

# The Siskiyou Mountains Salamander

BY DAVID CLAYTON AND ERIN HALCOMB

In the spring of 1963, Dr. Robert "Doc" Storm, herpetology professor of Oregon State University and his herpetology class were in the upper Applegate Valley on their annual collecting trip when they discovered several salamanders very near the little town of Copper, under what is now Applegate Reservoir. They collected some individuals, assuming that they were Del Norte Salamanders a species known for more coastal areas. But by 1965, these animals were described as a new species and named the Siskiyou Mountains Salamander, *Plethodon stormi*, after "Doc" Storm. With this began a new chapter in northwest herpetology that would focus on the Applegate Valley and this new species.

The Siskiyou Mountains Salamander is a member of the family Plethodontidae, the Lungless Salamanders and the genus *Plethodon*, the Woodland Salamanders. These animals respire entirely through

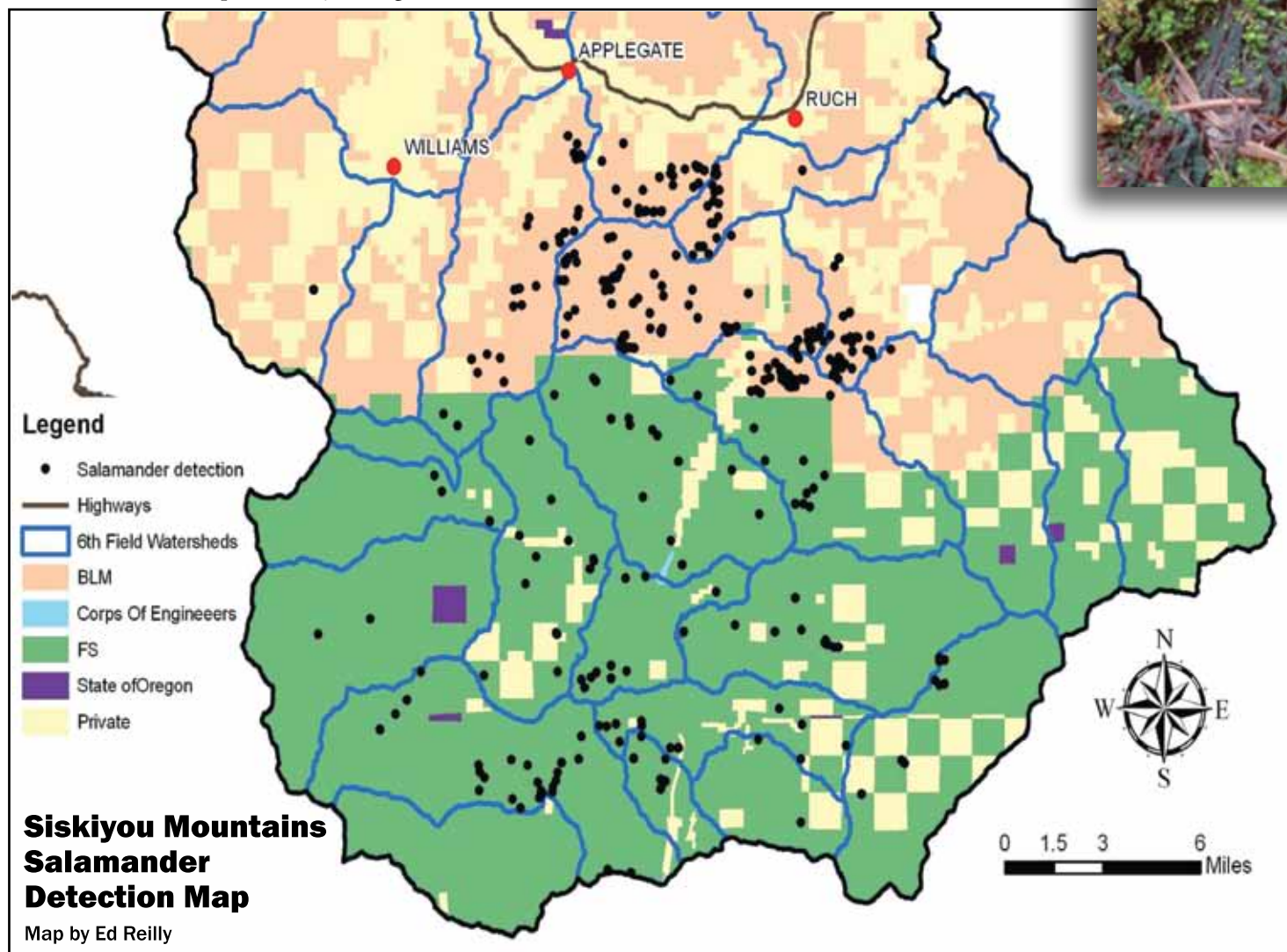
der rocks on the forest floor during wet weather. Siskiyou Mountains Salamanders are active on or near the surface primarily at night when it is cool and moist and peak active periods occur during the wet season. These animals prey on a variety of small invertebrates, including spiders, mites, ants, collembolans, and beetles. These salamanders are entirely terrestrial and do not require standing or flowing water at any stage of their life cycle. Eggs are thought to be laid in nests below the ground, deep in rocky substrate. Courtship probably occurs during the spring rainy season on the talus surface.

Potential threats to this rare species include habitat loss, degradation, and fragmentation. Activities that pose threats are those that disturb the surface microhabitats and/or microclimate conditions. Typically these involve actions that remove canopy and/or disturb the substrate. Removal of

Welsh from the Redwood Sciences Lab at Humboldt State University who had been studying the habitat associations of other amphibians, most notably the Del Norte Salamander, a species closely related to the Siskiyou Mountains Salamander. We then began to investigate the habitat associations of this animal by installing and sampling over 350 plots across the Applegate within all potential habitats for the salamander. Ultimately, we found that Siskiyou Mountains Salamanders were found in higher densities in older forest with higher canopies, confirming that they were dependent on late-successional forest here in the Applegate.

At the same

knew that it was time to develop a comprehensive conservation strategy for the salamander and in August of 2007 the Rogue River-Siskiyou National Forest, Medford District Bureau of Land Management, and US Fish and Wildlife Service jointly signed a conservation agreement and strategy giving us direction for the conservation and management of the Siskiyou Mountains Salamander. This strategy identifies over 110 known salamander sites across the Applegate Valley where the Forest Service



and BLM will manage for the species over the long term.

One of two management strategies is recommended for each of these high-priority sites. The first strategy focuses on maintaining habitat conditions for this species at the high-priority site by minimizing activities that may have effects on substrate, ground cover, and microclimate. The second strategy for sites that are within the Wildland-Urban Interface (WUI) allows for more latitude in activities at the high-priority site by recommending activities that reduce fuels and the potential for fire to the site. The two-tiered approach integrates the fire ecology of the area, current stand conditions, fuel loads and proximity to populated areas while providing for the long-term persistence of these populations. You can read the strategy at:

<http://www.fs.fed.us/r6/sfpnw/issssp/planning-documents/strategies.shtml>

So, from a chance discovery in 1963 by northwest herpetology icon Doc Storm and his students, to the 1990s and the Survey and Manage provision, we have learned a tremendous amount about this little salamander with no lungs that lives in the Applegate. Under this new strategy, the Siskiyou Mountains Salamander and its habitat within our Applegate Valley will continue to persist for generations to come.

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Photo above: The Siskiyou Mountains Salamander (*Plethodon stormi*) by Bill Leonard

their skin, complete their entire life cycle in terrestrial environments and are found on the forest floor in moist microhabitats. Like other *Plethodon* they are slim and long with relatively short legs. Siskiyou Mountains Salamanders are slim and long bodied (approximately 2-5 inches in length), and are chocolate brown to purplish brown on the back, with varying amounts of light flecking on the head, sides, and limbs. Adults may have a faint lighter brown dorsal stripe, and the belly color is grayish-purple. Juveniles tend to be black or very dark brown with flecking, and often have a light brown or tan dorsal stripe, and are gray on the belly.

The Siskiyou Mountains salamander lives only in an approximately 370,000 acre area in southwestern Oregon and northwestern California, primarily in the Applegate Valley. To date, there are approximately 380 localities known for the species.

Siskiyou Mountains Salamanders are typically found in forested habitats with deep rocky soils or talus and rocky outcrops. They also can be found under bark, logs, or other debris but always in association with rocky soils. Individuals are most often found by searching un-

canopy overstory may cause desiccation of the rocky substrates and loss of the mossy ground cover, a microhabitat feature of Siskiyou Mountain Salamander sites. Examples of the types of activities that may cause impacts include: certain types of timber harvest such as regeneration harvest with associated road construction and ground-based harvest systems.

In 1990, as a recent graduate of Southern Oregon University just out of herpetology class and with a good eye for salamanders, I was hired by the Applegate Ranger District to survey for Siskiyou Mountains Salamander. At the time this animal was only known from about 40 locations in the lower reaches of Carberry, Elliot, and the Squaw Creek drainages as well as three or four sites in the Seiad Creek drainage south of the Siskiyou Crest.

Over the next three years we surveyed for salamanders throughout the Applegate; we documented many new sites, and expanded the known range. I began to use a rudimentary habitat model that consisted of soil maps that showed rocky soils and vegetation maps identifying older forest and high canopy closures; these seemed to work well at predicting salamander habitat. Then in 1993, I met Dr. Hart

time, the Northwest Forest Plan (NWFP) was introduced to Federal lands in the Pacific Northwest in an attempt to break the stalemate over the northern Spotted Owl. One of the provisions of the NWFP was the Survey and Manage guidelines which identified over 500 species that were thought at the time to not be adequately provided for in the NWFP system of Late-successional Reserves. The Siskiyou Mountains Salamander was one of these species and surveys for all proposed activities and protection of all known locations were required under these new Survey and Manage guidelines. This provision was also instrumental in providing personnel to investigate the distribution, habitats, and genetics of this animal. Over the next ten years, our Amphibian Taxa Team, consisting of researchers, managers, and field biologists studied all aspects of the biology and ecology of the Siskiyou Mountains Salamander. We expanded the range significantly and developed new habitat models that allowed us to predict with 80 percent accuracy where suitable habitat and new sites could be found.

With all of the new information we had collected on the Siskiyou Mountains Salamander the Amphibian Taxa Team

Don't forget the  
**Silent Auction**

at the  
**Applegater  
Fundraiser**

held  
**Sunday, May 1  
2 to 6 pm**

at the Applegate River Lodge  
& Ranch Restaurant