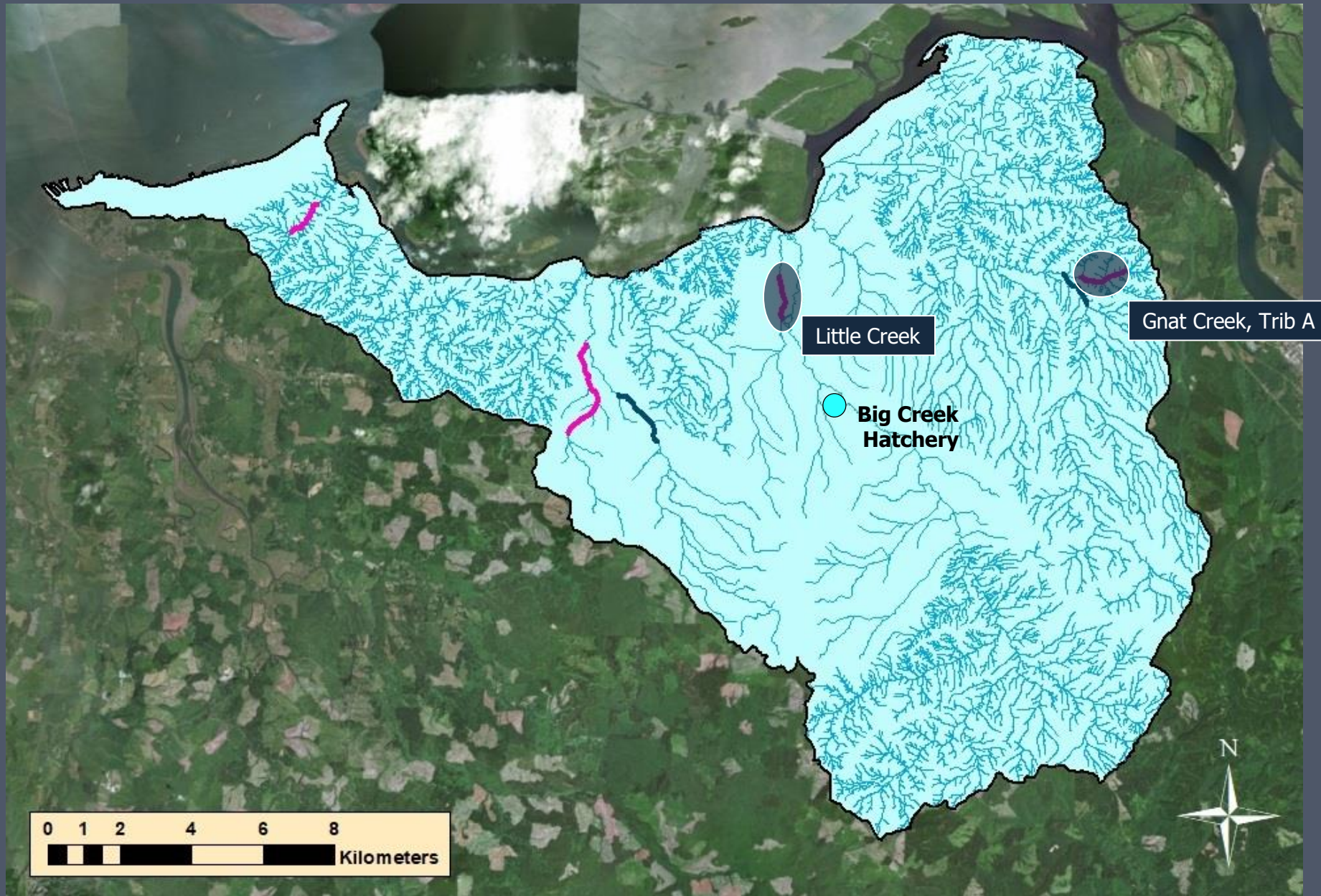


Long undersized culvert

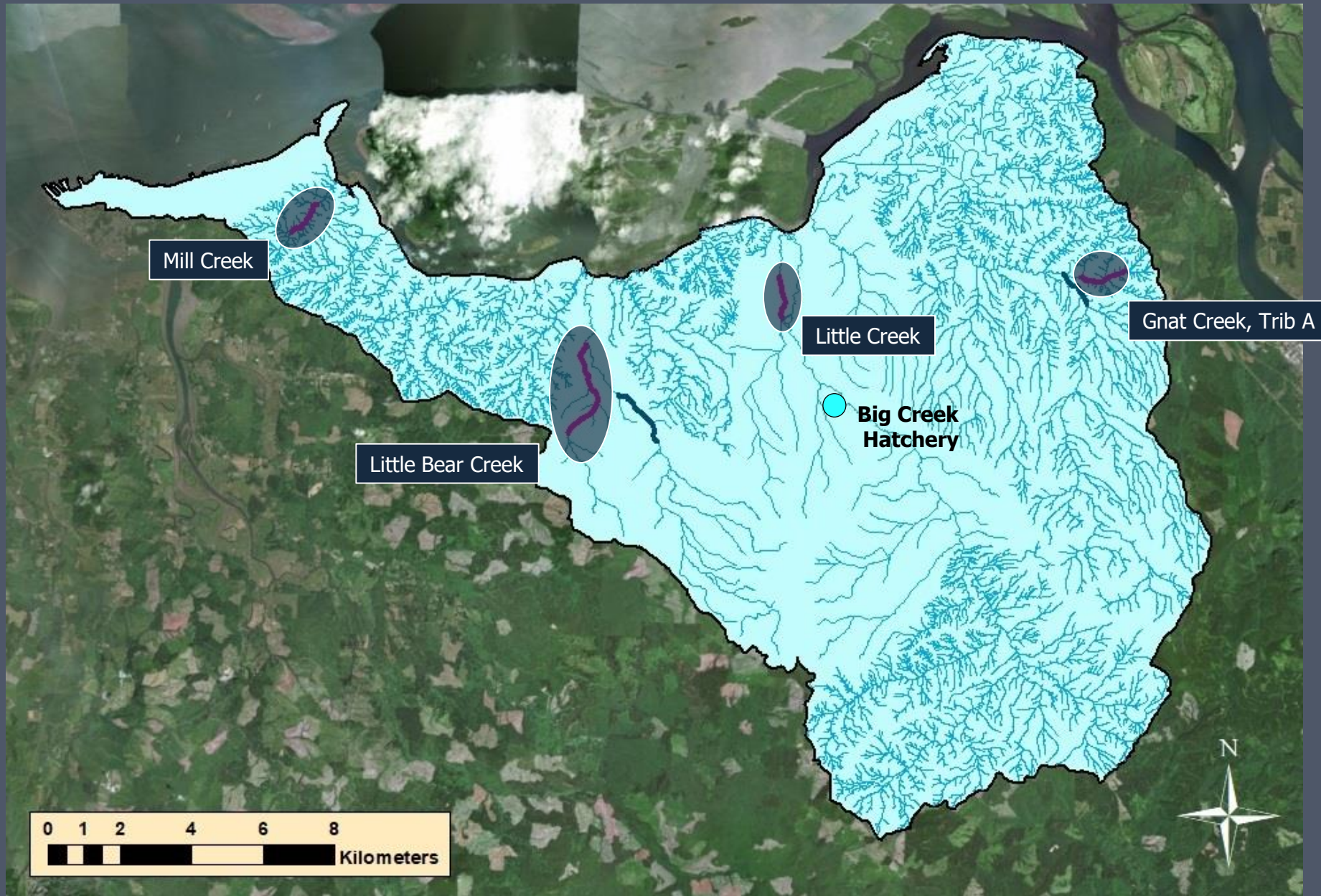


Excess nutrients

Spawning Surveys (Big Creek Watershed)



Spawning Surveys (Big Creek Watershed)



Spawning Surveys (Big Creek Watershed)

Little Bear Creek



Mill Creek



Spawning Surveys (Big Creek Watershed)

Little Bear Creek (2 reaches)



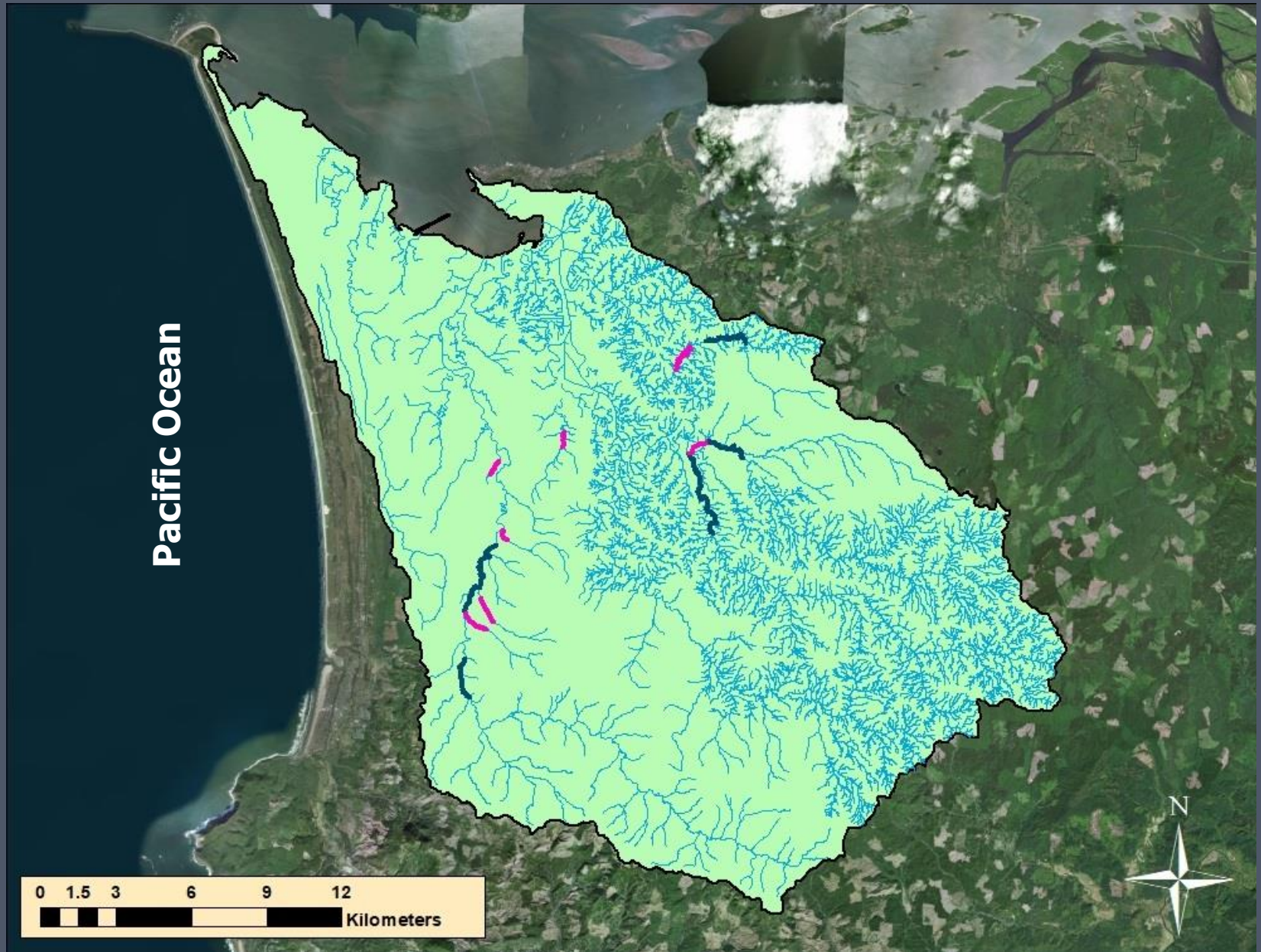
Mill Creek



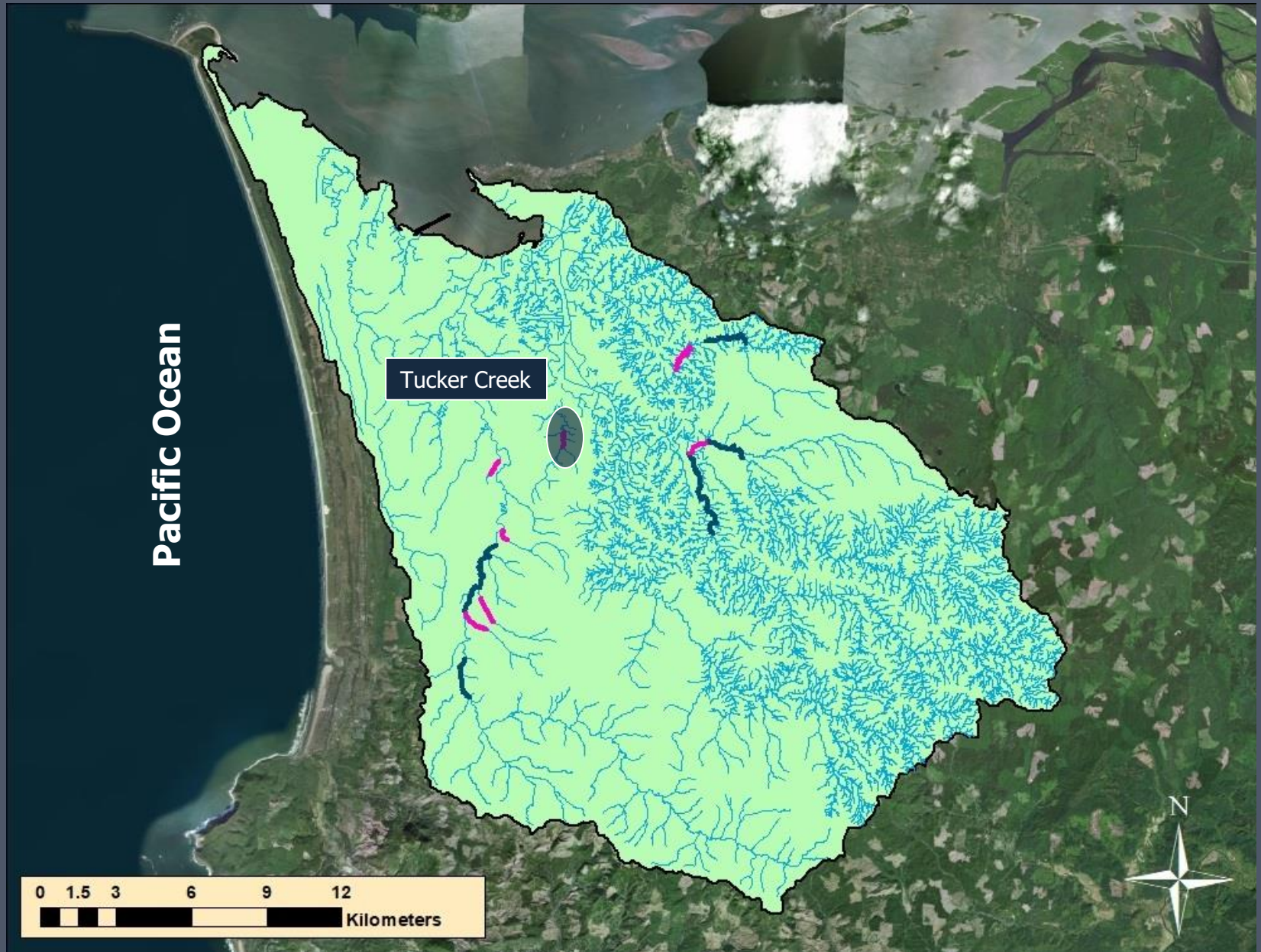
- No chum or Chinook
- 132 live visual/carcass observations
- 93% of visuals/carcasses hatchery coho
- Good habitat, several likely barriers for chum at end of first reach

- No chum or Chinook
- 134 live visual/carcass observations
- 96% of visuals/carcasses hatchery coho
- Good habitat in some sections, lots of sediment

Spawning Surveys (Youngs Bay Watershed)



Spawning Surveys (Youngs Bay Watershed)

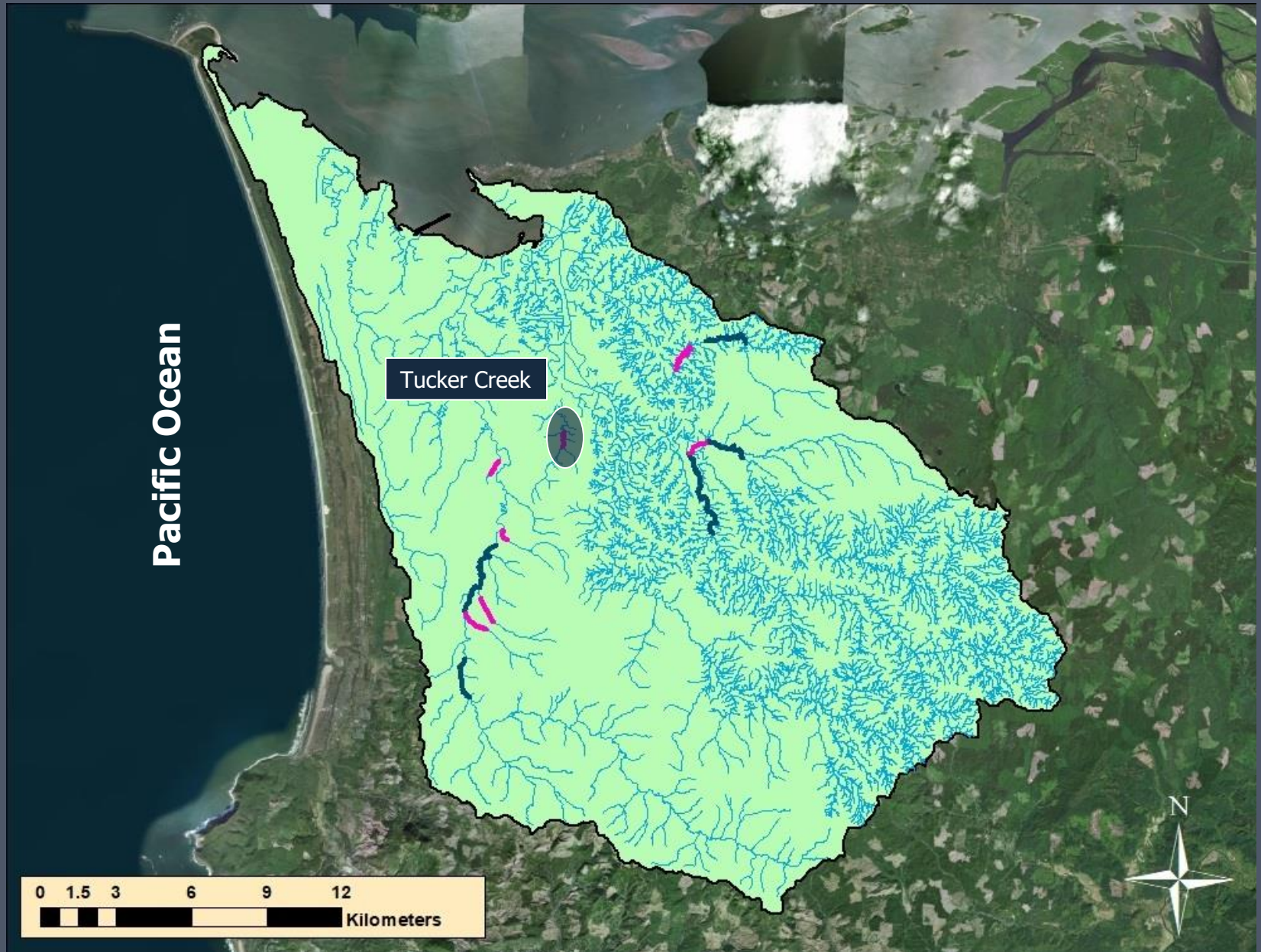


Spawning Surveys (Youngs Bay Watershed)

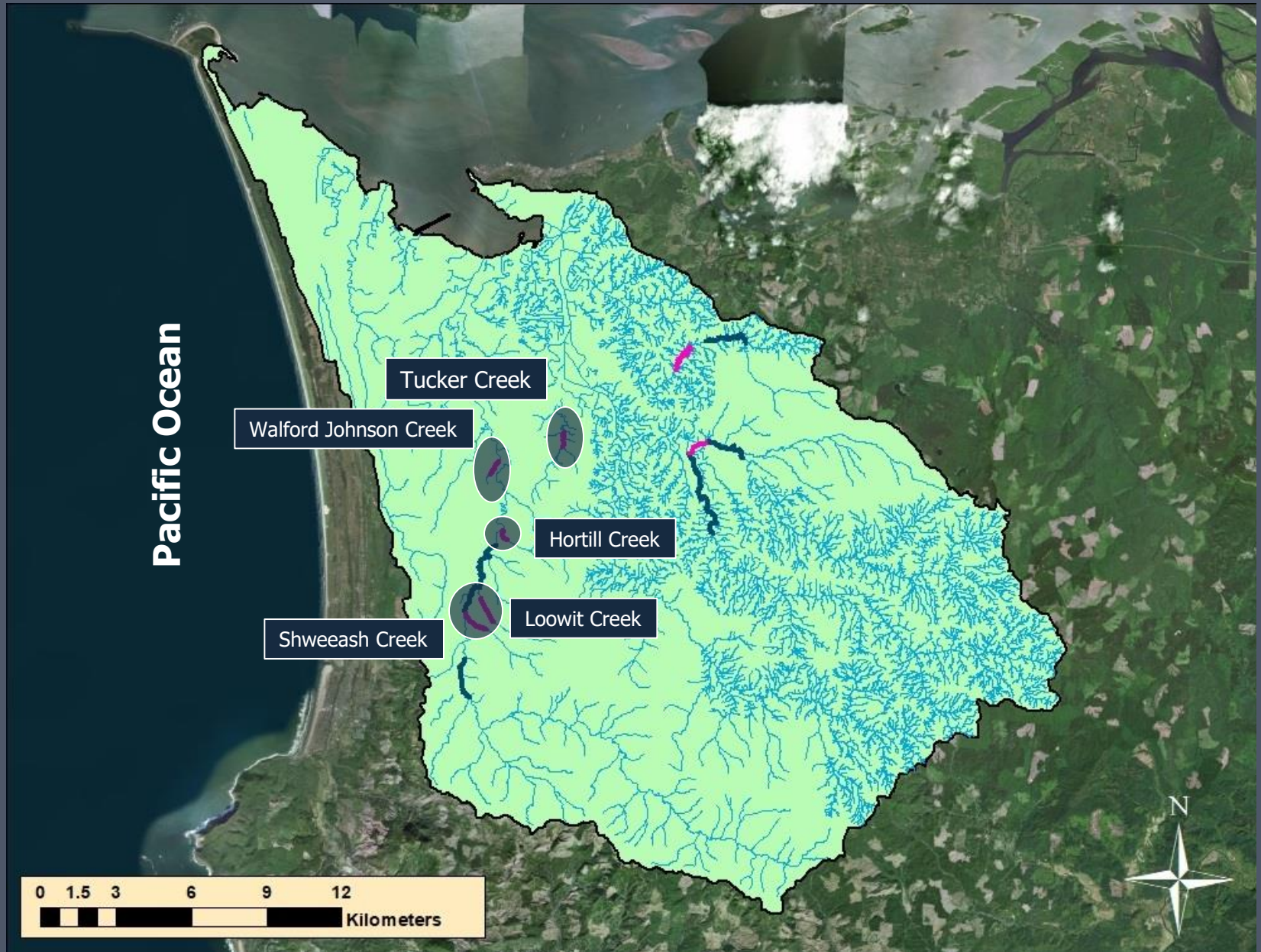
Tucker Creek



Spawning Surveys (Youngs Bay Watershed)



Spawning Surveys (Youngs Bay Watershed)



Spawning Surveys (Youngs Bay Watershed)

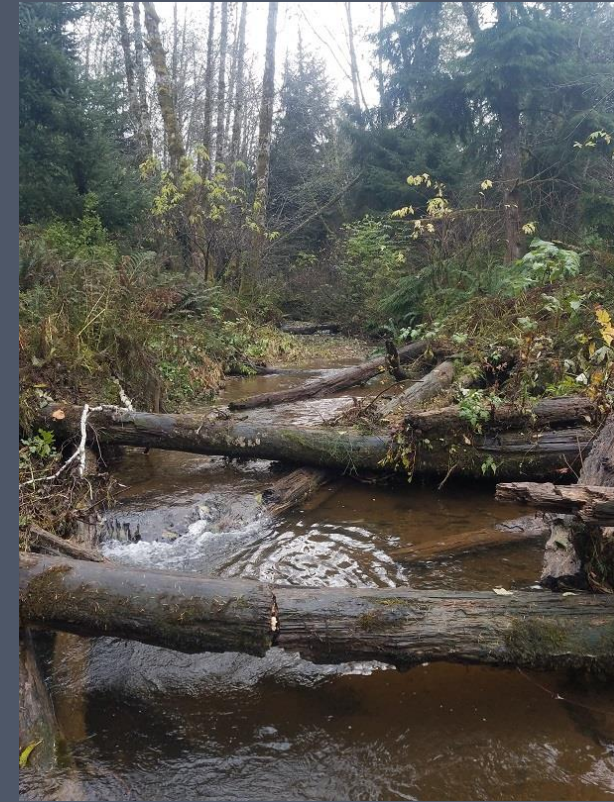
Hortill Creek



Walford Johnson Creek

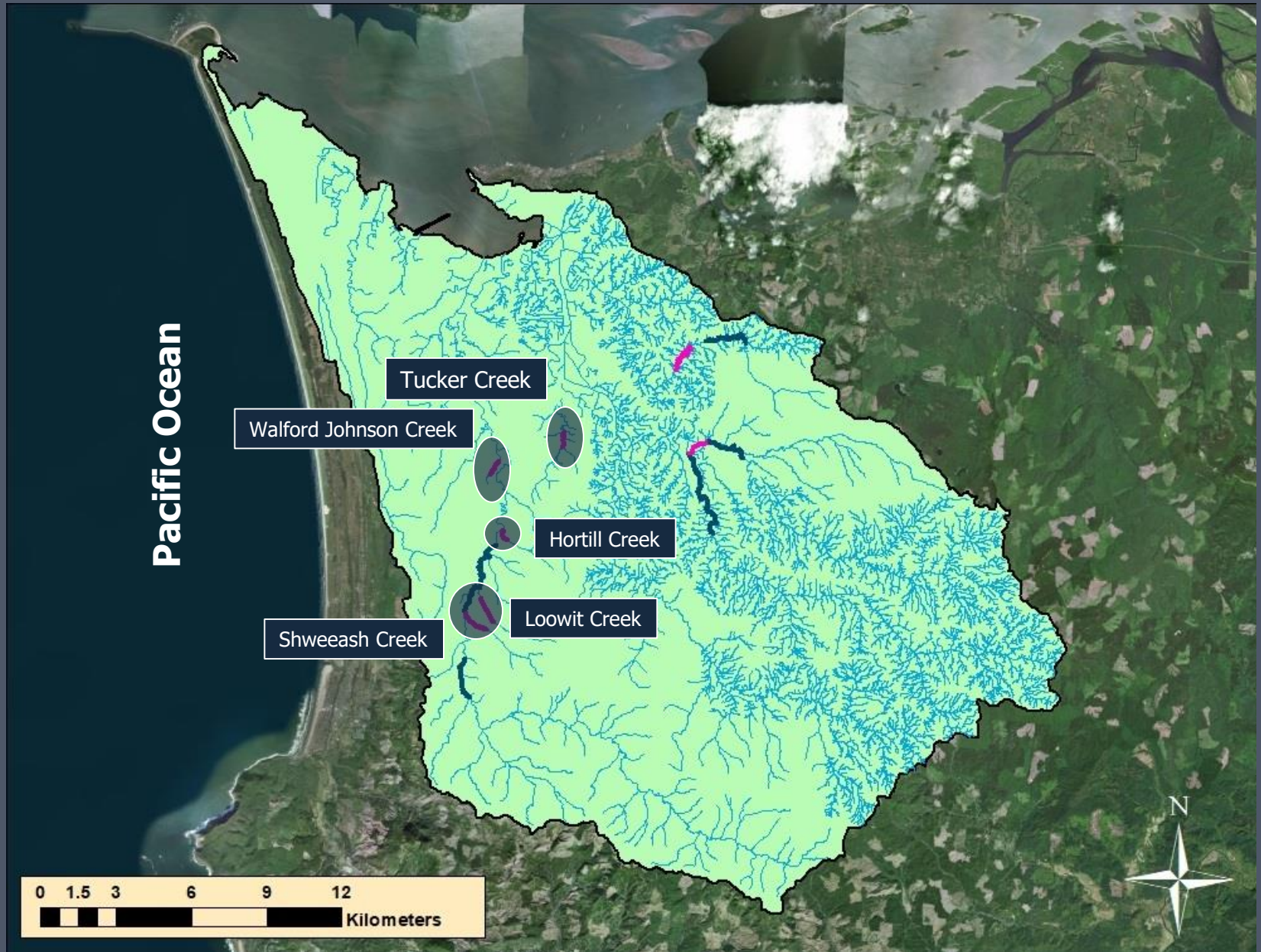


Shweeash Creek

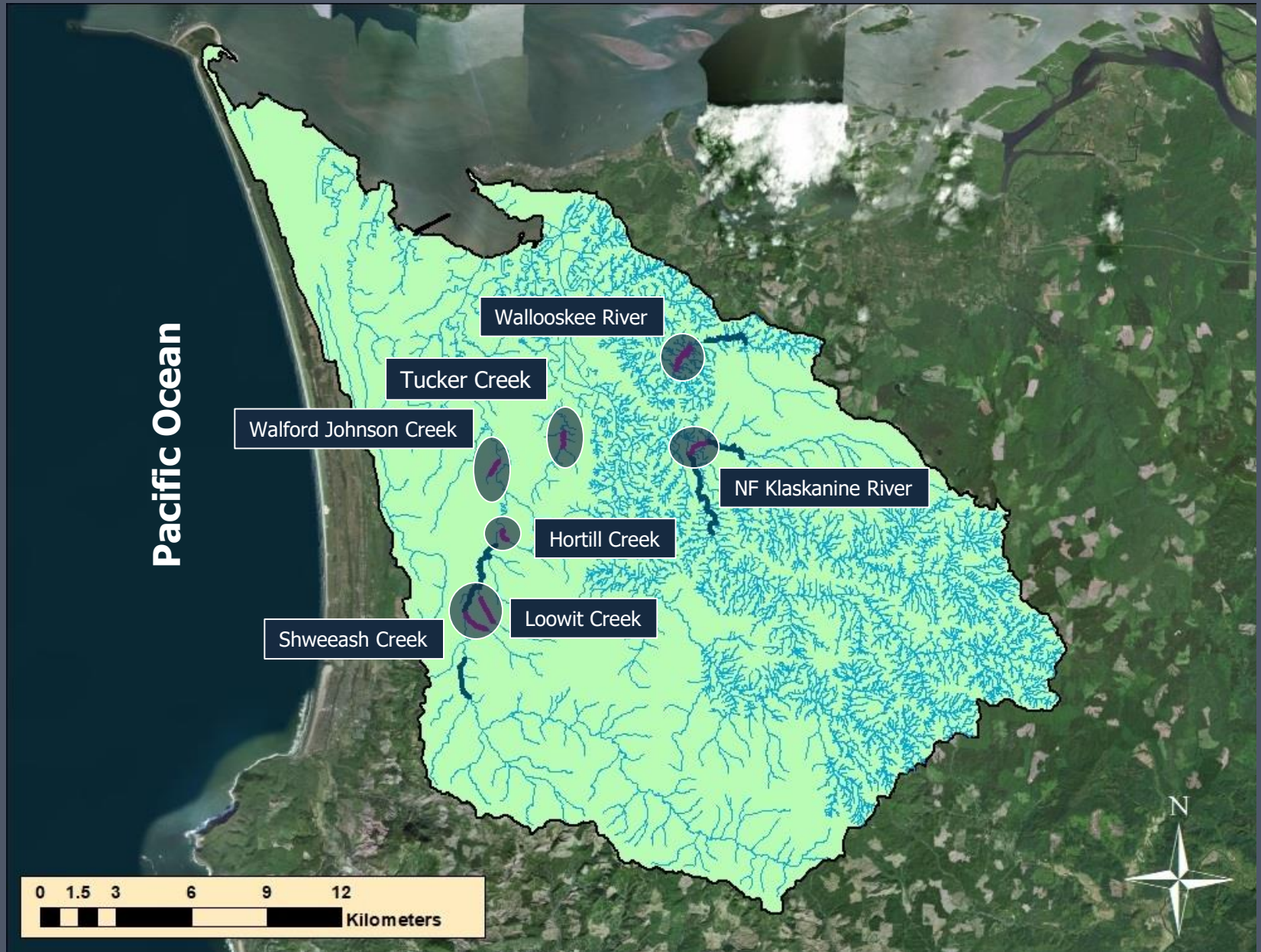


- No chum or Chinook
- 84 live visual/carcass observations
- 98% of visuals/carcasses hatchery coho
- Good habitat in some sections, waterfall barriers at end of two reaches

Spawning Surveys (Youngs Bay Watershed)



Spawning Surveys (Youngs Bay Watershed)

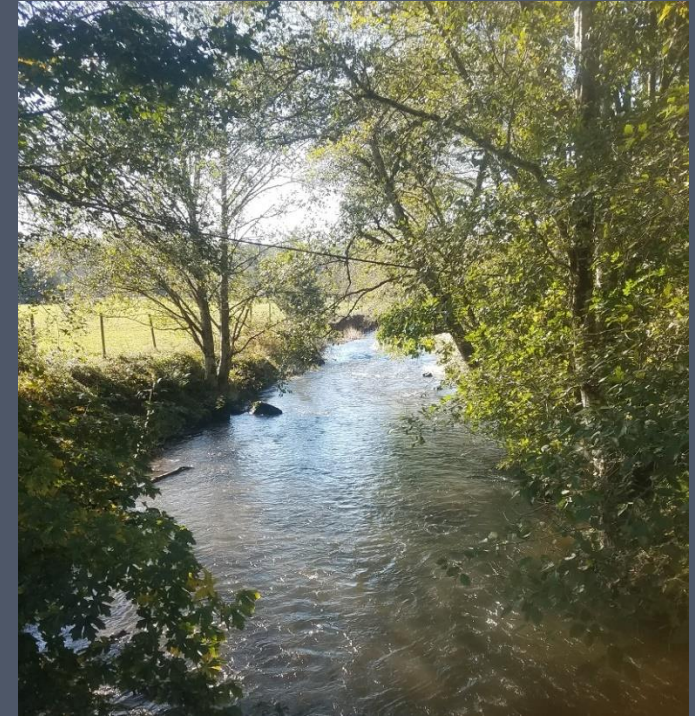


Spawning Surveys (Youngs Bay Watershed)

Wallooskee River

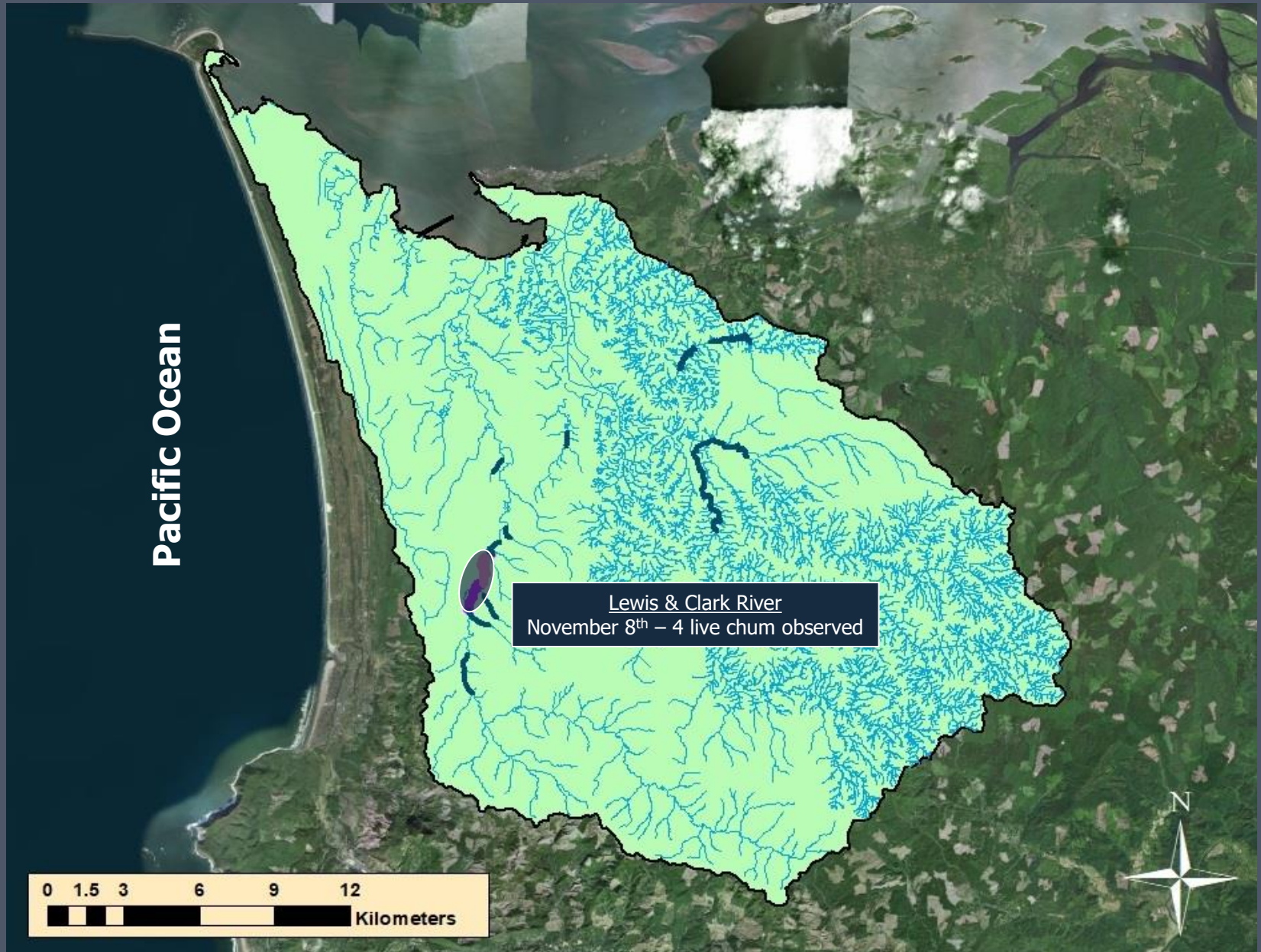


NF Klaskanine River



- Wallooskee River (1 live hatchery coho)
- NF Klaskanine River (1 live hatchery coho, 2 live wild coho, several unknowns)
- 4 unknown Chinook
- Large reach.....high, turbid water made surveying difficult

Spawning Surveys (Youngs Bay Watershed)



Screw Traps



Bear Creek (Screw Trap)



Pacific Ocean

Lower Columbia River



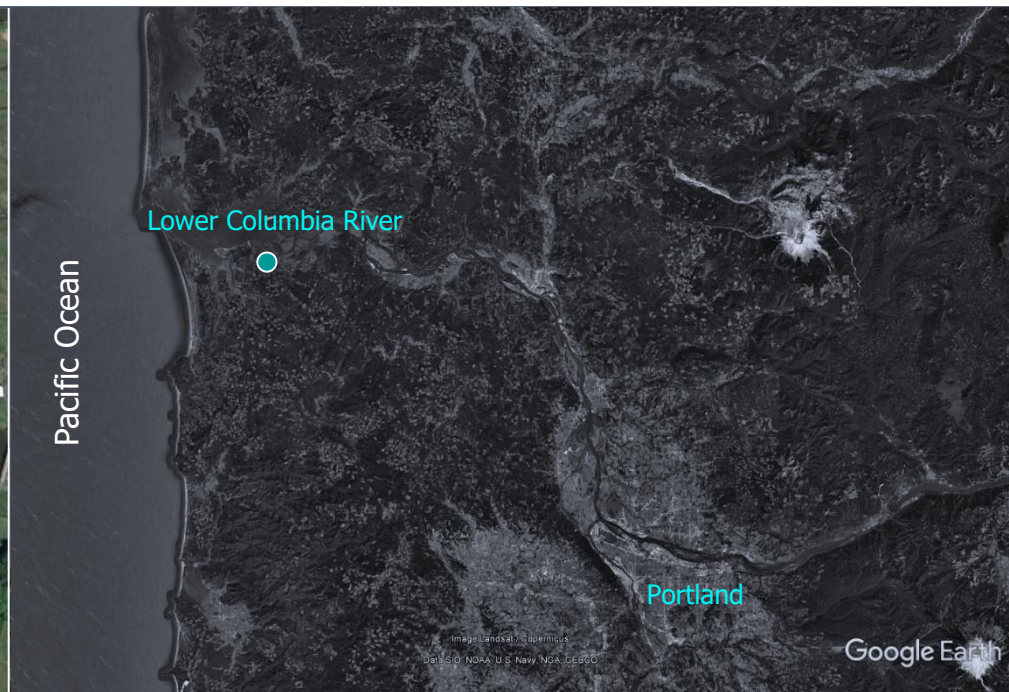
Portland

Image Landsat / Copernicus

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

Bear Creek (Screw Trap)



Bear Creek (Screw Trap)



Trap Operation (February 21 - May 23)

Continuous: 79 days

Partial: 2 days

Pulled: 5 days

"Peamouthed": 17 days



Bear Creek (Total Catch)



Species	Total Catch	Eff. (%)
Coho Smolts	639	24.8%
Coho Fry	1,501	5.9%
Trout Fry	42	
Chum Fry	16	0.0%
Chinook All	10	10.0%
Steelhead (≥120)	665	22.2%
Steelhead (90-119)	88	15.4%
Steelhead (60-89)	10	30.0%
Cutthroat (≥250)	11	
Cutthroat (160-249)	167	21.1%
Cutthroat (120-159)	86	29.4%
Cutthroat (90-119)	7	0.0%
Cutthroat (60-89)	0	

Bear Creek (Total Catch)



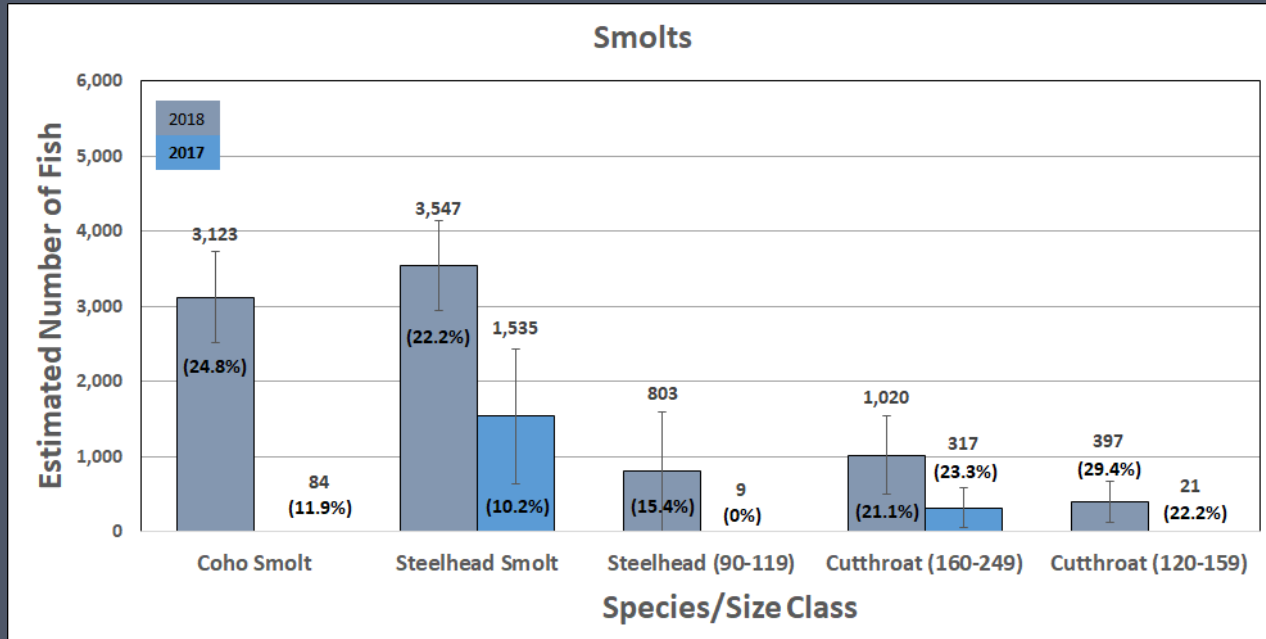
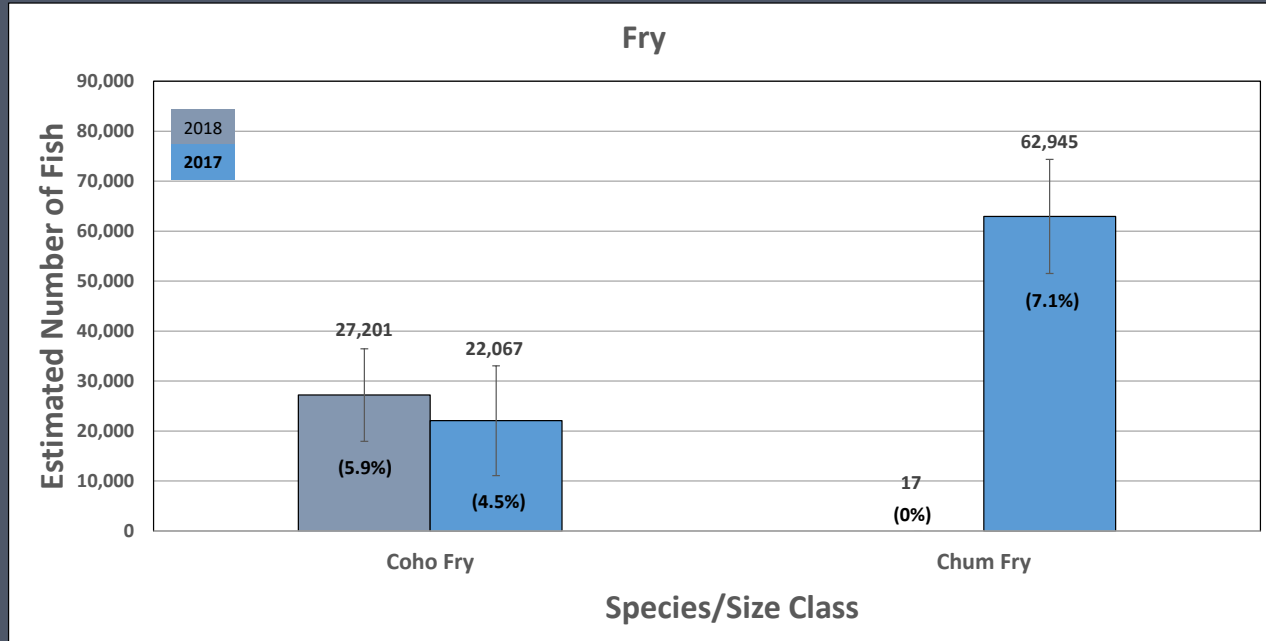
Species	Total Catch	Eff. (%)
Coho Smolts	639	24.8%
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Trout Fry	42	
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Cutthroat (90-119)	7	0.0%
Cutthroat (60-89)	0	

Bear Creek (Abundance Estimates)



Species	Estimate (\pm CI)	Eff. (%)
Coho Smolts	3,123 \pm 608	24.8%
Coho Fry	27,201 \pm 9,271	5.9%
Trout Fry	(57)	
Chum Fry	(17)	0.0%
Chinook Fry	(10)	10.0%
Steelhead (\geq120)	3,547 \pm 598	22.2%
Steelhead (90-119)	803 \pm 796	15.4%
Steelhead (60-89)	(10)	30.0%
Cutthroat (\geq 250)	(13)	
Cutthroat (160-249)	1,020 \pm 527	21.1%
Cutthroat (120-159)	397 \pm 270	29.4%
Cutthroat (90-119)	(8)	0.0%
Cutthroat (60-89)	(0)	

Bear Creek (2018 vs. 2017 Comparison)



Bear Creek (Hatchery Fish)



Hatchery Species	Catch	
	2018	2017
Coho Smolt	49	1
Steelhead Smolt	6	0
Chinook	1	8



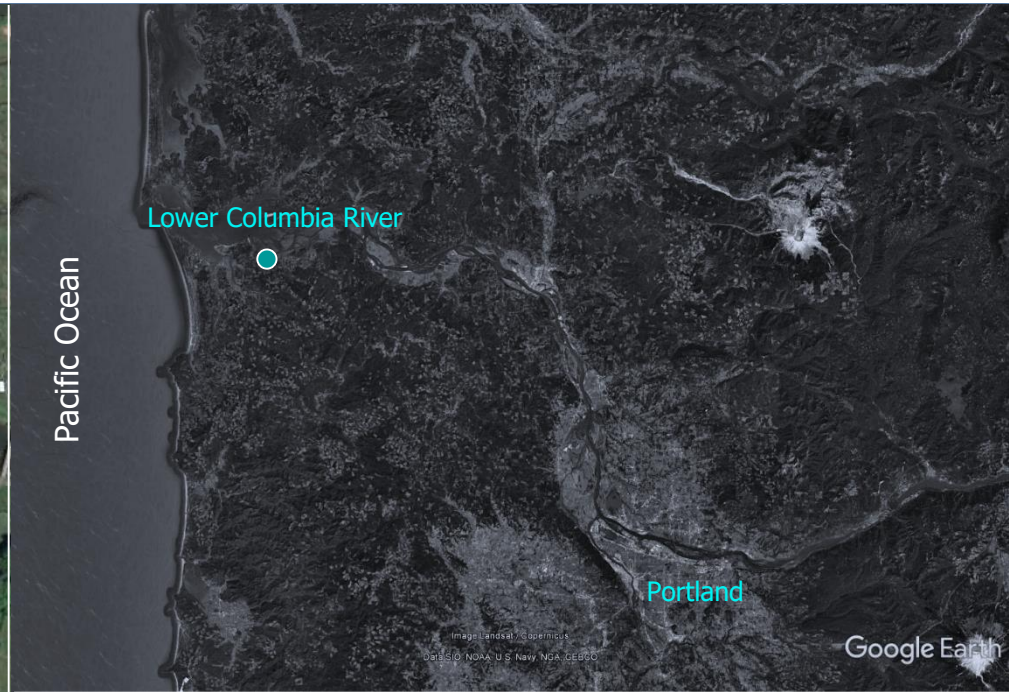
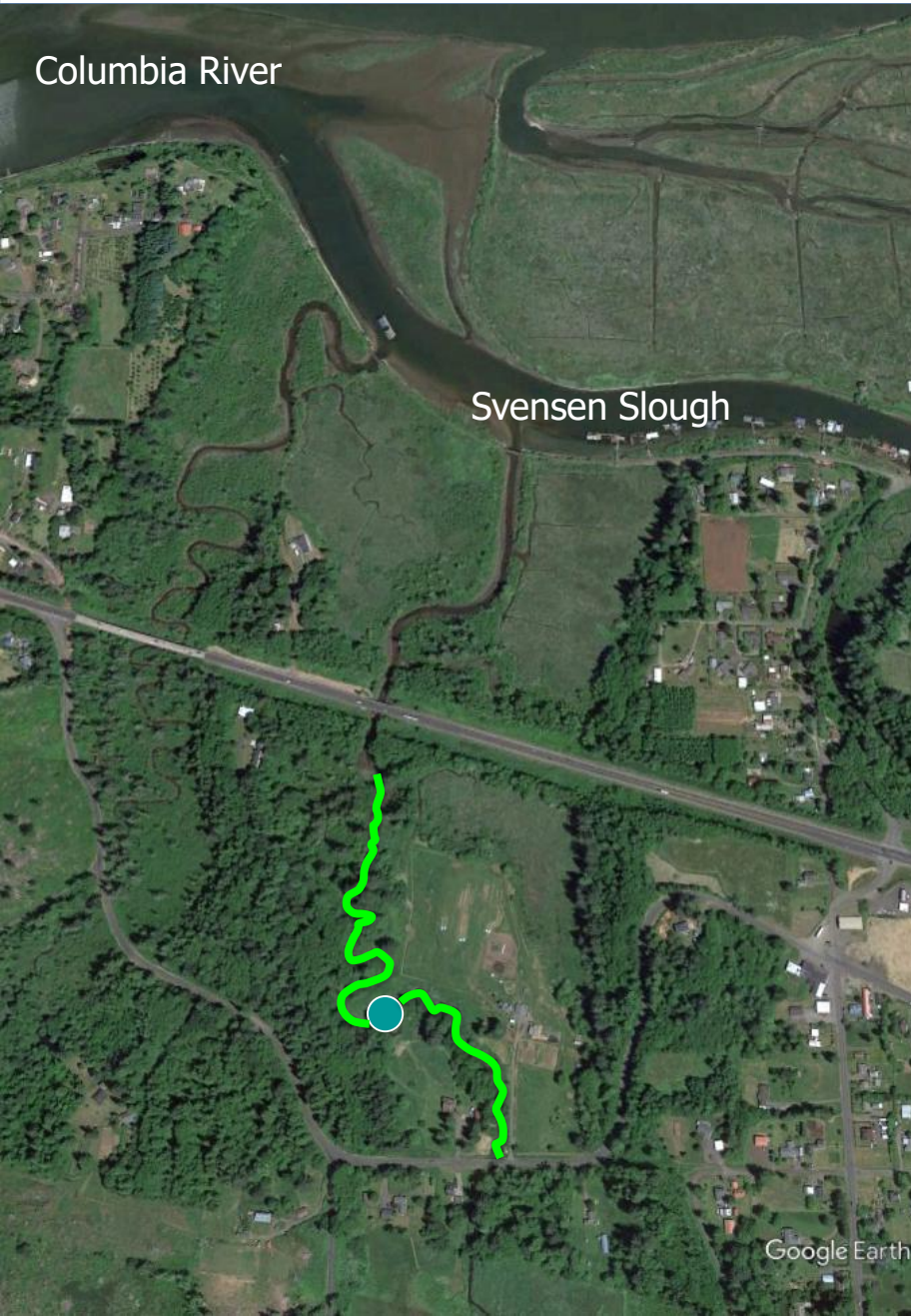
Bear Creek (Other Species)



Species	Catch
Peamouth	3,686
Cottid	426
Lamprey Ammocoete	407
Largescale Sucker	181
Brook Lamprey	116
Bluegill	13
Pacific Lamprey Adult	8
Pacific Lamprey Trans	4
Speckled Dace	1



Bear Creek (Peamouth Surveys)



Bear Creek (Peamouth Surveys)



Date	Peamouth Count	
	Upstream	Downstream
5/24	17,000	6,125
5/25	15,000	225
5/26	10,000	0
5/27	8,000	0
5/28	15,000	25,000
5/29	25,000	4,500
5/31	30,000	2,000
6/2	50,000	500
6/3	70,000	11,000
6/5	70,000	0
6/6	45,000	700
6/7	37,000	500
6/8	20,000	0
6/9	1	0
6/11	3,000	75
AVG.	27,667	3,375

Clatskanie River

Pacific Ocean

Lower Columbia River



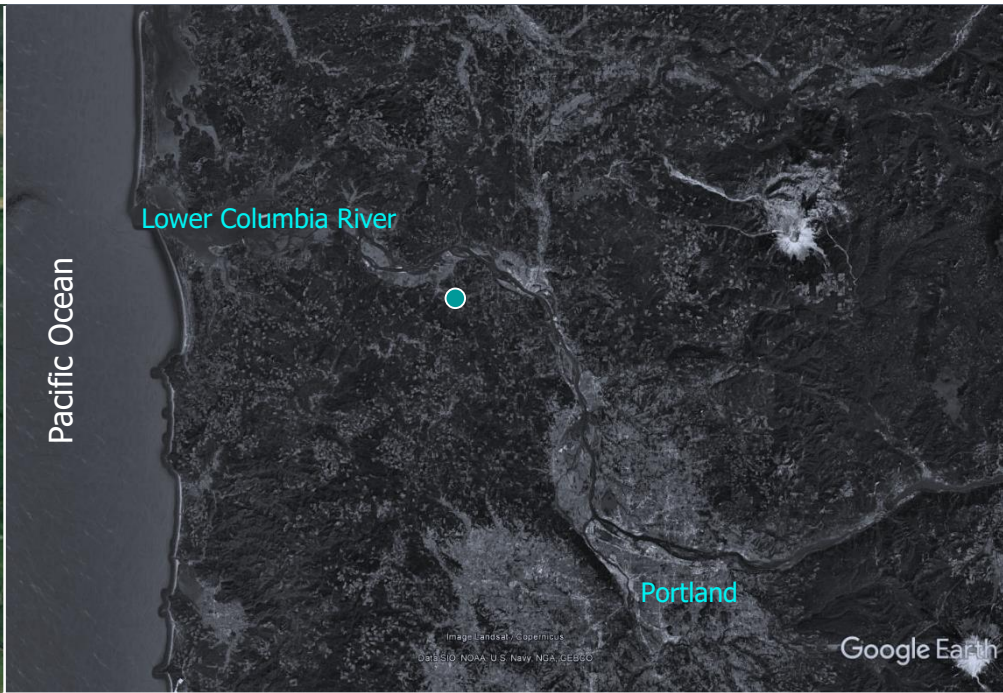
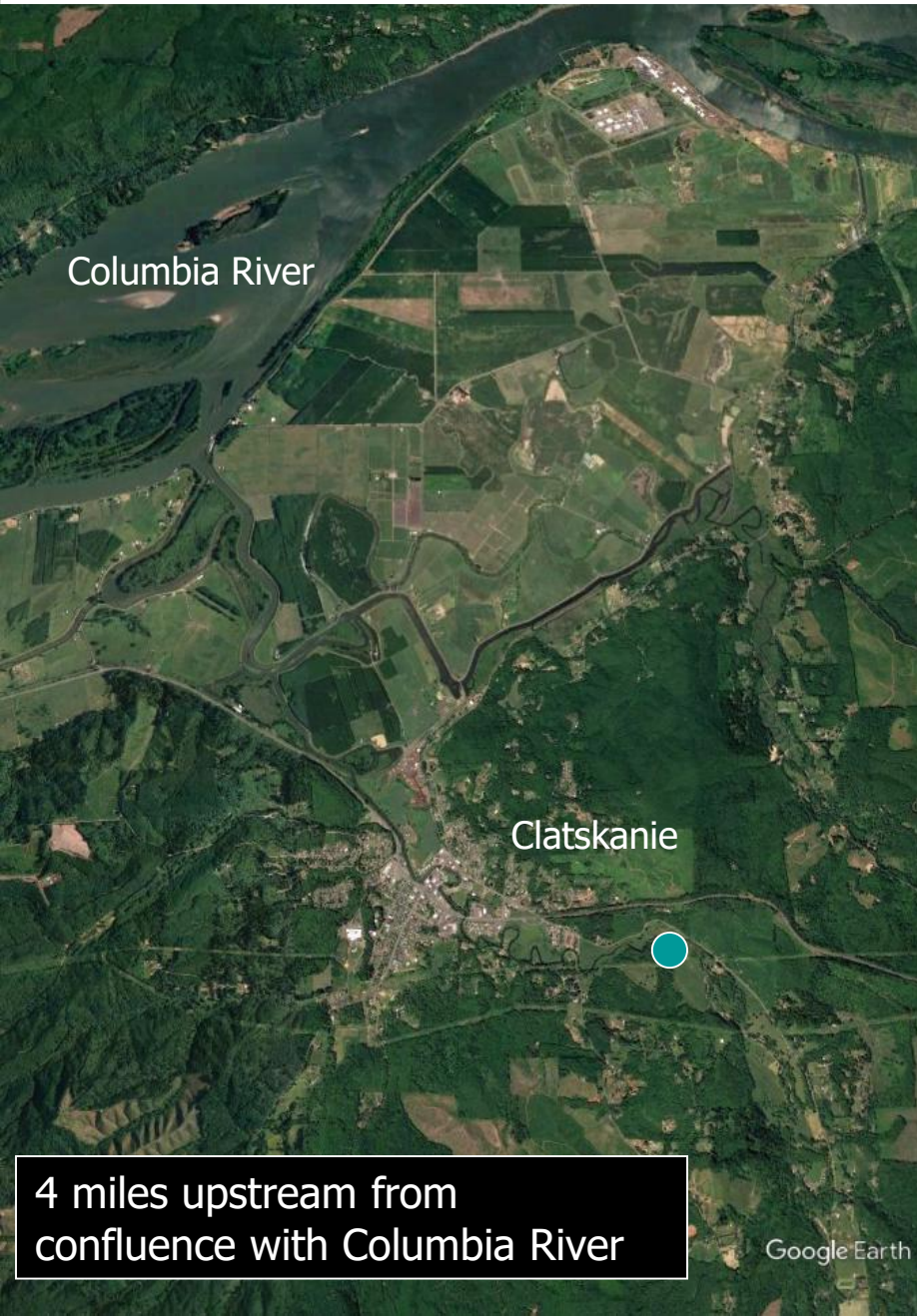
Portland

Image Landsat / Copernicus

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

Clatskanie River



Clatskanie River (Trap Operation)



Trap Operation (February 21 – June 11)

Continuous: 106 days

Partial: 0 days

Pulled: 5 days

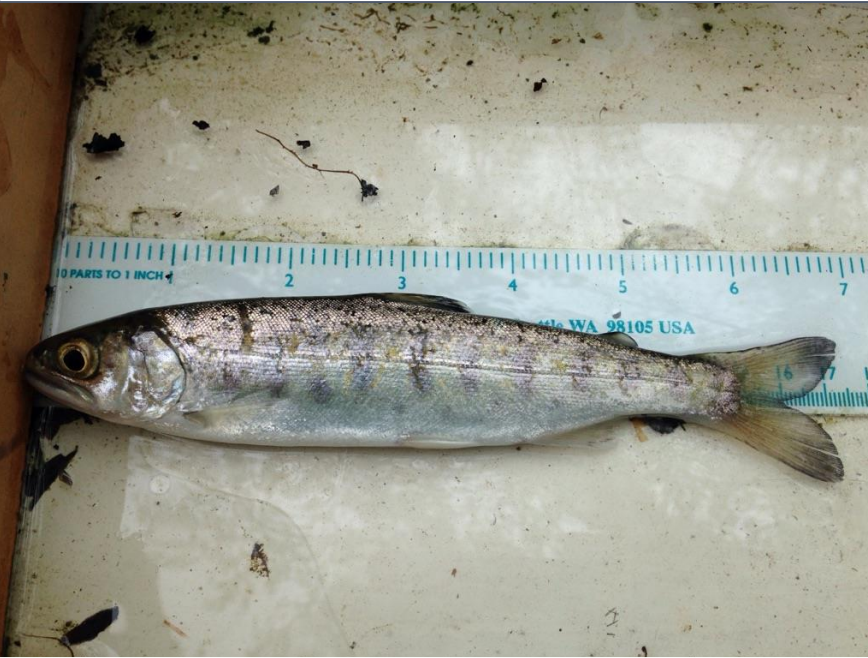


Clatskanie River (Total Catch)



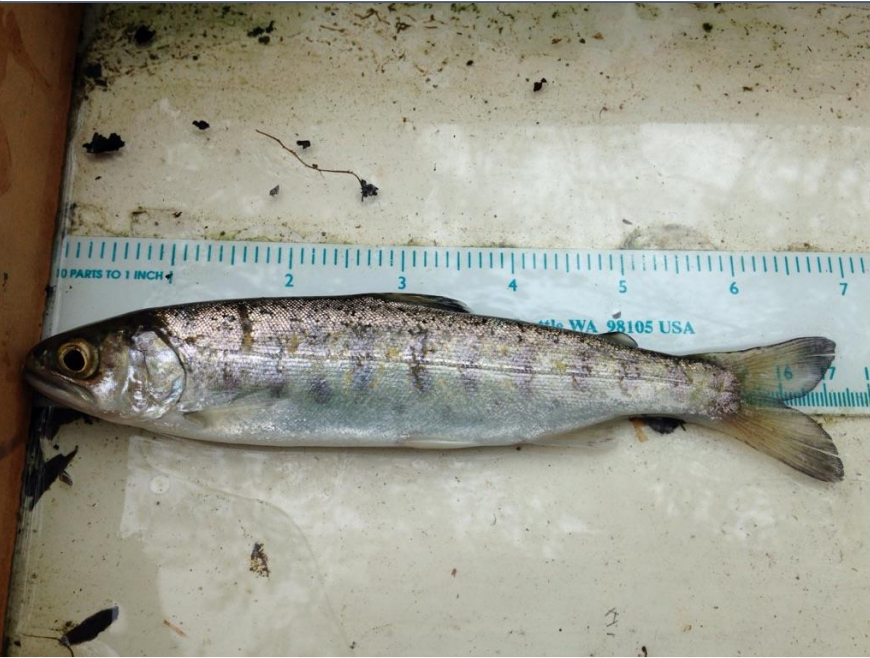
Species	Total Catch	Eff. (%)
Coho Smolts	9,898	19.2%
Coho Fry	1,361	6.4%
Trout Fry	24	
Chum Fry	16	6.3%
Chinook Fry	1,014	10.3%
Steelhead (≥120)	2,001	5.1%
Steelhead (90-119)	70	7.1%
Steelhead (60-89)	6	16.7%
Cutthroat (≥250)	29	
Cutthroat (160-249)	623	9.6%
Cutthroat (120-159)	118	11.7%
Cutthroat (90-119)	20	20.0%
Cutthroat (60-89)	2	50.0%

Clatskanie River (Total Catch)



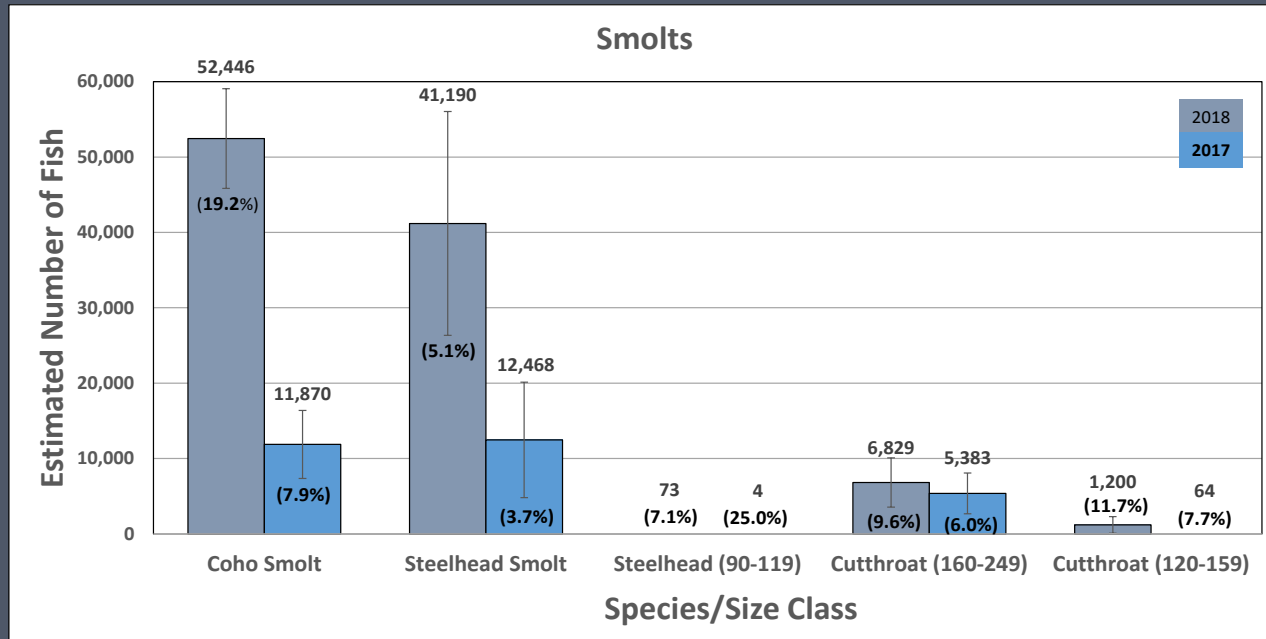
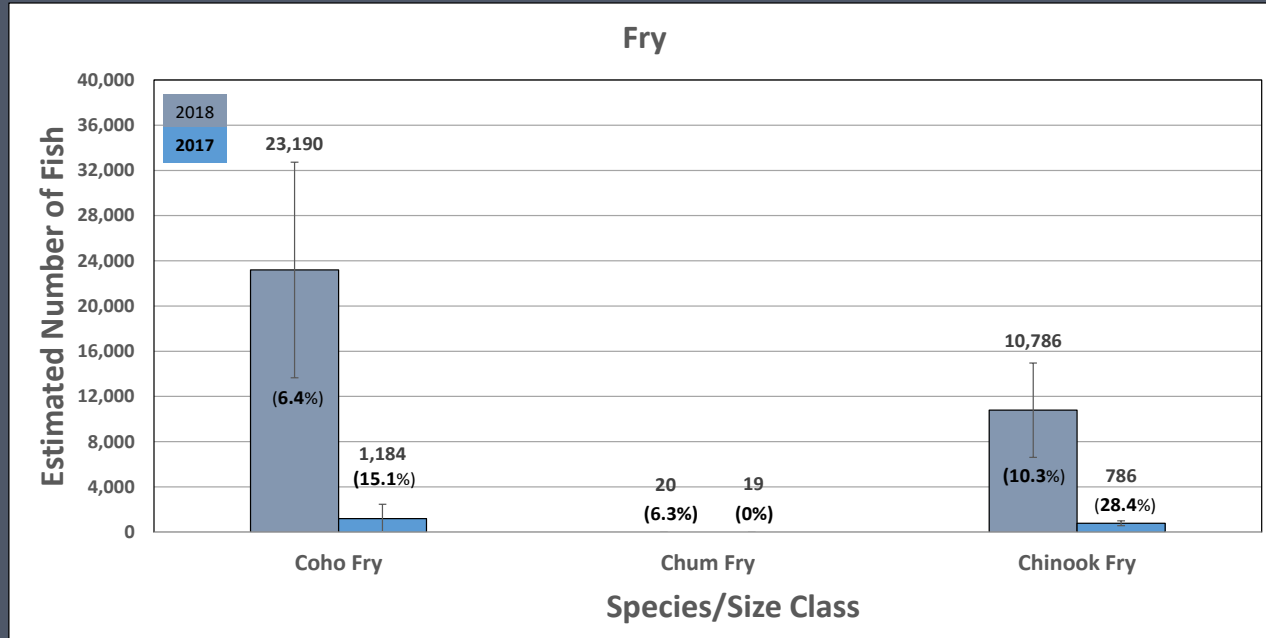
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Clatskanie River (Abundance Estimates)

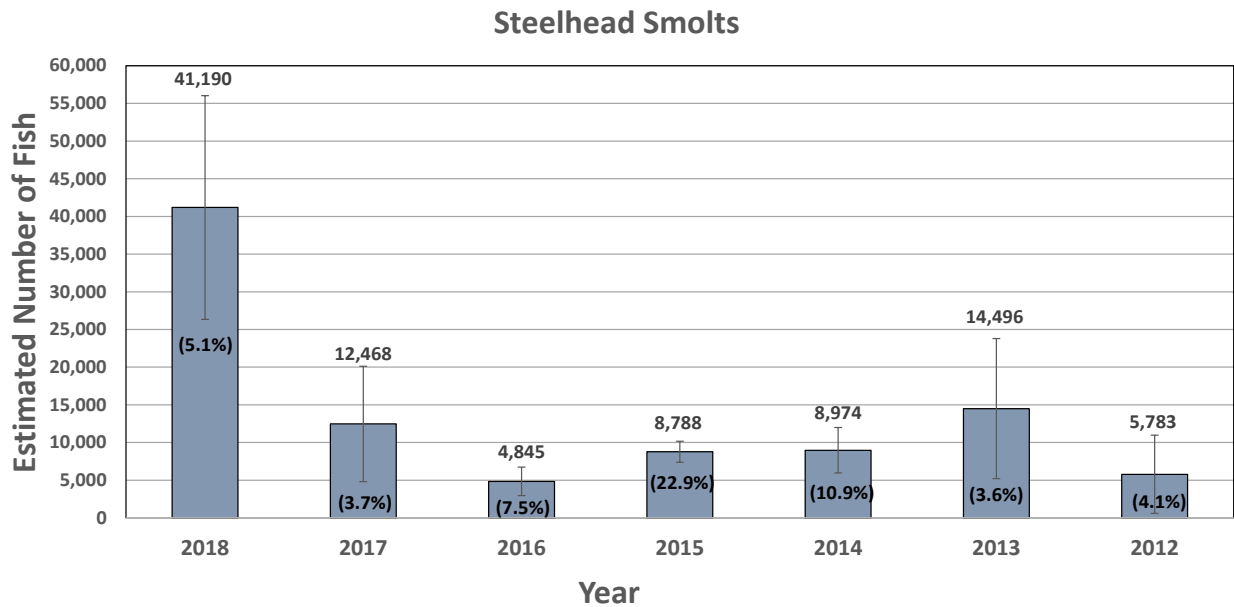
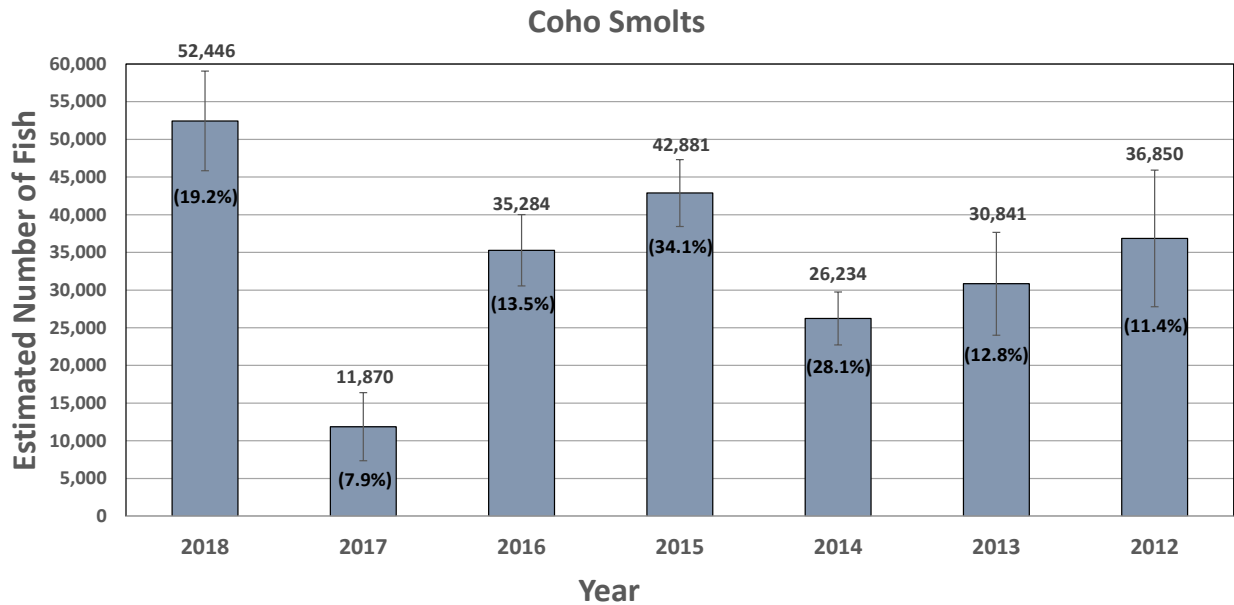


Species	Estimate (\pm CI)	Eff. (%)
Coho Smolts	52,446 \pm 6,615	19.2%
Coho Fry	23,190 \pm 9,539	6.4%
Trout Fry	(24)	
Chum Fry	(20)	6.3%
Chinook Fry	10,786 \pm 4,179	10.3%
Steelhead (\geq120)	41,190 \pm 14,839	5.1%
Steelhead (90-119)	(73)	7.1%
Steelhead (60-89)	(6)	16.7%
Cutthroat (\geq 250)	(30)	
Cutthroat (160-249)	6,829 \pm 3,271	9.6%
Cutthroat (120-159)	1,200 \pm 1,094	11.7%
Cutthroat (90-119)	(22)	20.0%
Cutthroat (60-89)	(2)	50.0%

Clatskanie River (2018 vs. 2017 Comparison)



Clatskanie River (Annual Comparison)



Clatskanie River (Other Species)



Species	Catch
Cottid	615
Stickleback	516
Lamprey Ammocoete	485
Brook Lamprey Adult	424
Peamouth	387
Pacific Lamprey Adult	122
Banded Killifish	105
Redside Shiner	69
Largescale Sucker	51
Northern Pikeminnow	23
Pacific Lamprey Trans	23
Speckled Dace	2
Longnose Dace	1
Whitefish	1
Bluegill	1

Beach Seining



Washington

Columbia River

Trestle Bay
(Fort Stevens State Park)

Tansy Point
Tidal Flats

Astoria High School

Old Youngs Bay Bridge

Oregon

Pacific Ocean

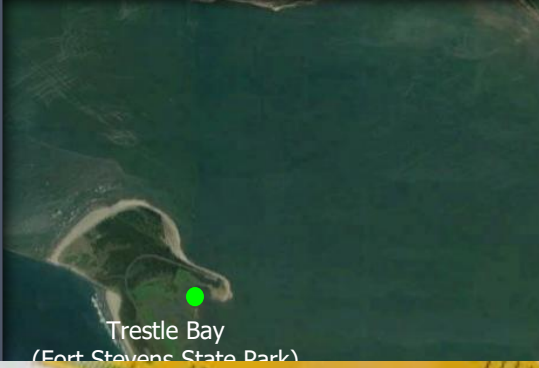
Google Earth

Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2018 TerraMetrics

3 mi



Beach Seining



Location	Dates	Chum	Chinook	Coho	Sockeye
Trestle Bay	4/26, 5/3, 5/10, 5/17	58w	22w, 21h		
Tansy Point	4/19, 5/10	12w, 2h?	10w, 9h	1w	1w
Astoria High School	4/18	1w		2w	
Old Youngs Bay Bridge	5/3				



Acknowledgements

Funding

Pacific Coastal Salmon Recovery Fund (NOAA)
Mitchell Act Funds

ODFW

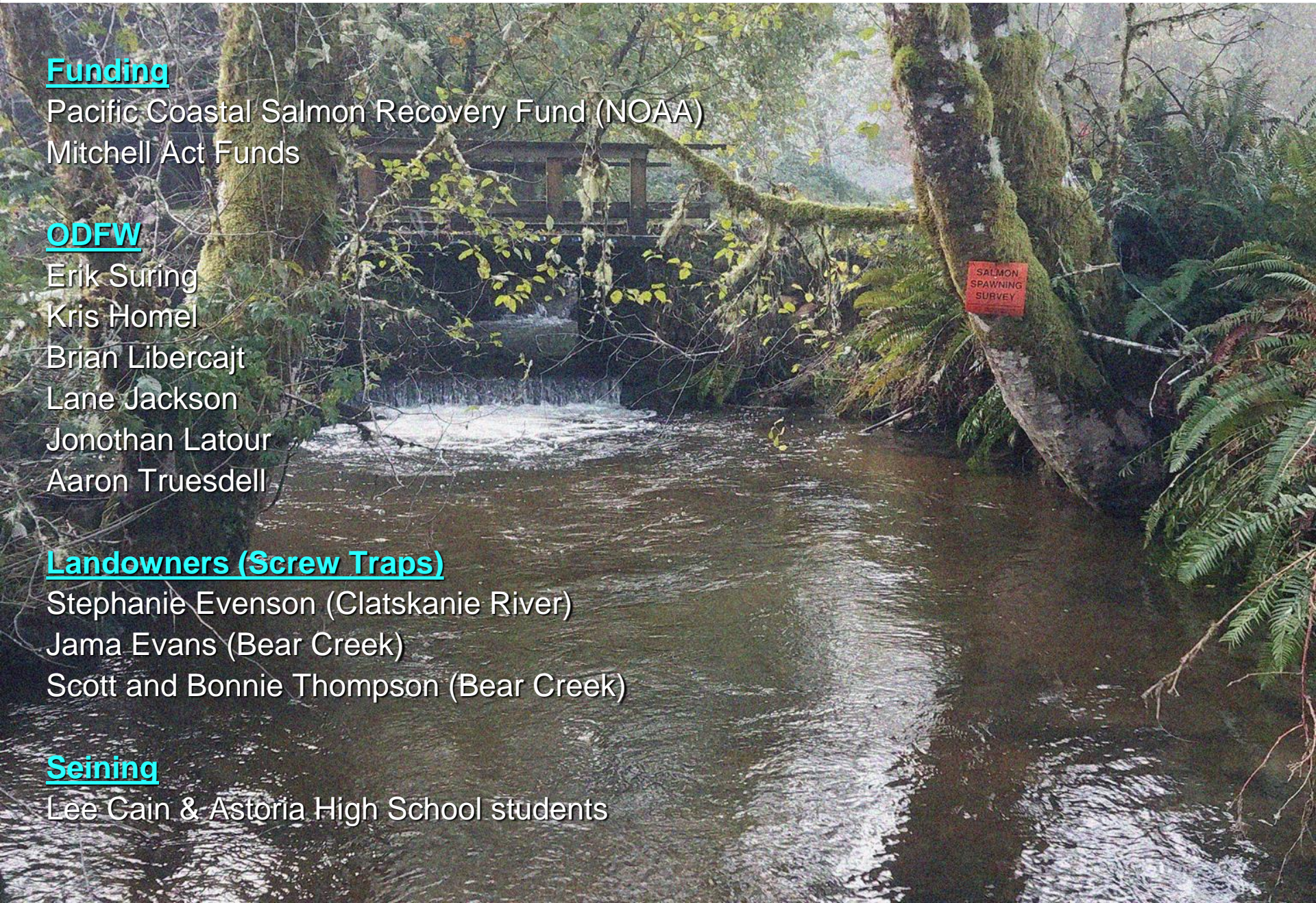
Erik Suring
Kris Homel
Brian Libercajt
Lane Jackson
Jonothan Latour
Aaron Truesdell

Landowners (Screw Traps)

Stephanie Evenson (Clatskanie River)
Jama Evans (Bear Creek)
Scott and Bonnie Thompson (Bear Creek)

Seining

Lee Gain & Astoria High School students



Questions?

We just need a few hundred more of these!



The peamouth keep getting bigger and more abundant!



Karma, mr. cutthroat. Now you know how it feels to be prey in the live box!



Stupid spring tide!

