

Coastal Cutthroat Trout in California: Population Monitoring, Status, and Management



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ANADROMOUS FISHERIES RESOURCE AND MONITORING PROGRAM

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

ARCATA, CALIFORNIA



Coastal Cutthroat Trout Distribution

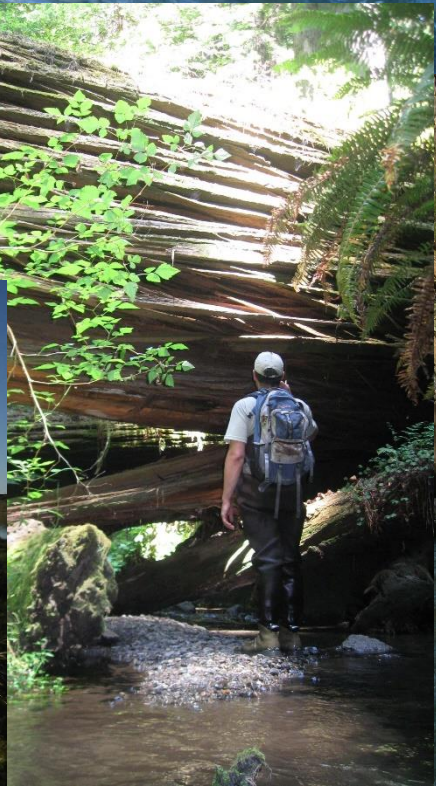


Status

- SONCC ESU- Listing Not warranted; NOAA 1999
- California Species of Special Concern
Documents: 1995, 2015
- US Forest Service
 - Sensitive Species
 - Management Indicator Species
- Threats: Degraded habitat/ water quality, climate (sea-level rise, loss of summer fog, temperature, wildfire), invasive species



Stream Habitats



Lagoon Habitats



Coastal Lagoon and Wetland Distribution

	Waterbody	Area (Sq. Hectares)
Gerstung 1997	Big Lagoon	603
	Stone Lagoon	234
	Espa Lagoon	2
	Lagoon Creek Pond	2
	Lake Earl/ Tolowa	1034
2018	Marshall Pond	6
	Crescent City Marsh	6
	Total	1887



Fishery Management

Fishing Regulations

Cutthroat Trout recognized in regulations in 2000

- Last Saturday in May to August 31
- >10 inches minimum
- >14 inches minimum size (Stone Lagoon)
- 2 Fish daily bag limit

Table 4. South Kelsey Trailhead angler survey box catch summary (2017-2022). Rainbow Trout/steelhead, wild Rainbow Trout/steelhead, and hatchery Rainbow Trout/steelhead were grouped together.

Year	Form Count	Rainbow Trout/steelhead*	Coastal Cutthroat Trout	CPUE (trout catch/hours fished)
2017	8	29	6	1.30
2018	10	37	39	2.71
2019	9	68	22	2.12
2020	8	27	3	1.36
2021	14	139	5	2.20
2022	13	83	12	1.96

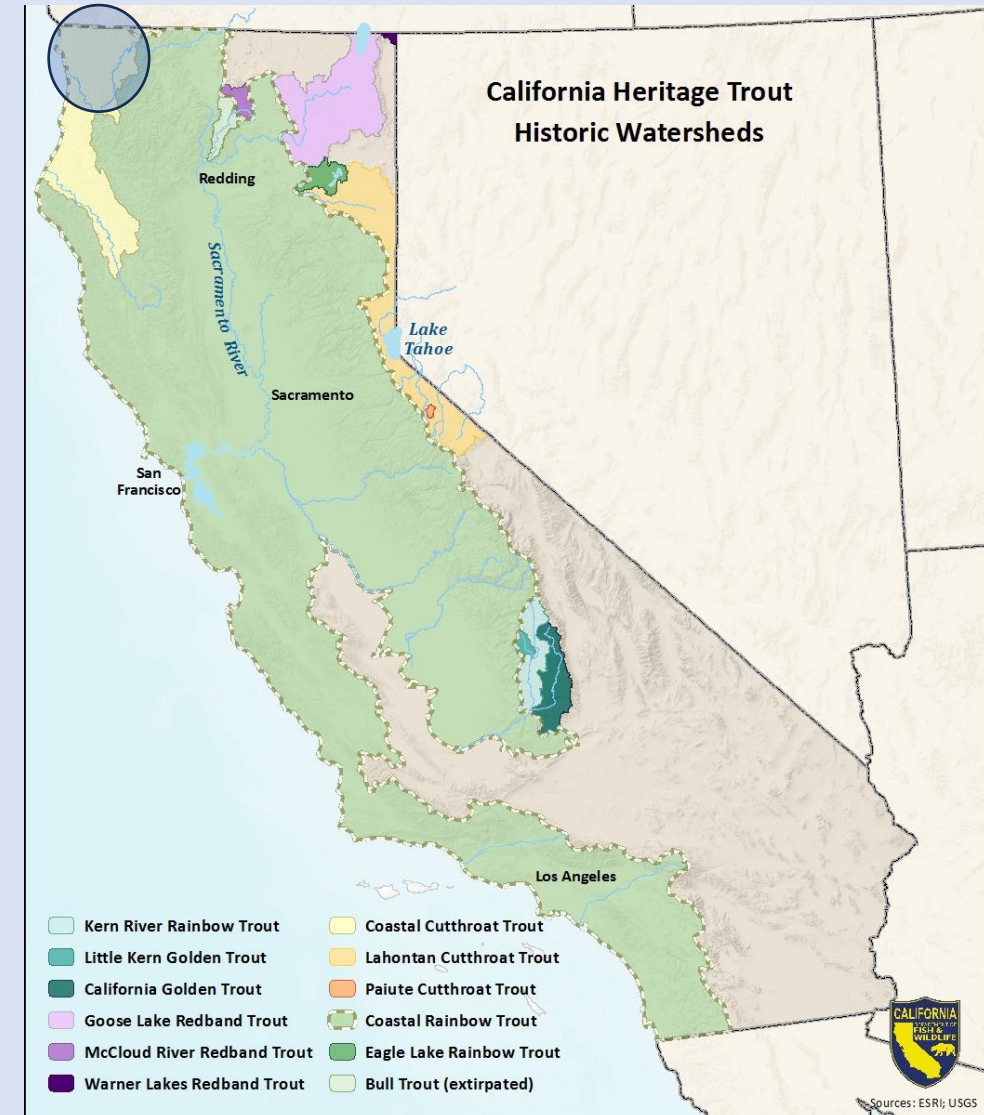


Heritage and Wild Trout Program

Waters designated by the California Fish and Game Commission

- Support strains of native trout
- Open to public angling
- Protect and restore native trout and their habitats
- Develop management plans
- Conduct monitoring to inform management and angling regulations

- South Fork Smith River designated 2016-2018
 - 142 stream miles



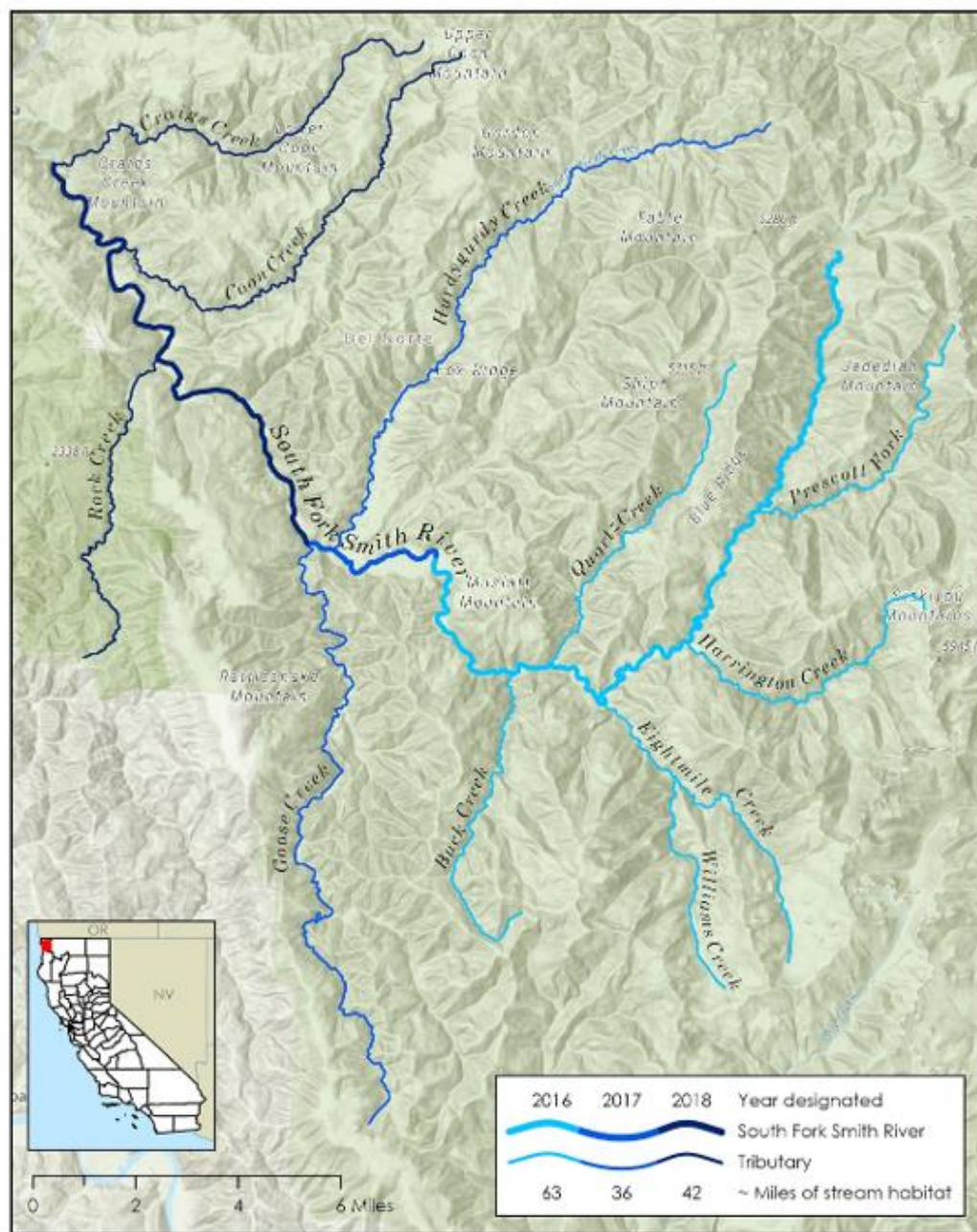


Figure 1. Map of the South Fork Smith River including the 2016, 2017, and 2018 Wild and Heritage Trout designations, Del Norte County, California. The total designation includes approximately 142 miles of the South Fork Smith River and associated tributaries (map created by CDFW, R1 Coast, Charlotte Peters).

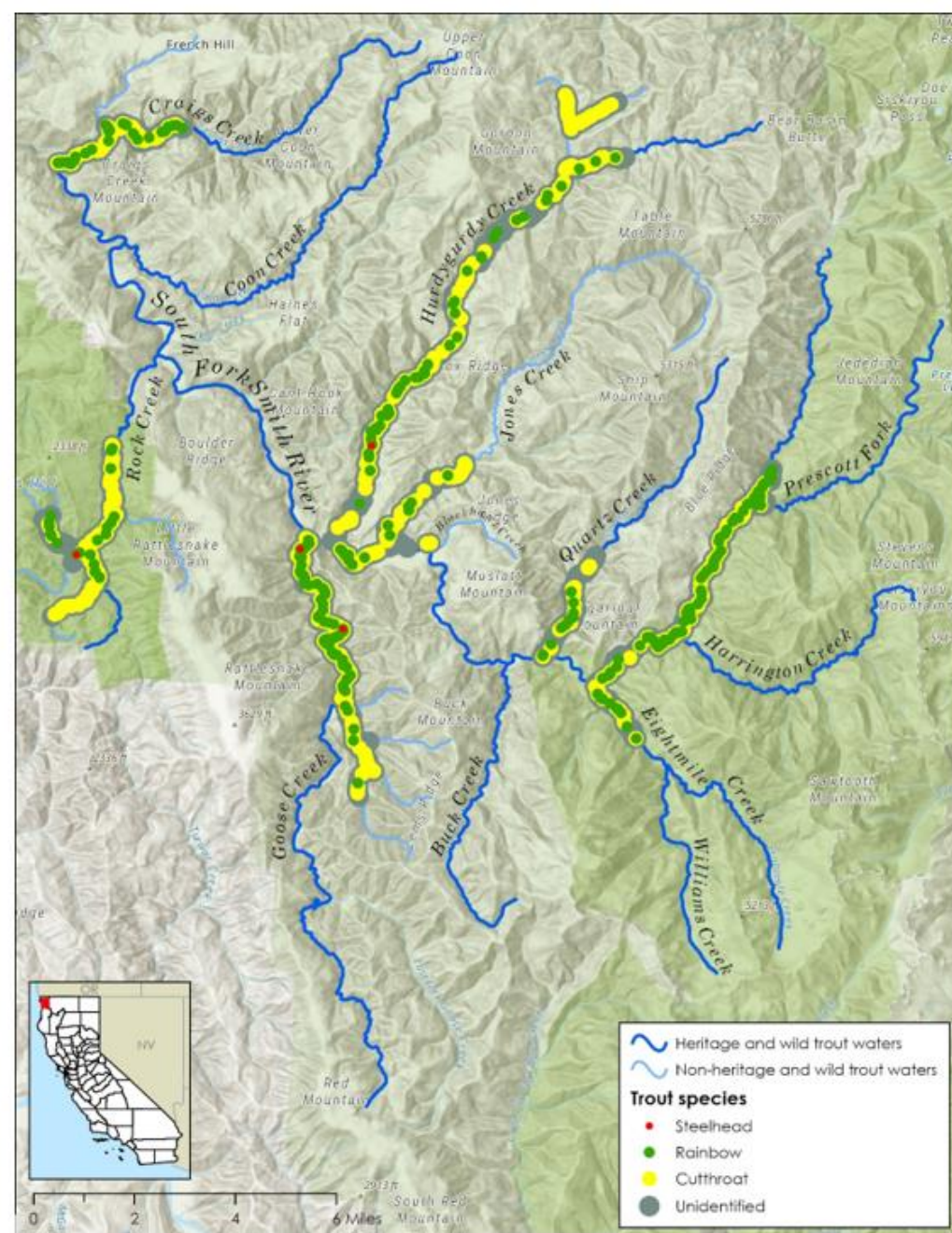


Figure 3. Summer trout distributions in the South Fork Smith River based on annual randomly selected reach observation surveys defining population spatial structure (2014-2022) (map created by CDFW, R1 Coast, Charlotte Peters).

South Fork Smith River:

Heritage and Wild Trout Program

Angling regulations

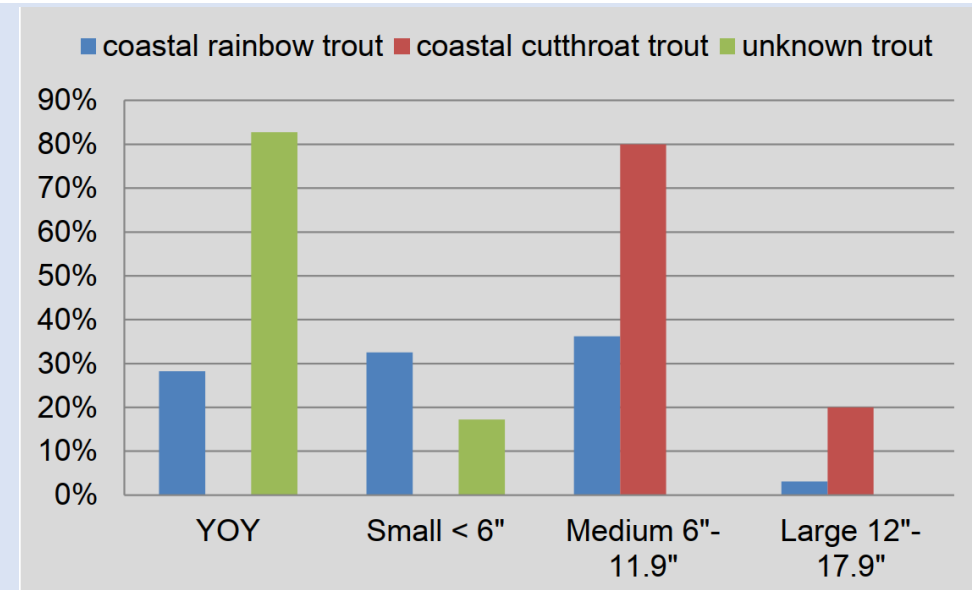
South Fork Smith River (Heritage and Wild Trout Section):

Body of Water	Open Season and Special Restrictions	Daily Bag and Possession Limit
Craigs Creek to Jones Creek.	Fourth Sat. in May through Apr. 30. Only artificial lures with barbless hooks may be used from the fourth Sat. in May through August 31. Only barbless hooks may be used from Sep. 1 through Apr. 30.	2 Cutthroat Trout minimum size limit: 10 inches total length.
Above the mouth of Jones Creek.	Fourth Sat. in May through Oct. 31. Only artificial lures with barbless hooks may be used.	2 Cutthroat Trout minimum size limit: 10 inches total length.



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Smith River Volunteer Adult Salmonid Surveys

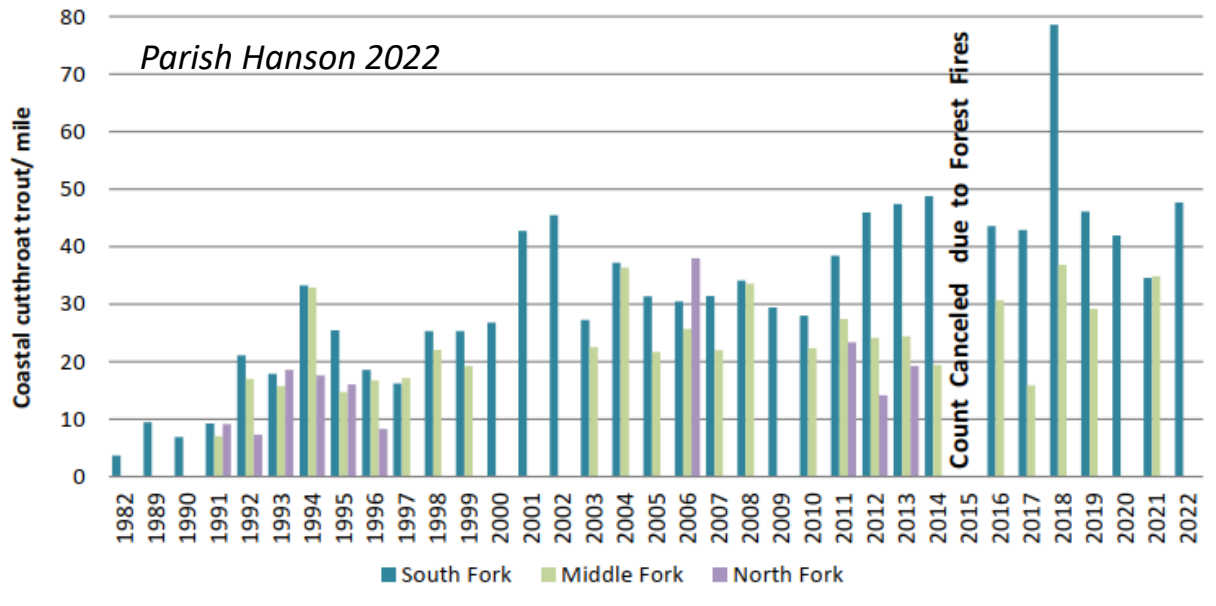


Figure 3. Density of total Coastal Cutthroat Trout counted per mile based on miles of river surveyed in the South Fork, Middle Fork, and North Fork Smith River from 1982 to 2021. Surveys were not conducted on all forks every survey year, refer to Appendix A, B, and C for survey effort.

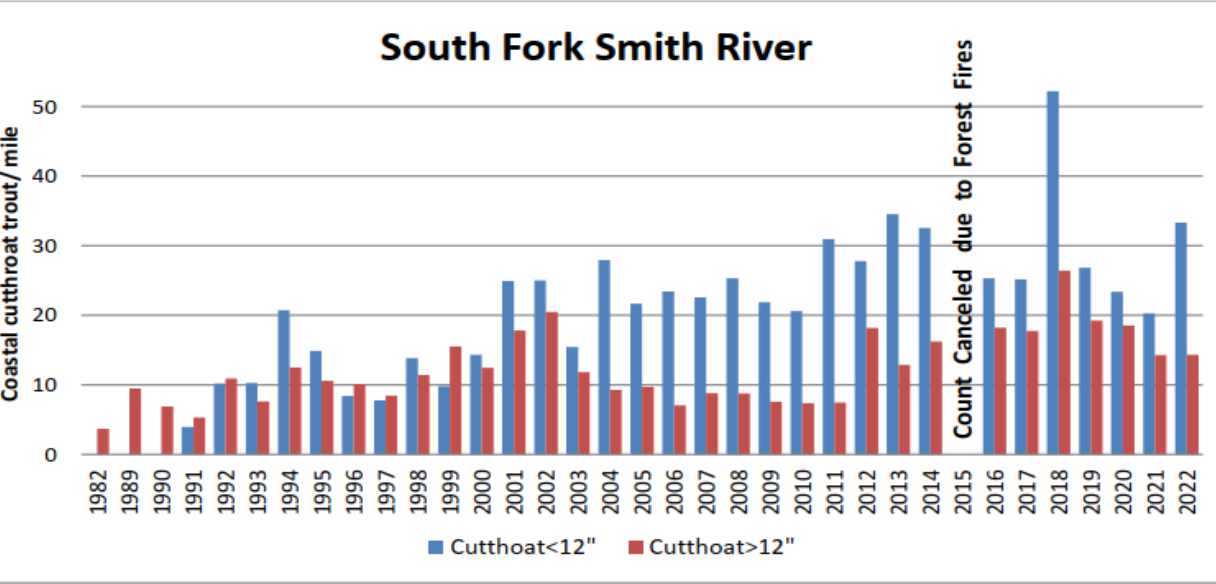
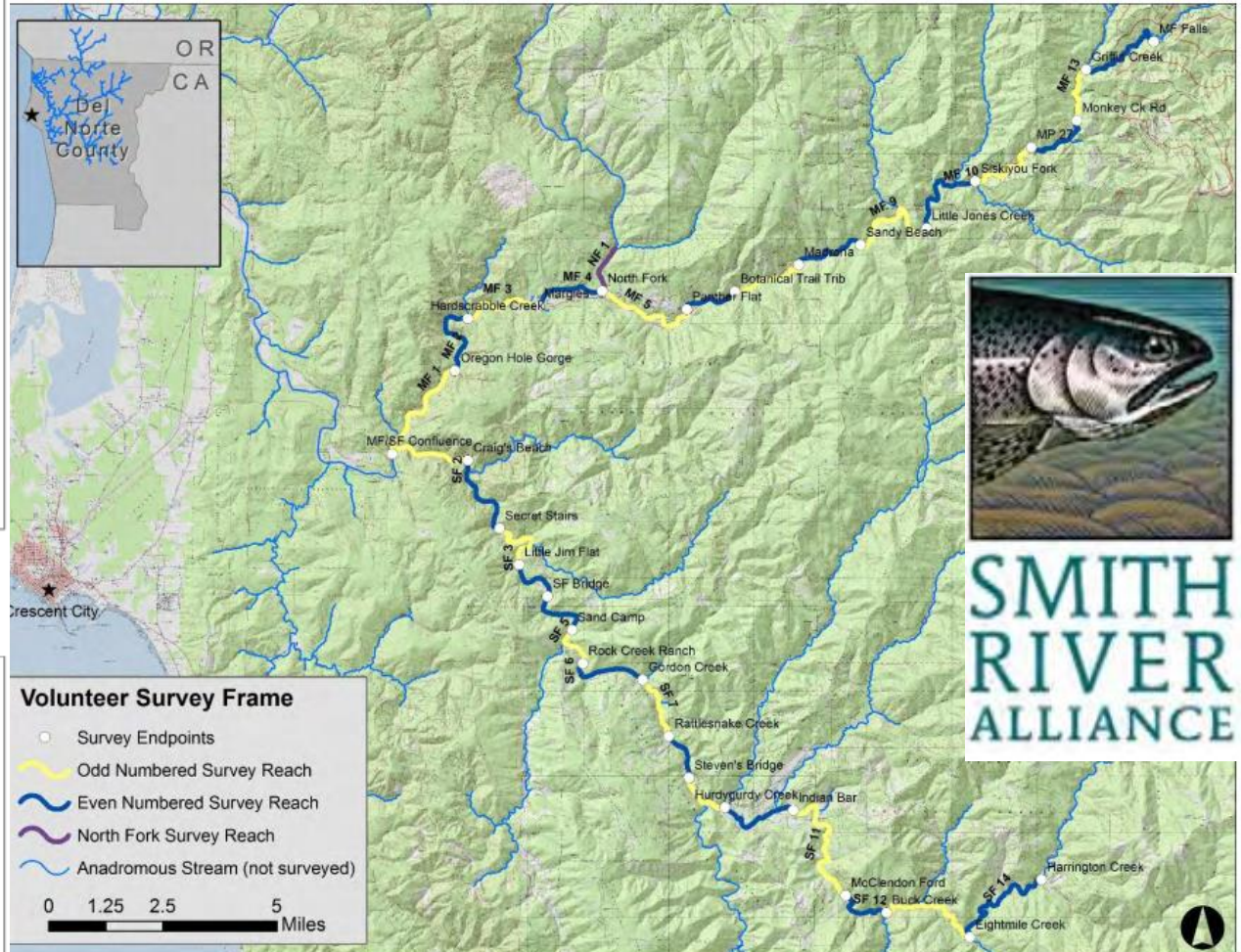
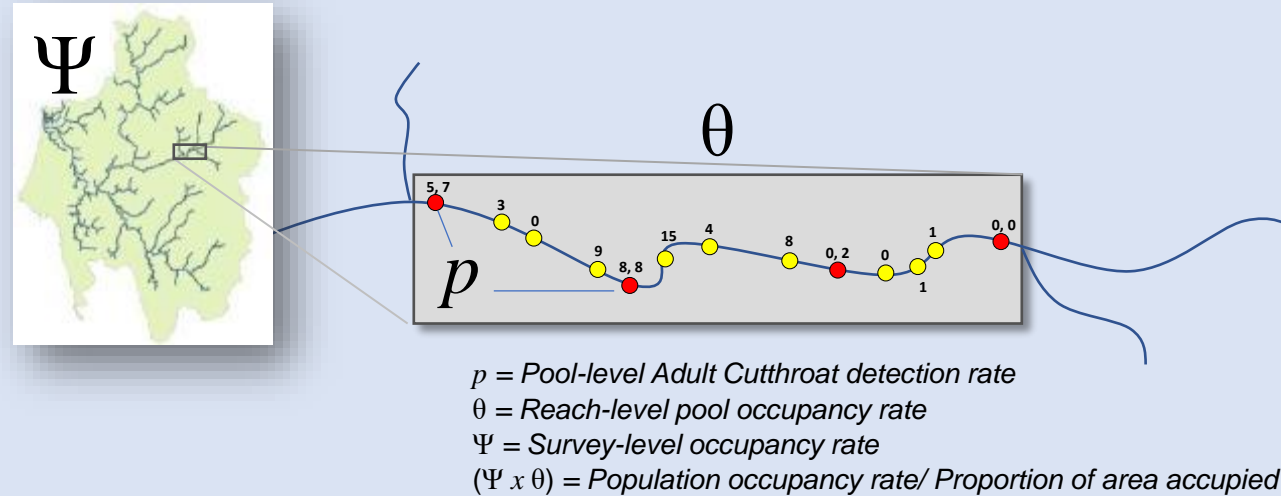


Figure 4. Density of small (<12") and large (>12") Coastal Cutthroat Trout based on counts per mile of river surveyed on the South Fork Smith River from 1982 to 2022.

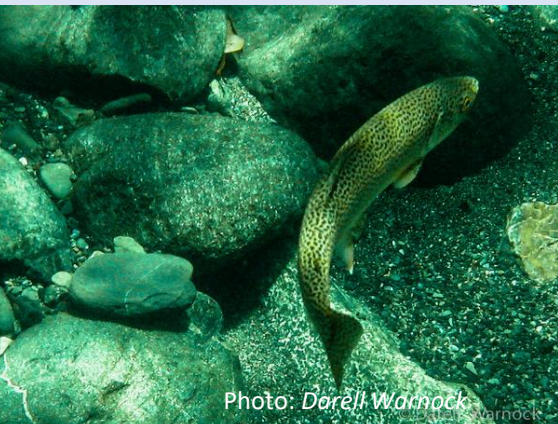


Adult Coastal Cutthroat Population Spatial Structure

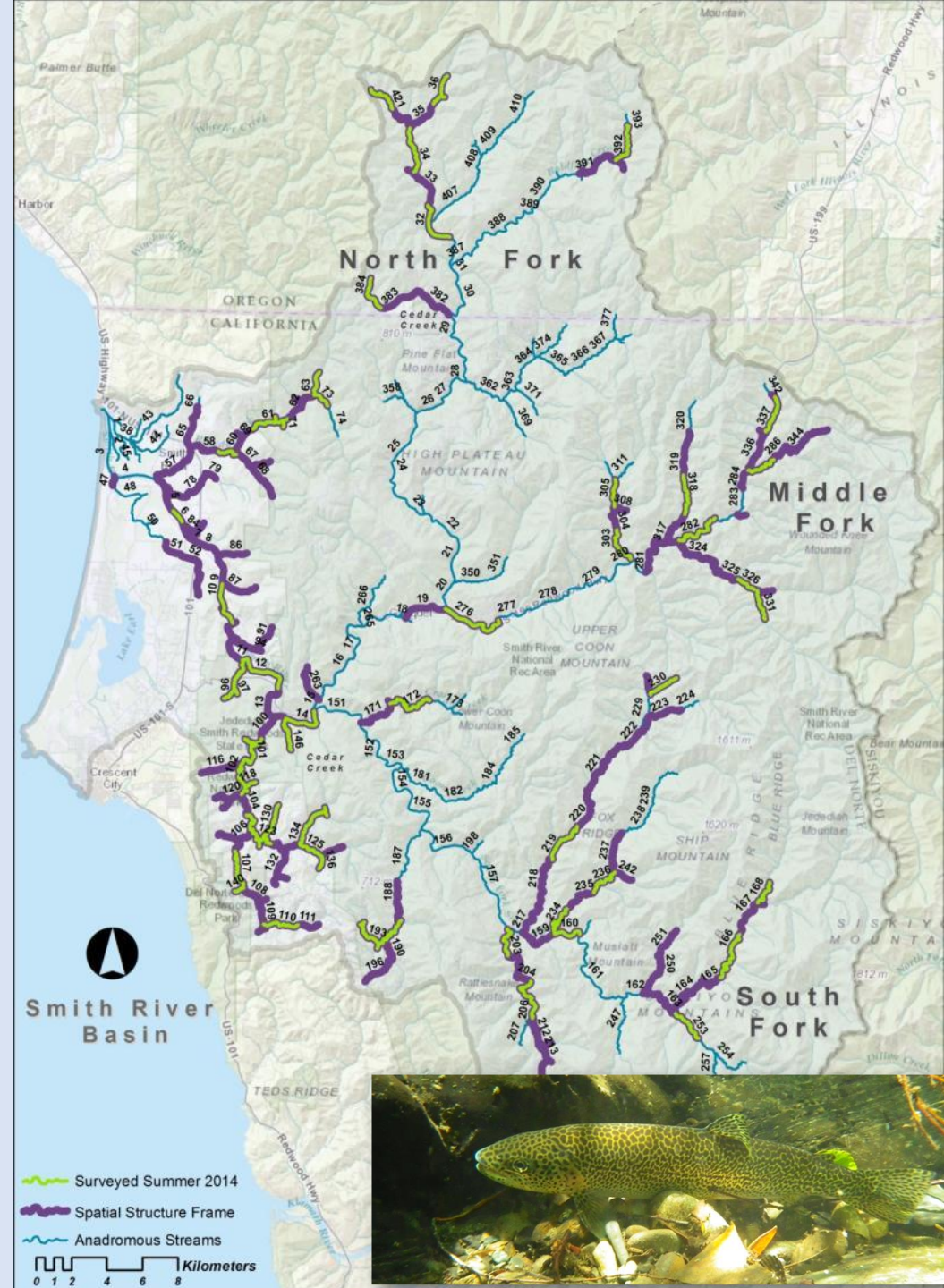
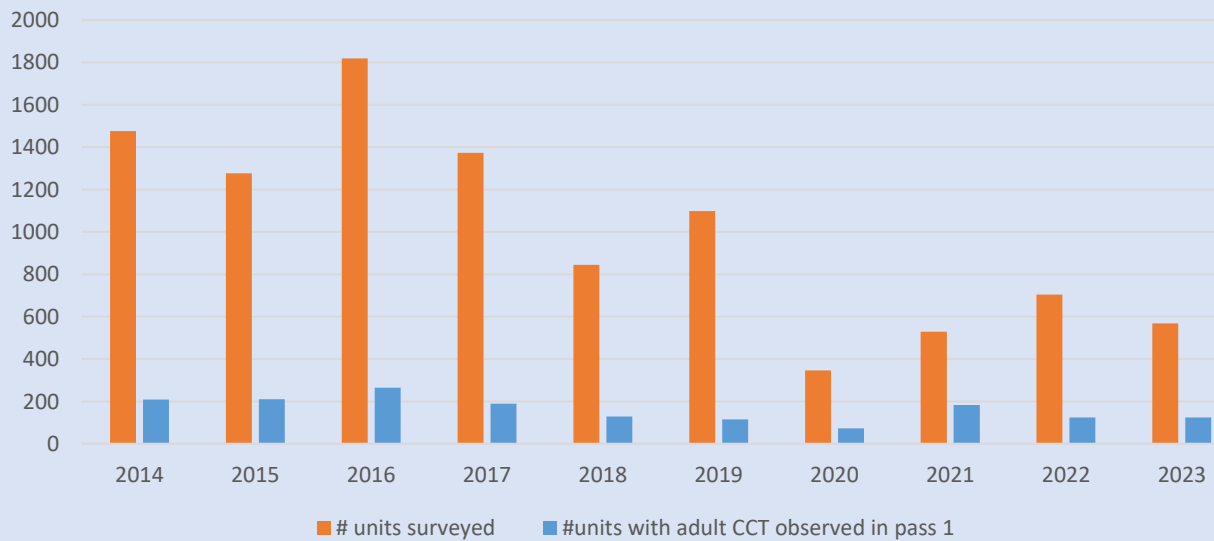
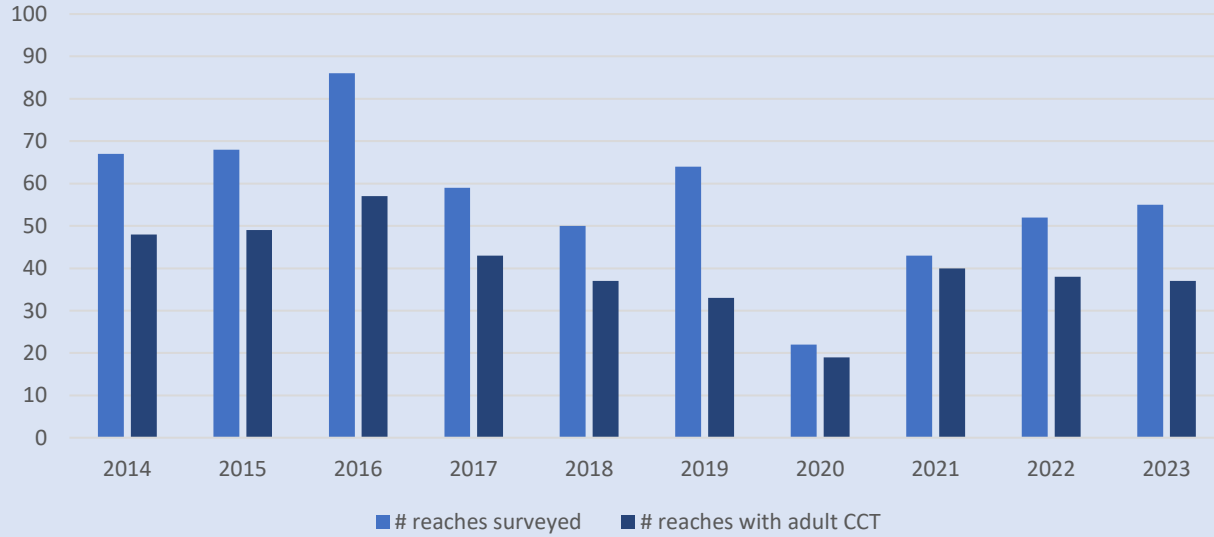
Level of Inference: Multi-scaled occupancy models



Nichols. J. , L. Bailey, A. O'Connell, Jr., N. Talancey, E. Campbell Grant, A. Gilbert, E. Annand, T. Husband, and J. Hines. 2008. **Multi-scale occupancy estimation and modeling using multiple detection methods.** Journal of applied ecology 45: 1321-1329.



Spatial Structure Effort

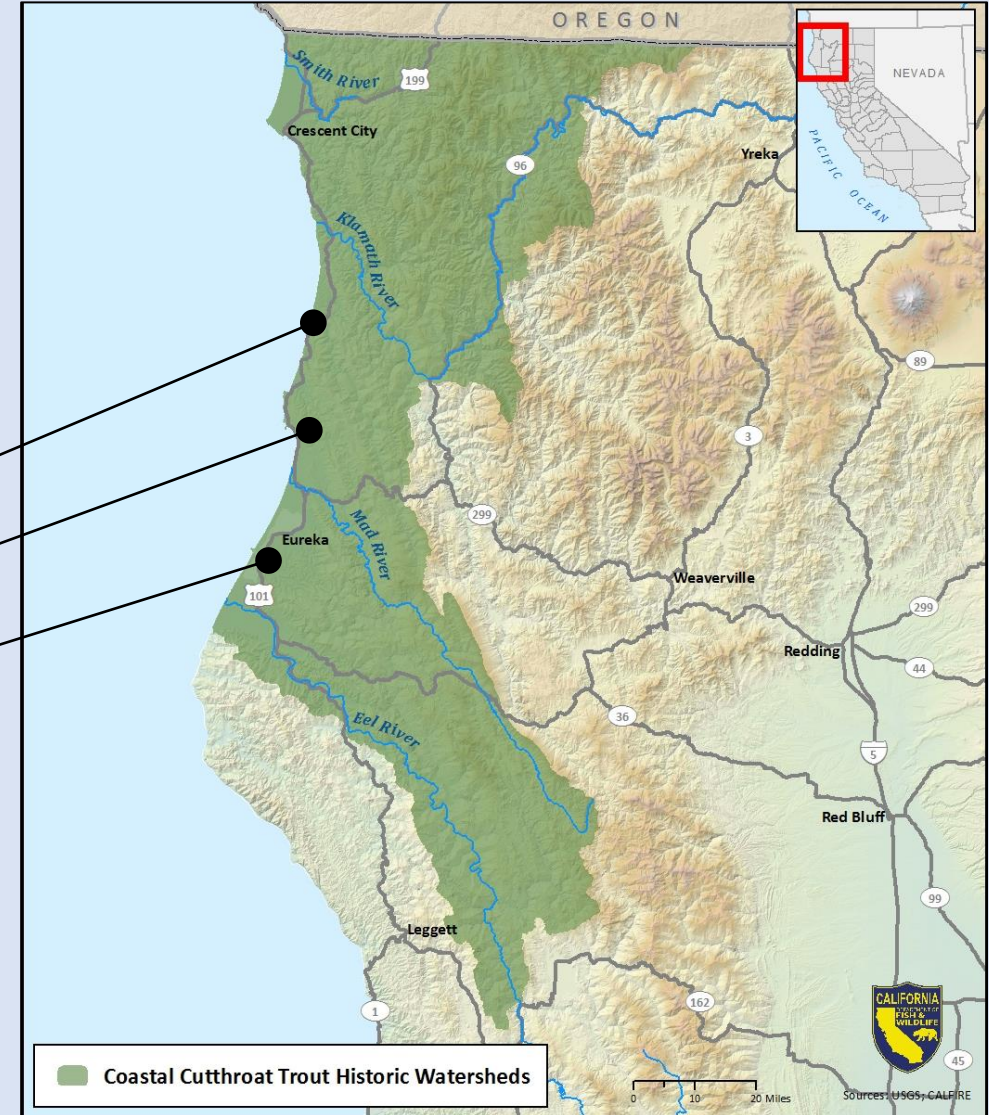


Monitoring Stations

Metrics: *Productivity and Diversity of Life Histories*



Subbasin	Years	Outmigrant Trap
Prairie Creek	2011- Present	Yes
Little River	1999-Present	Yes
Freshwater Creek	2006-Present	Yes



Parr-Smolt-Resident



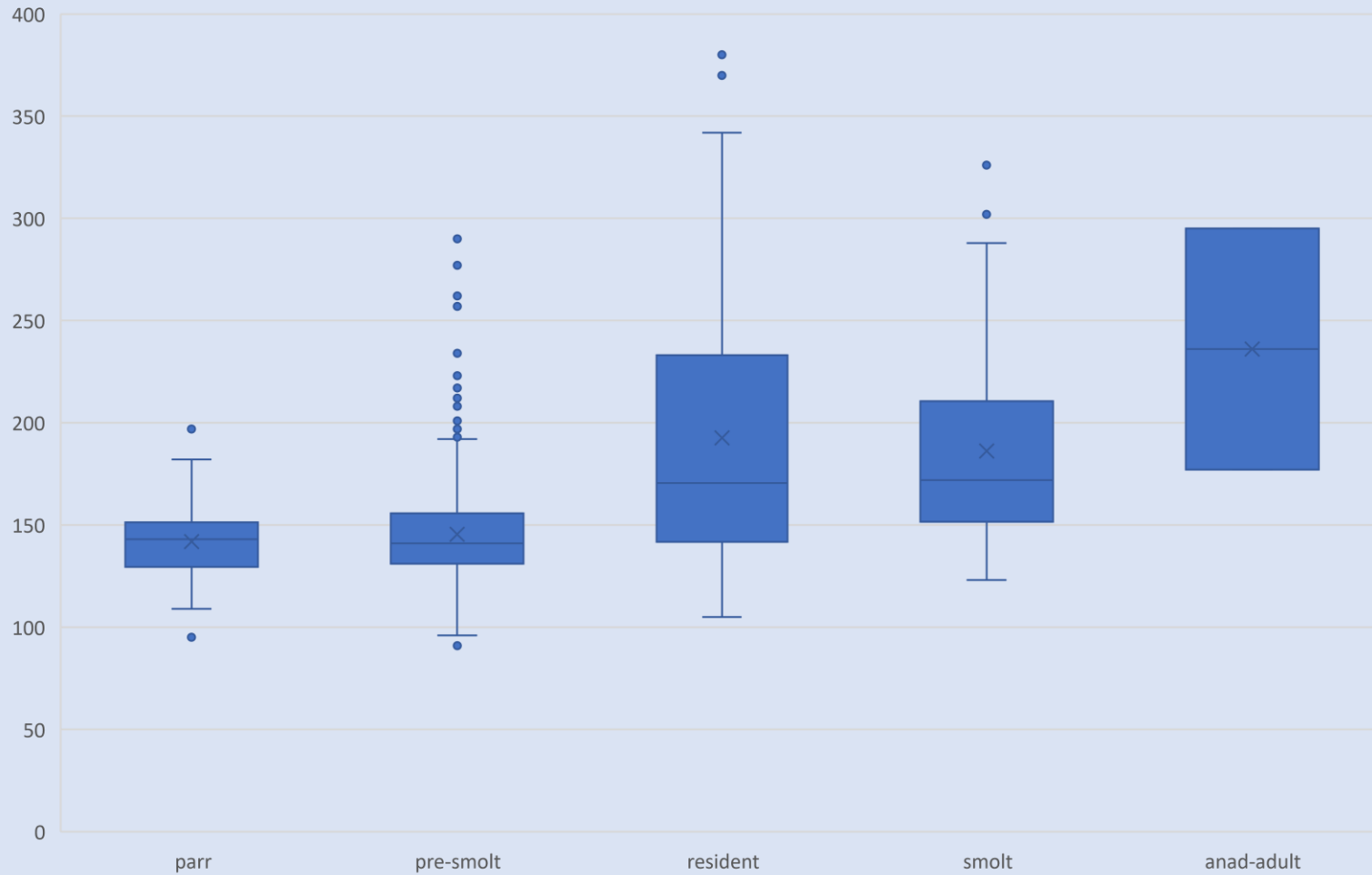
Photo credit:
Green Diamond Resources
CDFW

Parr-Smolt-Adult Gradient

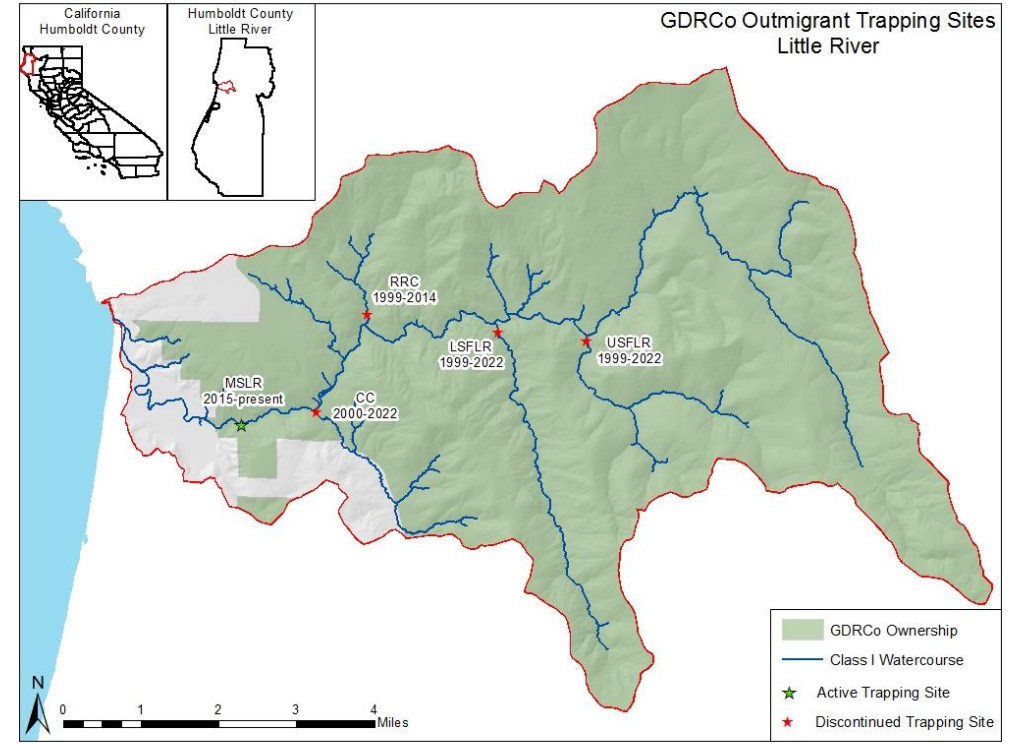
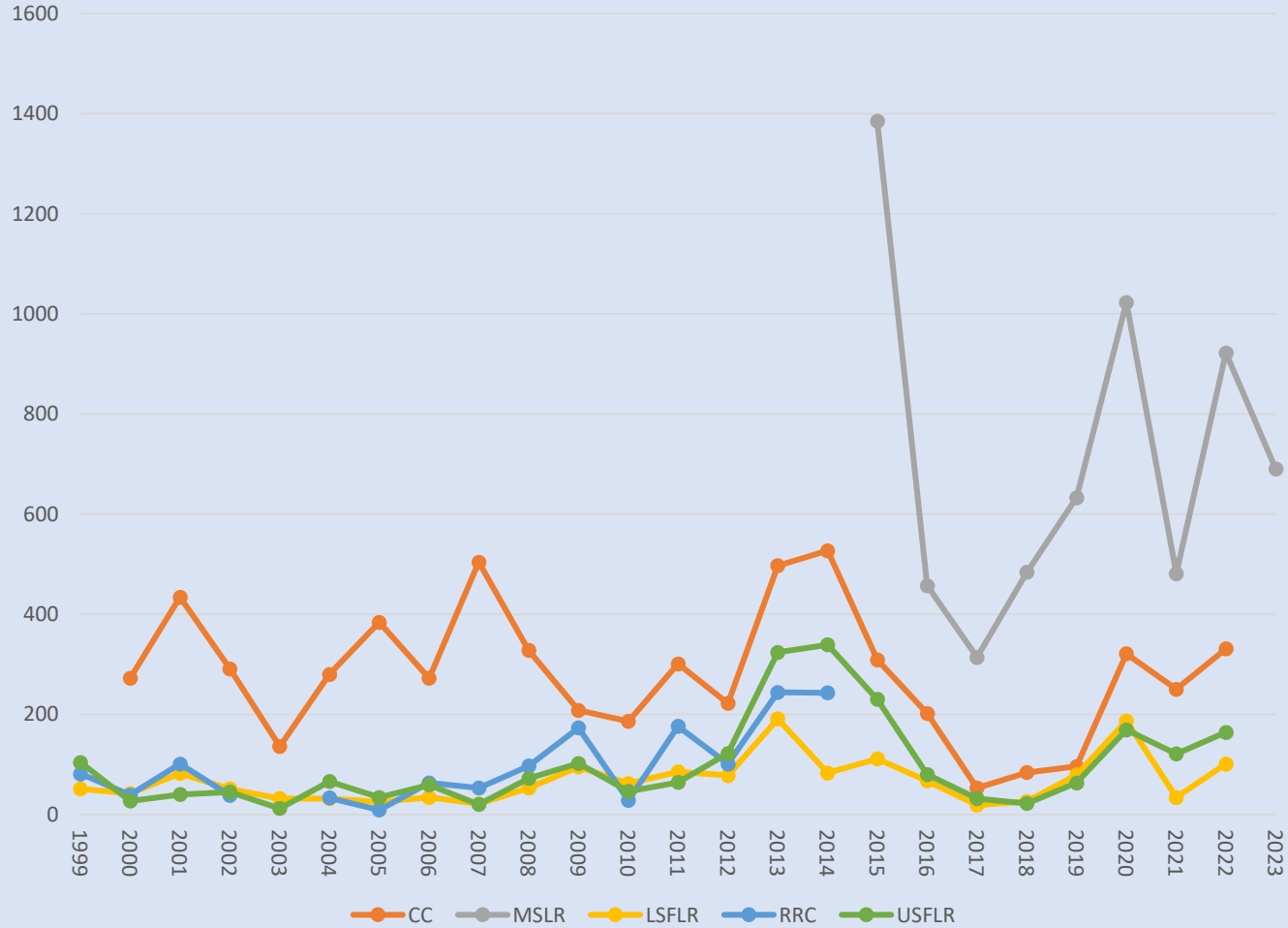


Migrant stages

Freshwater Creek Cutthroat
Fork length by Migrant stage



Little River Cutthroat age 1+



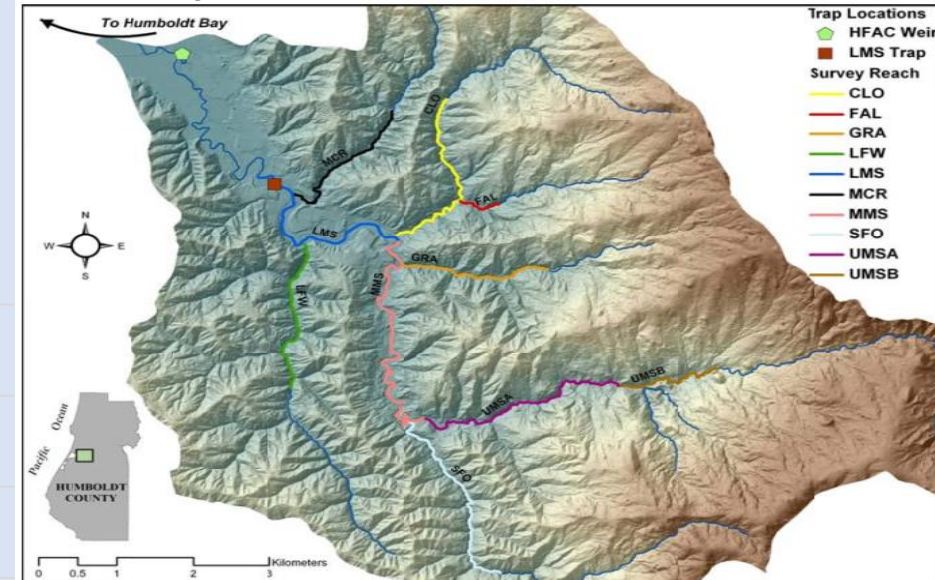
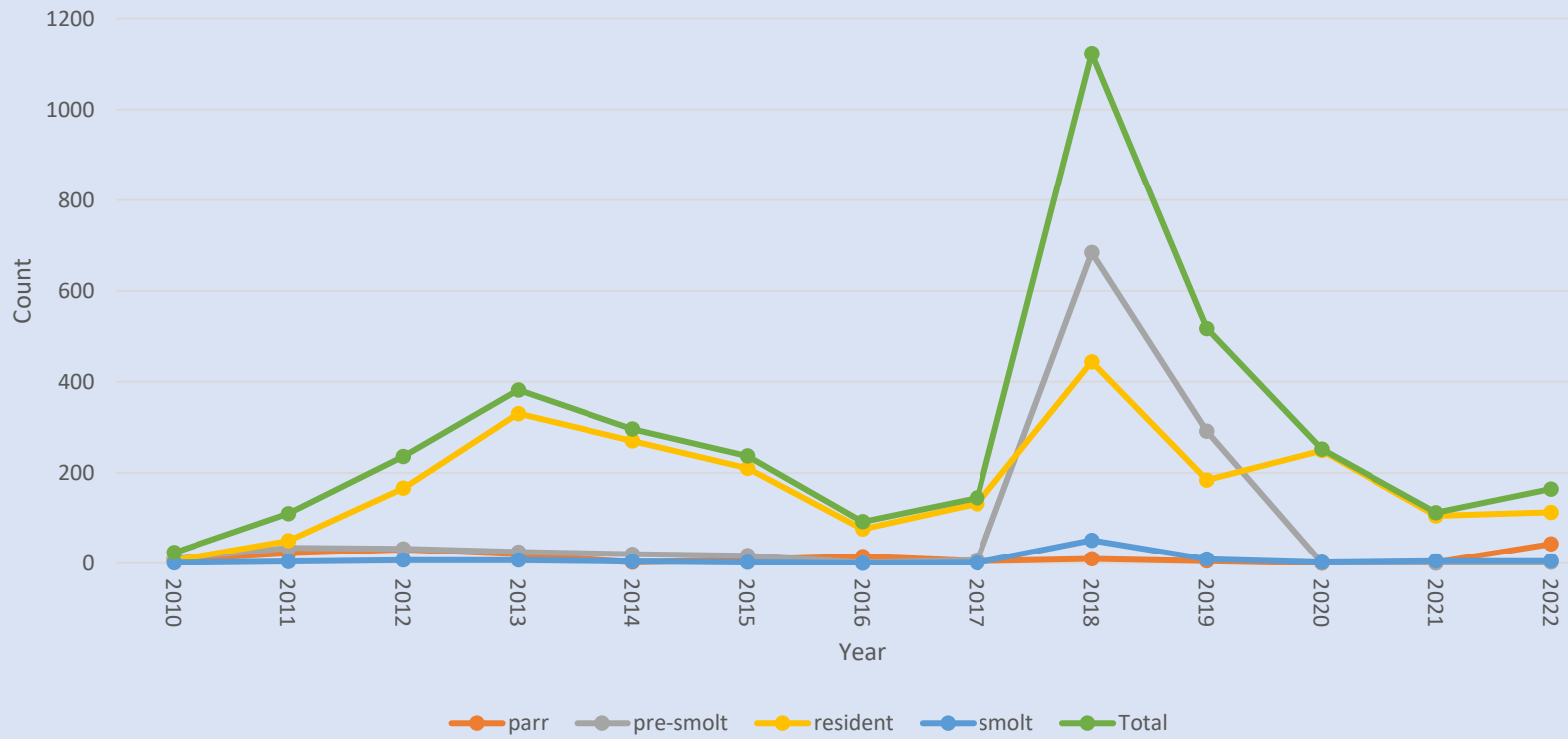
Data Courtesy of Green Diamond Resource Company



GREEN DIAMOND

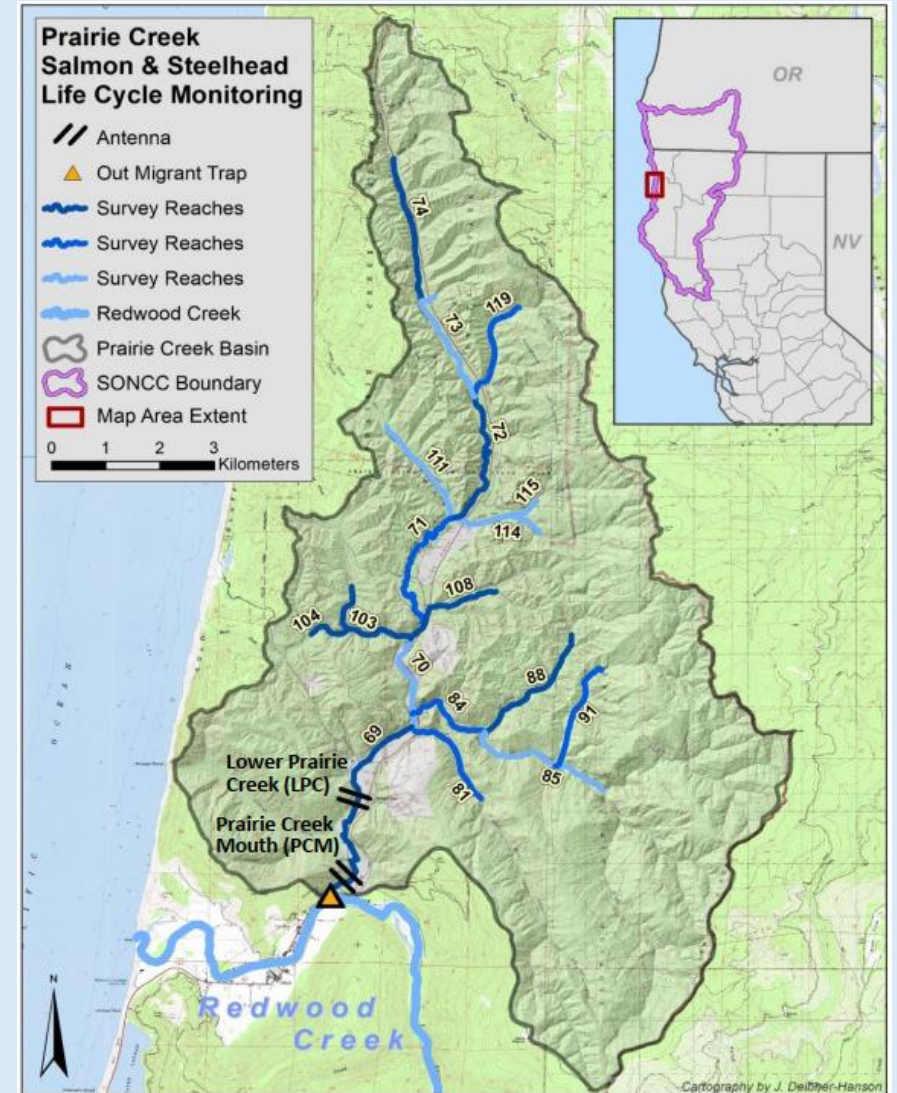
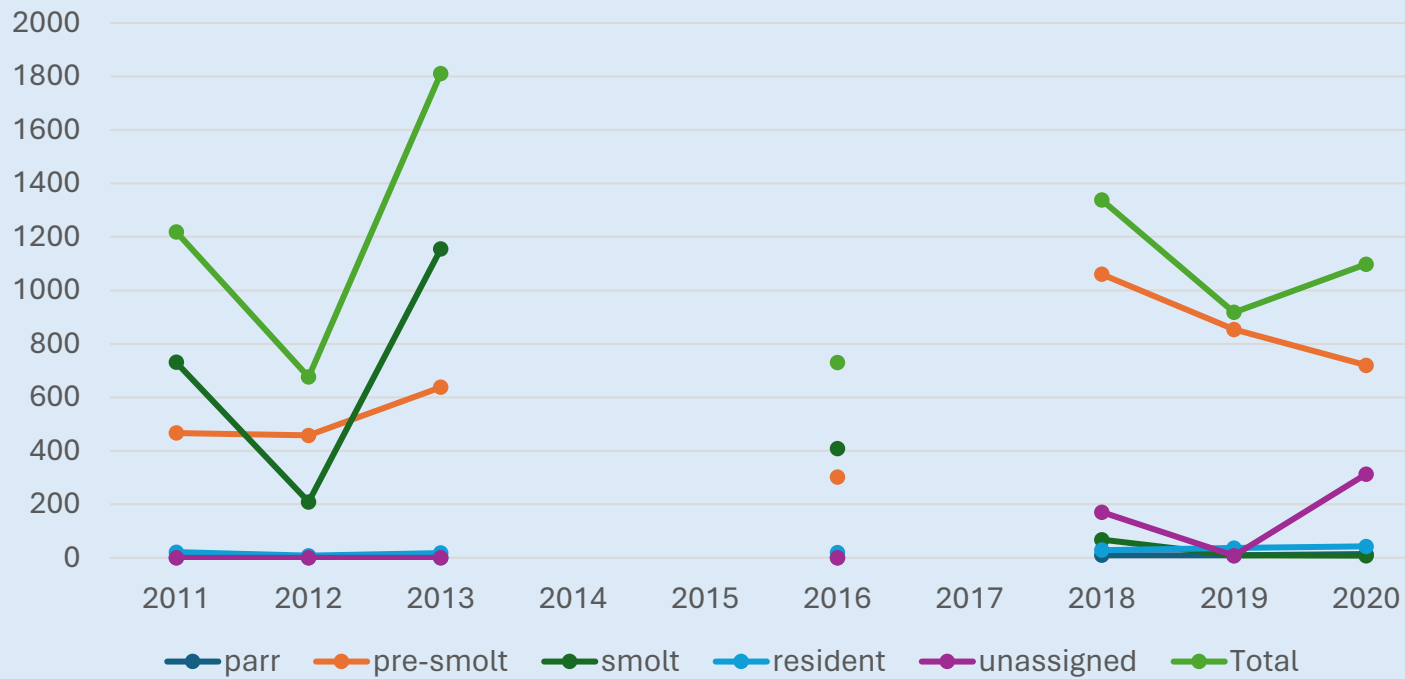
Freshwater Creek, Humboldt Bay

Freshwater Creek Cutthroat
2010-2022



Prairie Creek, Humboldt County

Prairie Creek Cutthroat
2011-2020



Restoration of estuaries



Flood Plain Restoration



Reconnecting channels



CALIFORNIA TROUT



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