The challenging but fun work of capturing spotted frogs with a net per the mark-recapture monitoring protocol (courtesy of Laura Navarrete).

effects and restore habitat, large wood is placed within streams to create structures where fish can hide, provide shading, and increase the number and depth of pools. Recently, restoration methods have evolved and now include placing small-diameter trees and large quantities of smaller slash in a way that simulates the function of beaver dams in backing up water on the floodplain. An immediate effect of this type of floodplain restoration is the creation of small, slow-moving side channels and pools, which could potentially increase spotted frog breeding habitat.

For the past few years, La Grande Ranger District biologists have been conducting egg mass counts and frog surveys to track changes in population trends within frog-occupied streams and to find out if frogs start to colonize new, restored streams. Egg mass counts take place during the spring and, depending on the year, can involve crunching through late snow to reach the breeding ponds. Stream surveys occur during the summer, after the adult frogs have returned to the streams. Biologists and seasonal crews walk through the streams, climb over logs, and slip on algae-covered rocks to locate these frogs. Spotted frogs are large but quiet, so if they stay still, they can escape detection by even the most eagle-eyed surveyor. Netting the frogs can be an exercise in patience, and groans of frustration and shouts of joy are common while surveying. After biologists weigh, measure, and pit-tag them as part of the mark-recapture protocol, the frogs are released back into the river.

Stream restoration has the potential to produce positive results impacting a whole suite of species. Unfortunately, funding often is narrowly focused and rarely allows for monitoring beyond the target species (typically endangered or threatened fish species). So, biologists have many unanswered questions about the effects of stream restoration on amphibian populations. Does floodplain restoration increase breeding habitat for spotted frogs? Does increasing breeding habitat lead to an increased spotted frog population? Will spotted frogs colonize new streams if breeding habitat is created? USFS biologists hope that through these surveys, they will be able to answer some of these questions. However, in a time of decreasing budgets and personnel, the Grande Ronde Model Watershed and the USFS also are partnering to develop citizen science programs that, if successful, would generate long-term monitoring data. Through citizen science, children and adults not only directly contribute to science but also can gain a greater sense of ownership and stewardship of the natural resources that surround them. If you are interested in participating in citizen science efforts or volunteering, then please contact Kayla Morinaga, Grande Ronde Model Watershed Monitoring Coordinator (kayla@grmw.org), or Laura Navarrete, USFS Wildlife Biologist (laura.navarrete@usda.gov). ■

A surveyor takes a weight measurement of spotted frogs (courtesy of Laura Navarrete).

A female spotted frog in her egg mass. It is possible she is still depositing eggs or has just finished doing so (courtesy of Laura Navarrete).