

## 2023 Diamond Lake Monitoring Update

Diamond Lake is located near the headwaters of the North Umpqua basin, in eastern Douglas County, Oregon. Oregon Department of Fish and Wildlife (ODFW) has been managing the lake since the early 1900's when it began operating a rainbow trout hatchery. Two past rotenone treatments to eradicate tui chub and a recent rediscovery of the invasive tui chub have led ODFW to conduct more specific monitoring and management of the lake. In 2023 several monitoring projects were conducted to determine the health of the lake, rainbow trout health, fishery productivity as well as monitoring and removal of non-native minnows.

For most of the summer two Biological Science Assistants set trap nets daily at both standard and random locations along the shore. This was the eighth season of these efforts to remove non-native minnows. Starting in mid-June and ending in early September, the crew conducted 135 net sets and removed 23,265 golden shiners and 912 tui chub. Biological information (including length and weight) was collected on 5,693 rainbow, 63 tiger, and 292 brown trout. The crew purposefully avoided setting nets where large numbers of trout were collected previously, resulting in lower numbers of trout than have occurred in past efforts.

From late April through October ODFW personnel and volunteers spent 23 days (7 hours per day) conducting angler interviews. The current protocol dictates the interviewer stay at one pre-determined location and interacts with as many anglers as possible. Locations and shift times are chosen using a weighted/ random method. More surveys are conducted at the more popular boat launches. In 2023 808 anglers were interviewed during 316 survey events. Based on these surveys, ODFW estimates that there was a total of 57,770 rainbow trout caught with 25,853 being retained by anglers from May through November. This is below the average of 97,641 caught and 54,983 harvested.

Additionally, in late October ODFW staff set a trap net for two nights. The trap net is set for 24-48 hours to attempt to capture 50 rainbow trout to determine over-summer growth. By comparing the known average length of fingerlings when stocked in the spring and comparing to the measurements taken in late October, we can estimate the growth. Target trout are less than 350mm which is the estimated max length of one-year-old trout. This year's growth rate of 1.125"/month was below the 17-year average (post rotenone treatment) of 1.55"/month. Comparing length and weight we determined the average condition factor for this year's recruits was 1.27, which is slightly below average of 1.29.

Standard sampling points for summer trap nets.





Tiger Trout caught in fall trap net



Greg Huchko, Fabian Carr, Evan Leonetti (behind the camera) finished setting the fall trap net.