

Rogue-Sixes Hoop Trap Results 2015-2017

Project Partners: Lower Rogue Watershed Council (LR Council)
South Coast Watershed Council (SC Council)
Curry Soil and Water Conservation District (Curry SWCD)
OR Department of Fish and Wildlife (ODFW)

Project Funding: Oregon Watershed Enhancement Board
Pacific Marine and Estuarine Partnership

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Summary

The Curry SWCD, Councils, and ODFW's Gold Beach District deployed hoop traps on tributaries to the lower Rogue River and Sixes River in 2015 and 2017, respectively, to monitor juvenile outmigration. In May 2015 traps were deployed in the lower Rogue River on Ranch Creek and Edson Creek to: (1) assess winter rearing, and (2) assess coho spawning. In March 2017 a trap was deployed in the Sixes River on Sullivan Gulch to evaluate winter rearing post-implementation of a stream channel and wetland reconstruction project. Trap results are included in this report.

Background

The hoop traps used in this monitoring project are non-mechanical, solid frame structures with rigid nets, which were constructed using a template that ODFW deploys on small, low gradient streams in the upper Rogue valley. Between 2012 and 2014 these traps were deployed on tributaries to the Elk and Sixes rivers, to evaluate winter rearing. The traps proved to be an effective and efficient way to evaluate fish use and make general observations about productivity and outmigration patterns; with a statistically viable sampling plan, the traps could also be used to document trends in population metrics. For this monitoring project the traps were deployed to make general observations.

Ranch Creek and Edson Creek are small subwatersheds on the north side of the Rogue River estuary that encompass a mixture of ranchland, timberland, and rural residential parcels. The upper watersheds provide well-suited spawning habitat for coho, steelhead, and cutthroat, and the lower stream reaches provide winter rearing habitat, particularly where the streams cross the Rogue River floodplain. Over the past ~20 years projects have been implemented to reduce upland sediment delivery, reduce stream temperatures and enhance riparian habitats, remove fish passage impediments, and improve the character of instream habitat. Previous fisheries monitoring conducted by ODFW and the Councils have documented fish use, but these data sets are incomplete, particularly with regard to coho spawning and winter rearing. The hoop traps were deployed in 2015 to further evaluate the presence of coho and other fish species in these streams.

Sullivan Gulch is a small subwatershed of the Sixes River estuary that is predominately fed by groundwater and encompasses an approximate 300 acre wetland complex on the historic Sixes River floodplain. In 2015 the Curry SWCD and its partners implemented a comprehensive

stream channel and wetland reconstruction project on 40 acres of the Sullivan Gulch bottomlands. The project took place between the river and the Cape Blanco State Park access road, and included a segment of deeply incised ditch channel (Sullivan Gulch) that was impeding juvenile fish migration and dewatering wetlands on the north side of the road. In 2012 and 2013 hoop traps were deployed in the Sullivan Gulch ditch channel, and in a tributary on the north side of the estuary called Greene Creek that was monitored to establish a control site for the Sullivan Gulch project. In 2017 a trap was deployed on the reconstructed Sullivan Gulch channel, but limited funding prevented the deployment of a trap on Greene Creek.

Hoop Trap Deployment – Ranch and Edson Creek

Traps were deployed on Ranch Creek and Edson Creek in early May 2015 (see maps). The Ranch Creek trap site was located near the stream's confluence with the Rogue River estuary, where it caught outmigrating fish from the entire subwatershed. The Edson Creek trap site was located upstream of the Rogue River floodplain, in a segment of channel that is relatively high gradient and confined by hillslopes. Ideally the trap would have been located near the stream's confluence with the river, where it could catch outmigrating fish from the lowest reach of Edson Creek, but the slough channel morphology in that reach was unsuitable for trapping.

We intended to deploy the traps between late March and early May, but persistent low flows throughout the spring of 2015 led us to continually postpone deployment. By early May it was apparent that optimal flows were unlikely to occur, but we reasoned that it was worthwhile to still develop and test the trap sites for future use. Based on this rationale both traps were deployed on May 2, 2015, and operated until flows dropped below functional thresholds.

Operating the traps demonstrated that both sites are feasible trapping locations, and although the data was compromised by low flow conditions, it did provide some insight into fish use. The following observations were made:

- Coho overwinter as pre-smolts in Ranch Creek and upper Edson Creek
- Coho spawning in the winter of 2014-15 was minimal in Edson Creek, and spawners were potentially absent from Ranch Creek
- Large Scale Sucker juveniles overwinter in upper Edson Creek
- Red Sided Shiners utilize Ranch Creek and upper Edson Creek
- Lamprey ammocoetes are present in Ranch Creek
- Chinook juveniles are present in Ranch Creek, which may indicate successful spawning
- Bull frogs are present in Ranch Creek
- Pike Minnow are present in Edson Creek

Hoop Trap Deployment – Sullivan Gulch

A hoop trap was deployed on Sullivan Gulch in late March 2017 to evaluate the restoration project that was implemented in 2015. The trap was located downstream of a segment of engineered rock channel that provides grade control on the upstream constructed channels and wetlands. The site was chosen because it best replicates the geographic coverage of the pre-implementation trap site, which was located in a reach of the Sullivan Gulch ditch channel that was filled; and the 2017 trap site demonstrates fish migration through the engineered rock channel, which a primary objective of the project design. The 2016-17 water-year was

exceptionally wet, and during the period of trap deployment Sullivan Gulch was often at or near bankfull discharge. High flows probably decreased trap efficiency, but were optimal for outmigration. The trap was only deployed through mid-April because of limited staffing, so the data only documents a relatively small period of outmigration and most likely does not include the period of peak migration. Given the short deployment period the 2017 data does not provide a good projection of overall productivity, but there are some insights that can be made when comparing it to the 2013 pre-implementation data, which spans a similar period of outmigration.

- Coho smolt outmigration is comparable to between the two data sets
- Large Scale Sucker outmigration (adults and juveniles combined) was greater in 2017
- Cutthroat and Steelhead were present in similar numbers between the two data sets
- Redlegged Frogs were less abundant in 2017
- Sculpin were present in 2017 by more than an order of magnitude over the 2013 data

Discussion

Neither the 2015 nor the 2017 trap deployments provided comprehensive outmigration data, and as such, neither documented relative productivity. With that said, each trap deployment did yield valuable insights into fish use in these small, estuarine subwatersheds; particularly with regard to overwintering. The Ranch Creek data demonstrated that coho use the system for winter rearing, at least in low numbers, and that the subwatershed also supports one or more life stages for Chinook. The Edson Creek data demonstrated that coho overwinter upstream of the Rogue River floodplain, which should place emphasis on the low gradient, unconfined stream reaches and adjacent riparian wetlands that exist upstream of the trap site; and the data highlights that Edson Creek provides habitat for non-game species (Large Scale Suckers, Red Sided Shiners), as well as invasive species (Pike Minnow). And the Sullivan Gulch data suggests that the project site has sufficiently recovered from construction to enable comparable overwintering as pre-implementation conditions, and at least for sculpin, the project may have significantly improved habitat conditions.

For more information contact:

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Ranch Creek Hoop Trap Site - Spring 2015

Legend
📌 Ranch Creek Trap Site 2015

Write a description for your map.



Ranch Creek Trap Site 2015



Edson Creek Hoop Trap Site - Spring 2015

Legend
📌 Edson Creek Trap Site

Write a description for your map.



Edson Creek Trap Site



Hoop Trap Site (2015): Edson Creek (Rogue)

Date	Person	Temp F	Sthd smolt (>=120mm)	Sthd 1+ >=80mm	Coho smolt (>80mm)	Coho 0+ (<80 mm)	CT >=120mm	CT >=80mm	Sucker sp. Juv	Sucker sp. Adult	Lamprey Juvenile	Lamprey Adults	Trout 0+ (<80mm)	Stickle- back	Sculpin	Newts	Red LeggedF rogs	Chf Smolt >80 mm	Chf 0+ <80 mm	PM	RSS	Comments*	
5/2/2015	DH	50	1	5	5														1			32	
5/3/2015	DH	49	1	2		1	1	3							2					1		3	
5/4/2015	SM/TC	52	1		6		1	1							3					1		3	
5/4/2015	DH																						Trap pulled @ 1710; no personnel to tend trap 5/5
5/6/2015	DH																						Trap installed @ 1650
5/7/2015	DH	49			5										3							7	
5/8/2015	DH	49			1																	4	
5/9/2015	DH	50	3	1	1			2	11						1					1		28	
5/9/2015	DH																						Trap pulled @ 0840
5/10/2015	DH																						Trap installed @ 1040
5/11/2015	DH	52		1	4				4						2				1	1		118	
5/12/2015	DH	50		1																		19	
5/13/2015	DH	50		1	1				2											1		11	
5/14/2015	DH	50		1									1		2					1		13	
5/15/2015	DH	50		1					4				1		6					1		23	
5/16/2015	DH	52		1				1							1							11	Trap pulled @ 0900
5/17/2015	DH																						
5/18/2015	DH																						Trap replaced @ 1200
5/19/2015	DH	53		1	2				5				1							7		29	Trap pulled
			Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
			6	15	25	1	2	7	26	0	0	0	3	0	20	0	0	0	2	14		301	

Persons: SM - Steve Mazur (ODFW); TC - Todd Confer (ODFW); DH - Drew Harper (Curry SWCD); MS - Matt Swanson (Swanson Ecological Services, LLC)

* Record the date when the trap is pulled, and when it is redeployed.

Sullivan Gulch Hoop Trap Site

Legend

- 2017 Sullivan Gulch Trap Site
- Cape Blanco State Park

2017 Sullivan Gulch Trap Site

Airport Rd

Cape Blanco Rd



Hoop Trap Site (2017): Sullivan Gulch

Deploy Trap Date	Check Trap Date	Person	Temp F	Sthd smolt (>=120mm)	Sthd 1+ >=80mm	Coho smolt (>80mm)	Coho 0+ (<80 mm)	CT >=120mm	CT >=80mm	LSS Juv	LSS Adult	Lamprey Juvenile	Lamprey Adults	Trout 0+ (<80mm)	Stickle-back	Sculpin	Newts	Red Legged Frogs	Comments*
3/27/2017	3/29/2017	MS/GR		2	1	7	0	4	0	1	28	0	0	0	28	88	2	2	Trap set for 2 days
3/29/2017	3/30/2017	DH/GR		0	1	4	0	0	0	13	4	0	0	0	25	115	1	0	Rain night before
3/30/2017	3/31/2017	GR		0	0	6	1	0	0	1	5	0	0	0	24	161	4	0	
4/3/2017	4/4/2017	GR		0	0	2	0	0	0	0	2	0	0	0	25	132	0	0	Lower stream level
4/4/2017	4/5/2017	GR		0	0	6	0	0	0	0	0	0	0	0	57	175	4	0	
4/5/2017	4/6/2017	GR		0	0	1	0	0	0	0	0	0	0	0	13	143	1	3	Stream up from yesterday
4/10/2017	4/11/2017	GR		0	0	17	0	3	1	1	25	0	0	0	32	122	3	0	Raining
4/11/2017	4/12/2017	GR		1	0	3	0	1	0	2	24	0	0	0	26	160	5	3	Stream up. Water flowing around both sides of the trap
4/12/2017	4/13/2017	GR		0	0	0	0	0	0	0	2	0	0	0	7	42	2	0	Stream too high for trap to be effective
4/17/2017	4/18/2017	GR		0	0	20	0	2	0	2	6	0	0	0	16	110	1	3	Creek dropping from previous storms
4/18/2017	4/19/2017	GR		1	0	19	0	0	1	1	5	0	0	0	23	170	1	1	
				Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	
				4	2	85	1	10	2	21	101	0	0	0	276	1418	24	12	

Persons: SM - Steve Mazur (ODFW); DH - Drew Harper (Curry SWCD); MS - Matt Swanson / GR - Grady (Swanson Ecological Services, LLC);

* Record the date when the trap is pulled, and when it is redeployed.