**2015 Oregon Spotted Frog Monitoring**

**Camas Prairie, Mt. Hood National Forest**

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NERI Report #15-03

The population of Oregon spotted frogs (*Rana pretiosa*) (OSF) at Camas Prairie on the Mt. Hood National Forest (MHNF) has been irregularly monitored since 1993 by volunteers with Wetland Wildlife Watch (WWW), a cooperative project of the Northwest Ecological Research Institute (NERI) and the MHNF.

OSF had been considered a Sensitive-Critical species and a candidate for listing by federal and state agencies including Region 6 of the Forest Service until 2014 when it was listed as a Threatened species. Populations throughout its range in Oregon, Washington, & British Columbia had been extinguished or reduced dramatically. Several areas still have significant numbers of OSF, while others have small and isolated populations, including Camas Prairie.

Located on the east side of the Cascade Range, in Wasco County, Oregon, Camas Prairie is a wet meadow approximately 1500 meters long by 700 meters at its widest. The population of OSF breeding there was identified in 1993, several years after WWW volunteer Donna Lusthoff first reported seeing large tadpoles in a pool at the meadow while she was monitoring sandhill cranes (*Grus canadensis*) nesting at the site. Since that time, WWW volunteers have kept track of this OSF population, which has also been included in range-wide studies by Christopher Pearl from the USGS Forest and Rangeland Ecosystem Science Center, and by Michael Blouin at Oregon State University who was examining OSF genetics.

Close and consistent annual monitoring of the OSF population at Camas Prairie has not occurred for several reasons. It has been difficult to forecast the time when frogs are probably breeding, or the best dates for conducting egg mass counts. In many years the site is not easily accessible during those times. Tadpole counts are extremely difficult because the larvae are widespread in shallow water in dense sedge and grass rather than in discrete open-water ponds. For several years, I thought either Pearl or Blouin was continuing to conduct OSF surveys at the site and I did not want to duplicate or interfere with their efforts. Because it is the only practical way to track OSF population trends at Camas Prairie (and many other sites), we have tried to conduct egg mass counts in early spring of each year.

METHODS

The plan was for 2 or 3 surveys to be conducted in early spring to count egg masses. I also planned to check the meadow once or twice in late spring and early summer to see if a few tadpoles were visible, and again in autumn to see if a few metamorphs were visible.

For egg mass counts, the meadow was divided into definable sections (e.g., north or south of channels, fences, or other distinct features) of appropriate habitat for OSF oviposition. Appropriate habitat is sunny, standing water less than about 36 cm in depth, with bare mud substrate or more commonly sedge, grass or juncus either just emerging (less than about 10 cm tall) or previous year’s growth fallen over and matted down (Jones et al.; Corkran and Thoms; Corkran personal observations). The edges of moving water in the channels and the edges of deeper pools in the meadow were also searched, although OSF eggs have never been found in these locations at Camas Prairie. Faster moving water, shaded sections along the south side of the meadow, and areas of dense vegetation taller than 15 cm were not surveyed.

Visual counts of OSF egg masses were conducted by walking transects through each of the definable sections of appropriate habitat. By pushing sticks into the mud or merely noting distinct trees or other features at the north and south edges of each section, the parallel transects were kept 3 to 4 meters apart, a distance at which the egg masses and adult frogs are usually easily visible. Some aggregations of egg masses and individual ones were marked by pushing a stick into the mud near them. At aggregations, care was taken to visually judge the number of separate masses. Neither eggs, hatchlings, nor adult frogs were handled.

Development stages of egg masses were not ascertained as per Gosner, but merely noted in the following categories:

* very fresh (ova spherical and bi-colored, jelly very clear or slightly bluish, egg masses in aggregations easily separable visually);
* fresh (ova spherical and black, jelly clear, egg masses usually separable visually);
* elongating (embryos elongating, jelly clear or greenish, egg masses in aggregations merged);
* near hatching (embryos with tails curved in the capsule);
* hatched (embryos in liquid accumulated on top of egg masses);
* dispersing (hatchlings free-swimming near remains of egg masses)

For tadpole and metamorph surveys, brief efforts focused on the most likely habitat for finding these elusive life stages. These included different microsites as the spring and summer progressed. First was water with emergent vegetation immediately adjacent to oviposition sites. Next was pooled water near oviposition sites where water with small tadpoles would be most likely to slowly flow as water levels dropped. Later on, as the meadow began to dry, the edges of the channels and remaining wet areas were briefly searched. I searched visually but did not use a net or my hands, because it is too easy to cut tadpoles or metamorphs by pulling them against the edges of sedge and grass leaf blades.

RESULTS AND DISCUSSION

In 2015, because of the unusually snow-free winter, I conducted a first partial survey at Camas Prairie on March 7, which was almost 2 weeks earlier than I normal begin monitoring. I found no egg masses or adult OSF, although the Pacific chorus frogs (*Pseudacris regilla*) were already chorusing. The water level was very low and there was no snow anywhere in the meadow. On March 13, I found 18 egg masses and one adult male OSF. Egg masses were predominantly in the same spots as in previous years, even though there was almost no water in some of those places. On March 21, Emilie Blevins and I conducted a third survey, relocating 16 of the previously found 18 egg masses plus 32 fresher ones that had been laid since March 13. On March 28, I surveyed most of the site again, finding one egg mass that we had missed, but none that had been laid recently, so I concluded that the breeding season had been completed. A total of 51 OSF egg masses was found in 2015 (Figure 1). This number compares favorably with counts from recent years (Table 1), and can be seen as an indication that the OSF population at Camas Prairie is maintaining itself

On the other hand, Camas Prairie dried very early in 2015. We were unable to survey for tadpoles during April and early May. A quick check on May 16 found no OSF and very little water available for tadpoles. Another brief look on July 16, after very hot dry weather in June, found no water in the channels or ponds. On September 27, Bev LaBelle, Gayle Joiner, and I searched for potential places where OSF metamorphs (if any tadpoles had survived) or even juveniles and adults could be spending the extended dry season. We found that there was a little water flowing at the surface from the springs at the west edge of the meadow, but that a large section of the west end was very wet. We did not find any OSF, but we were unable to do any searching in the south edge of the meadow where other springs occur. It is most likely that there was no survival of tadpoles hatched from the eggs laid in 2015. Because Camas Prairie has dried up in other years since monitoring of OSF began but the population has persisted, the probable loss of one year’s potential recruitment to the population may not be significant in the long term.

LITERATURE

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SURVEY HOURS

March 7 – 1

March 13 – 5

March 21 – 4 (X 2 surveyors)

March 28 – 3

May 16 – 1

July 16 – 1

September 27 – 5 (X 3 surveyors)

Total 34 person-hours

All surveyors wore scrupulously cleaned and disinfected boots or waders on each survey.

These surveys were carried out under the US Fish and Wildlife Service permit to the Mt. Hood National Forest, and Oregon Department of Fish and Wildlife scientific taking permit #024-15.