

5.10 Element 10. Fish and Fish Habitat Assessment.

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Historically, Jackson Creek probably supported an active salmonid and trout fishery, reaching up to the foothills. Habitat quality has declined since settlement from problems associated with decreased water quality, quantity, and instream barriers. Today, steelhead have been observed only as far as Hanley Road and adjacent tributaries. The lower portion of Jackson Creek and tributaries support some anadromous fish habitat.

5.10.1. Fish Survey Methodology.

Fish use in Jackson Creek was investigated by ODFW in the spring of 1999 using backpack electrofishers to determine the upstream limit of salmonid fish use. This equipment works by temporarily stunning any fish in the vicinity of the electrofisher and allowing the operator to examine any fish present.

5.10.2. Fish Species and Location.

Native salmonids are cold water fish preferring temperatures below 64°F during the summer. As water temperatures increase above 68°F, salmonid condition and survival decreases. The oxygen level in water decreases and fish metabolism increases as water temperatures rise. The virulence of many pathogens present increases with higher water temperatures as well.

Three anadromous fish species may have been or are present in Jackson Creek (see table 5.8 below). Steelhead are an anadromous fish, spending a portion of their life cycle in both fresh water and salt water (see table 5.7 below). Summer steelhead spawning is concentrated from January to March. These fish spend 1-3 years in fresh water and 1-2 years in salt water prior to spawning. After only 2-4 months in salt water, a percentage of summer steelhead make a false spawning run. These fish called "half-pounders" overwinter in freshwater before migrating back to the ocean. Small streams and tributaries that tend to dry up in the summer are important summer steelhead spawning streams. Steelhead in the Rogue Basin have been petitioned for listing under the Endangered Species Act, but in both 1998 and 2001, the National Marine Fisheries Service (NMFS) determined a listing was not warranted.

Fall chinook spawning is concentrated from September through October. These fish generally migrate to saltwater in their first year and spend 1-4 years there. This species was also petitioned for listing under the Endangered Species Act. In 1999, NMFS determined this listing was not warranted.

Coho salmon have not been documented in Jackson Creek, but were likely present historically. In 1990 the State of Oregon listed all coho salmon south of the Coquille River, including the Rogue as "sensitive, classification: critical". Coho salmon were listed as "Threatened" in the Rogue Basin under the Endangered Species Act in 1997.

Table 5.7. Timing of Summer Steelhead Life Cycle Events for the Rogue Basin

Life Cycle	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Ma y	June	July	Aug	Sept
Early-run adult migration								X	X	X		
Half- pounder migration											X	X
Late-run adult migration	X										X	X
Adult spawning			X	X	X	X						
Eggs/fry emerge						X	X	X	X*			
Fingerlings/ rearing	X*	X	X	X	X	X	X	X	X*	X*	X*	X*
Juvenile migration		X	X	X	X	X	X	X	X*	X*		
Smolt out- migration							X	X	X			

X Indicates presence at the life cycle month stage.

X* Indicates severe limiting factor condition in the life cycle month stage.

(Determination by technical committee.

Summer steelhead fry emerge from the gravel in April and May, then migrate to the mainstem in May and June as the natal streams dry up. Smolts generally migrate downstream from March through June.

Table 5.8. Fish Status of Jackson Creek and Tributaries (Surveyed Tributaries only).

Note: All streams in the Jackson Creek watershed are ephemeral in some sections during summer months, thus fish presence is affected by this condition.

Stream	Fish Species	Barriers - River Mile
Jackson Creek Flows: Perennial	0.5 m Chinook 4.4 m Summer Steelhead 7 m Trout	RM 0.5 - culvert RM 1.0 - dam RM 1.5 - board dam RM 2.0 - board dam RM 4.4 - Hanley Rd. culvert RM 7.0 - dam RM 10 - Jacksonville Reservoir
Jackson Ck. Trib A Flows: Intermittent	1.4 m Summer Steelhead Sunfish	
S. Fork Jackson Creek Flows: Intermittent	None Observed	
Dean Creek Flows: Perennial	2 m Summer Steelhead Sunfish	RM 2 - Barrier
Dean Ck. Trib A Flows: Intermittent	0.3 m Summer Steelhead	RM 0.3 - Barrier
Cantrall Gulch Flows: Intermittent	None Observed	
Miller Creek Flows: Intermittent	Not Assessed	
Niedermeyer Creek Flows: Intermittent	Not Assessed	
Norling Gulch Flows: Perennial	Not Assessed	
Sailor Creek Flows: Intermittent	Not Assessed	
Walker Creek Flows: Intermittent	Not Assessed	

Anadromous fish use in Jackson Creek was documented to the Hanley Road crossing at river mile 4.4 where juvenile steelhead were observed just downstream from the riffle associated with this structure (ODFW, 1997). This road crossing culvert is not adequate to pass fish at most if not all stream flows. Steelhead were also documented in an unnamed tributary to Jackson Creek up to the Hopkins Canal crossing at river mile 1.4. This stream, identified as "Trib A to Jackson Creek", also contained Green Sunfish. Fish use in Dean Creek extended to a diversion dam at river mile 2.0. Steelhead were observed below the structure. Green Sunfish were found above

the structure, but no salmonids. Two unnamed tributaries to Dean Creek were also documented with steelhead presence. Steelhead were found in "Trib A to Dean Creek" up to an irrigation ditch at river mile 0.3. Steelhead were observed in "Trib C to Dean Creek" up to river mile 0.1. Above this, stream access was denied by the landowner and the upstream limit of fish use could not be determined. An adult Fall Chinook was observed in Jackson Creek by ODFW staff in 1997 downstream from the Interstate 5 culvert. In 1997, three sites on Jackson Creek in and above the town of Jacksonville were surveyed for fish use and found not to be fish bearing. No fish were observed in South Fork Jackson Creek or Cantrall Gulch during 1997 surveys.

Green Sunfish were found at two sites in Jackson Creek. This introduced species is not believed to have a strong interaction with native salmonids. Green Sunfish prefer water temperatures between 68-82°F, thus can tolerate quite warm water.

Jackson Creek is not currently stocked with hatchery fish. Historical stocking could not be confirmed but may have occurred at some point. There is also no angling allowed on Jackson Creek to protect the limited fish production that occurs.

5.10.3. Fish Habitat Conditions. A detailed habitat survey of Jackson Creek does not exist at this time. The lack of this information creates a data gap that prevents a thorough assessment of fish habitat in Jackson Creek. The lower 4.75 stream miles were walked in 1973 by ODFW and a narrative of that survey is available. Due to the years that have passed and the lack of detail provided, this survey was not used to express current habitat conditions. However, some historical information about Jackson Creek as of 1973 can be obtained from this survey:

- ◆ Similar to present day, the road crossing at Hanley Road was considered a barrier to "most upstream fish passage".
- ◆ The stream was primarily composed of riffles with very few pools. The half mile surveyed above the Hanley Road culvert was found to have the best habitat of the area surveyed.
- ◆ Two separate sections had been channeled with all pools eliminated.
- ◆ Two flashboard irrigation diversions existed at stream miles 1.5 and 2.0. Both of these diversions were operating without fish screens.
- ◆ A number of septic systems were spilling into the creek.
- ◆ Five steelhead redds were observed in the section of creek that parallels Hanley Road downstream of the crossing.

Jackson Creek flows through the cities of Jacksonville and Central Point where development continues to occur that impacts the water and vegetation associated with this creek. City utility departments often remove debris from stream channels to prevent its accumulation in culverts, but this practice is counter productive to the benefits that the same debris provides for fish, by creating habitat cover and pool creation from scouring. Development along Jackson Creek has also led to the removal of riparian vegetation that is important for the shade, future habitat recruitment, and sediment control it provides.

5.10.3.1. Barriers to Fish Migration. Water flow in Jackson Creek can be regulated by a local irrigation district during the irrigation season. Flow is increased and decreased to meet the needs

of district water users. Some users receive water from the canal system, while others divert water from the creek. The irrigation district must supplement stream flow with "out of basin" water to meet these requirements.

Water can be imported to Jackson Creek from diversions in the Little Butte and Bear Creek systems. If proper fish screening is not maintained, there is an opportunity for out of basin fish to be relocated to Jackson Creek with the irrigation water. It is not known to what extent this has occurred in the past or might still be occurring. Fish passage is also stopped when the irrigation district installs flash board dam structures to divert water into irrigation canals. This is an annual event that occurs during the irrigation season of April 1-October 31. These structures are located at river miles 1.5 and 2. Others exist above known fish usage. There is an effort underway to modify district activities in Jackson Creek that will provide fish passage around these structures.

There are still water diversions operating in Jackson Creek without fish screens sufficient to protect juvenile fish from entering irrigation channels. A percentage of fish produced in Jackson Creek are likely lost every year due to the lack of fish screening devices on diversion structures. Fish screening efforts have improved from years ago due to advances in screening technology and government programs to assist users with the cost associated with installing fish screen devices.

Jackson Creek has a number of obstacles to fish passage besides those associated with the irrigation district. The seven public road crossings on Jackson Creek from the mouth to Hanley Road were investigated as a part of this assessment. The culverts at Interstate 5, Highway 99, and Taylor Road were found likely to be seasonal barriers depending on flow conditions. The Hanley Road culvert is considered a barrier to upstream passage in most years. There may be other barriers associated with private drives or diversions that would be identified should a complete habitat survey be conducted in the future.

5.10.4. Findings, and Future Data Needs.

Fish habitat and access to habitat in Jackson Creek and tributaries have been degraded by a number of factors related to human development in the watershed. While anadromous and resident fish are believed to inhabit portions of Jackson Creek, their current levels would likely increase with improved habitat conditions, water quality, water flow, and removal of barriers. ODFW recommends that Jackson Creek watershed improvements be oriented toward improving water quality/quantity first, as this would have the greatest beneficial impact on fishery productivity. More recent and complete fish population and habitat surveys are needed on Jackson Creek and tributaries.

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