Washington Department of Fish and Wildlife
Question & Answers
Oregon spotted frogs and the pilot reintroduction in Washington state

What is the Oregon spotted frog? The Oregon spotted frog (OSF) is a medium-sized amphibian with adults ranging in size from 2-4 inches long. Oregon spotted frogs are brown to reddish brown in color, with irregularly shaped black spots on their backs, and often with a red or orange tinge on the undersurfaces of their bellies or their legs.

Where do Oregon spotted frogs live? Oregon spotted frogs inhabit permanent wetlands. It is thought that large marshes (greater than 10 acres) are required to achieve the warm water temperatures for breeding and maintaining a population. Wetlands with abundant aquatic plants, coupled with springs or slow-moving streams, are necessary to fulfill the habitat requirements of this species. Breeding occurs along shallow wetland margins or on floating vegetation mats, often in water less than six inches deep. The active season is spent amongst aquatic vegetation while over-wintering occurs in springs or slow-moving streams. Oregon spotted frogs are virtually never found away from permanent water.

When is the frog reproductive?
Males and females reach sexual maturity during their first and second year, respectively, when they reach a certain size. Longevity for this species is not well understood, but adults are thought to be short-lived (i.e. generally 2-5 years), due largely to annual survival of adults of less than 50 percent, from a population studied in Washington. However, one adult male was found to be at least eight years old.

Why is the Oregon spotted frog endangered in Washington? The OSF became an Endangered Species under Washington state law in 1997 and is a candidate species for federal listing. Historically, OSFs were found within Washington from the Canadian border south to the Columbia River near Vancouver, and east along the lower slopes of the Cascade Mountains. This distribution has been dramatically reduced and Oregon spotted frogs are now known to reproduce in fewer than 10 locations in two disjunct counties, Thurston and Klickitat. The frog has likely disappeared from California and Oregon's Willamette Valley, where it also once resided.

Why did Oregon spotted frog populations decline? Loss of habitat and introduced predators**,** as well as disease, appears to have contributed to the decline of Oregon spotted frogs. Many wetlands within the historical range of the species have been drained, filled, developed, or severely altered. Oregon spotted frogs' breeding habitat has been directly affected by both development and associated water system changes. Furthermore, most ponds and lakes within the historic range of the Oregon spotted frog contain one or more species of introduced fish and an introduced amphibian, the American bullfrog, all of which are predators of native frogs. Most recently, the amphibian-specific fungus, *Batrachochytrium dendrobatidis*, or BD for short, has appeared in frogs worldwide and has been identified at every OSF-occupied site. BD is likely responsible for many amphibian declines and may be one important reason for recent declines of OSF populations. Plant community shifts and succession also play a role in OSF declines of some populations. An exotic plant, reed canary grass (*Phalaris arundinacea*) can choke wetland habitat and cool water temperatures, thereby negatively affecting OSF populations.

Why reintroduce Oregon spotted frogs into additional sites? Due to the relatively small number of OSF populations remaining across its geographic range and recent substantial

declines, it is critical to begin recovery efforts immediately to save this important member of Pacific Northwest aquatic ecosystems. The Washington Department of Fish and Wildlife (WDFW), in collaboration with a number of organizations, began a project in 2007 to reintroduce frogs to the Fort Lewis Military Reservation in Pierce County, Washington. This pilot reintroduction of Oregon spotted frogs will allow us to test one method of many that are necessary for recovery of this species.

Oregon spotted frog populations are an important link in a complex food web and aid in nutrient cycling with the wetland ecosystem, acting as a biotic bridge between lower and higher trophic levels. For instance, grasshoppers eat plant matter, birds and frogs eat grasshoppers; snakes eat birds, frogs and mice; owls and hawks will eat the birds as well as snakes, frogs and mice. When an animal dies, it is decomposed by worms, fungi and bacteria action and nutrients are released to the soil during the decaying process for plants to use.

How was Fort Lewis selected? Fort Lewis Military Reservation (67,700 acres) contains some of the largest relatively intact wetland complexes that remain in the Puget Lowlands of Washington. OSFs were collected near Fort Lewis during the early 20th century, and at least one historic site once existed on Fort Lewis, but no OSFs were detected during extensive surveys conducted in the early 1990s. However, because the area provides enough appropriate habitat, WDFW believes a pilot OSF reintroduction is likely to be successful at Fort Lewis.

What are the goals of Oregon spotted frog Pilot Reintroduction project? The main goals are to 1) establish a self-sustaining population of OSFs on the Fort Lewis Military Reservation and 2) set the stage for a systematically structured recovery effort for this species.

What is the reintroduction plan? The first Oregon spotted frogs will be released in late summer / early fall 2008. Approximately 600 juvenile frogs will be released into a pre-selected site on Fort Lewis. Under this plan, releases of additional individuals are to continue for at least an additional four years, through 2012.

Where are the juvenile Oregon spotted frogs coming from? The frogs are currently being head-started at Northwest Trek Wildlife Park in Pierce County and the Oregon Zoo in Portland. Eggs were collected from populations in both Thurston and Klickitat Counties and were transported in early spring to the facilities for rearing. All head-started individuals will be released at Ft. Lewis.

How will the project be evaluated? Several methods will be used for monitoring OSF reintroduction. Tiny radio transmitters will be attached to several frogs to track their movements after their release. Fall and spring visual surveys will be conducted to determine presence of individuals and, after three years, egg mass searches will also be conducted to determine if the frogs established breeding populations. Each year's newly released frogs will also be marked with a harmless dye that will be a unique color for all frogs released that year. Monitoring will continue for approximately 10 years until 2017 to assess rate of establishment.