

Summary of the 2002 Bull Trout Study Results through 17 October 2002

Detection Summary:

- This summary includes fixed-site telemetry data through 17 October at Rocky Reach Dam, 15 October at Wells Dam, 14 October at Wanapum and Priest Rapids dams, and 11 October at Rock Island Dam. It also includes aerial survey data through 9 October. Table 1 summarizes the last known location of all radio-tagged bull trout and the attached map summarizes locations of bull trout detected during the 9 October 2002 aerial survey.
- Based on current telemetry data there are four tagged bull trout in the mainstem Columbia River, seven in the Wenatchee River basin, 17 in the Entiat River basin, and 12 in the Methow River basin (Table 1). No tagged trout have been detected in the Okanogan River.
- Of the four tagged bull trout located within the mainstem of the Columbia River, one is downstream from Rock Island Dam, one was last detected in the tailrace of Rocky Reach Dam, and two were last detected upstream of Rocky Reach Dam between the dam and the Entiat River confluence. The fish that was last detected downstream from Rock Island Dam (within Wanapum pool) may have died. On 22 August, the transmitter was recovered on shore near Douglas Creek, about 10 to 15 feet from the waters edge. The carcass was not recovered.
- Of the seven tagged fish in the Wenatchee River basin, five reside between the mouth of the Wenatchee River and Leavenworth, one is between Tumwater Dam and Lake Wenatchee, and the last one is in the Chiwawa River.
- Of the 17 fish in the Entiat River basin, six currently reside between the mouth of the Entiat River and the Mad River confluence, three are upstream of Preston Falls, and eight are located within the Mad River.
- Of the 12 fish detected in the Methow River basin, we last detected four in the mainstem Methow River (three between the mouth of the Methow River and Libby Creek and one upstream of the town of Winthrop), and eight in the Twisp River, all of which are located upstream from the confluence of Buttermilk Creek. These observations have not changed since the end of September 2002.

Dead Bull Trout:

- In addition to the bull trout that may have died in the Wanapum pool, another bull trout from this study appears to have died in the Twisp River. Recently, USFWS personnel recovered the radio-tag and carcass of a bull trout in a log jam near the Poplar Flat campground, upstream from a dewatered section of the Twisp River. At this time, details regarding this observation are limited, but it could be a trout that was tagged and released upstream from Wells Dam on 12 June. That fish was 52.0 cm in length and weighed 1.4 kg. We will include additional information in the November summary, as we learn more about this finding.

Ground Truthing:

- In September and October, we conducted a small exercise to assess the accuracy of aerial surveys in pin-pointing the location of radio-tagged bull trout within the tributaries. The objective was to assess if aerial surveys were accurate enough to identify specific spawning areas of bull trout. To address this, we conducted two ground-truthing tests. The following is a description and the results of those tests.

- The tests were conducted on 11 September and 9 October in the Entiat Basin. The tests consisted of using both fixed-wing aircraft and foot surveys to track ten radio-tagged bull trout, five in the Mad River and five in the mainstem Entiat River. Efforts were made to conduct the aerial and foot surveys within a few hours of each other to reduce the likelihood of fish movement between surveys.
- The evaluation was based on the premise that foot surveys provided an accurate assessment of the location of radio-tagged fish. During foot surveys, fish position was identified with a 3-element Yagi antenna using triangulation techniques, and where possible, confirmed with an underwater antenna. The approximate range of the underwater antenna was 10 m. Locations were recorded and mapped with a GPS unit.
- Aerial surveys were conducted by flying over the reach of interest at an elevation of about 100 m above the streams. Fish were detected with a telemetry receiver in the plane and a GPS unit recorded the position of the plane at 1-second intervals. The files were combined in a relational database to provide a GPS coordinate for each fish where the strongest signal was received.
- We compared results from the aerial and foot surveys to determine the discrepancy between the two methods. For the five fish in the Mad River, the median difference was 241 m (range, 128-398 m). For the five fish in the mainstem Entiat River, the median difference was 361 m (range, 102-627 m).
- These results suggest that the aerial surveys are not very accurate in pin-pointing bull trout spawning locations within tributaries. Watershed topography and the orientation of the antennas on the plane probably account for most of the error. We will offer a more detailed discussion of this work in a later report.

Table 1. The last known location of radio-tagged bull trout (N=40) for the period of 13 May, 2002 to 17 October, 2002 as identified by release location.

Release Location	Location of Last Detection										Total
	Hydroelectric Project			Basin				Below	Columbia	Not	
	RIS	RRH	Wells	Wen.	Ent.	Met.	Okan.	RIS ¹	River ²	Detected	
RIS Tailrace				2					2		4
RIS Forebay					3			1			4
RRH Tailrace				4	7	1					12
RRH Forebay		1			7	3					11
Wells Tailrace						4					4
Wells Forebay				1		4					5
Totals:	0	1	0	7	17	12	0	1	2	0	40

Notes:

¹ This refers to any detections below the Rock Island tailrace (i.e., Wanapum pool or dam, and Priest Rapids pool or dam).

² This refers to any detection during aerial or boat surveys within the mainstem Columbia, and excludes detections at dams.