

CPR for Species

by Ann Carlson



USFWS photo

A Butterfly's Magical Reappearance

The Fender's blue butterfly pulled its own magic act. After being described in 1931, it disappeared for 50 years, only to reappear in the late 1980s.

Endemic to native prairie habitats in the Willamette Valley, we now know the species exists in 16 small populations totaling fewer than 2,000 individuals. This endangered species is linked to several other prairie species. Its host plant, Kincaid's lupine, harbors eggs and is a larval food source. Adult butterflies feed on a suite of nectar-producing flowers, especially those from the lily family. The larvae have an interesting relationship with a variety of ant species. Fender's blue larvae have specialized glands that produce secretions rich in carbohydrates and amino acids that ants use as food. The ants, in return, provide the larvae protection from insect predators.

Kincaid's lupine is listed as threatened federally and by the state of Oregon. A native of the highly endangered western Oregon upland

*H*ave you ever wondered how to give CPR to a plant? Would it be easier with a butterfly? Yes, we are talking about resuscitating species in trouble. However, the abbreviation in this case stands for Cross Program Recovery. This program began when a Fish and Wildlife Service employee with broad ecological services experience became the manager of the Willamette Valley National Wildlife Refuge Complex in western Oregon.

Carol Schuler manages a complex of seven refuges throughout the Willamette Valley, which extends roughly from Portland to Eugene. With 17 listed species, 1 candidate, and 51 species of concern to support, Schuler wondered: "How can I stretch my refuge budget to manage all this?" Further complicating things, 70 percent of Oregon's population lives in the Willamette Valley, 96 percent is private land, and 16,000 stream miles (25,760 kilometers) wind through it. It was time, as they say, to "think outside the box."

Along with colleague Vicki Finn, Fisheries Resources Recovery Team

Leader for the Service's Pacific Northwest Region, Schuler began drawing together individuals from all walks of Service life. They established a Cross Program



Bradshaw's desert parsley

Photo by Aaron Drew



Willamette daisy

USFWS photo

Recovery (CPR) approach, a collaborative effort by the Service's Refuges, Fisheries, Ecological Services, Migratory Birds, and Federal Aid programs to benefit species. The goals include recovering listed species and conserving others to prevent the need for future listings. Focusing on wildlife refuge lands is a first step toward meeting these goals in the Willamette Valley.

The CPR team focused on seven listed species: Nelson's checker-mallow



Oregon chub
Photo by Jeff Ziller

(*Sidalcea nelsoniana*), Bradshaw's desert parsley (*Lomatium brashawii*), Willamette daisy (*Erigeron decumbens* var. *decumbens*), golden paintbrush (*Castilleja levisecta*), Fender's blue butterfly (*Icaricia icarioides fenderii*) and its host plant Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), and Oregon chub (*Oregonichthys crameri*). Success with these species seemed likely. They shared some positive attributes: they were isolated to smaller landscapes, and their biology, propagation methods, and habitat restoration techniques were known. The promise of success, however distant, galvanized the team.

Next, the team assessed threats and habitat. They prioritized ecological principles, such as focusing on habitat types rather than individual species and restoring native plant communities. Three habitat types common to the focal species needed CPR: oak savanna/upland prairie, wet prairie, and aquatic.

Along with all the usual recovery steps of reviewing plans, determining current species status, and identifying needs, the CPR team dug into the Service programs, partnerships, and funding available to see how each could be applied to recovering seven species on Refuge land. Each program had roles to play.

Recovering species does not happen after one valiant application of CPR. Time and persistence are key. Other hot tips from Schuler and Finn include:

- Ask partners, both internal and external, to take specific actions.
- Narrow research questions to what *must* be answered, and let the rest go.
- Use available programs.
- Secure recovery sites through acquisitions, easements, and "safe harbor" agreements.
- Use Service lands for recovery efforts.
- Use Refuge equipment instead of contracting.
- Use Refuges as test sites or seed sources.



Golden paintbrush
Photo by Ted Thomas

- Focus on recovery efforts that match the primary purposes of Refuges.
- Use all types of funding: base, partners, grants, agency programs.
- Start at the grassroots level with local employees and partners.
- Streamline programmatic section 7 coverage for Refuges.
- Be pragmatic! Simplify the strategy, focus on practical steps.

Once you have accomplished all of the above, please report back to the Willamette Valley CPR team. They are still figuring it out as they go along.

Ann Carlson is an endangered species recovery biologist at the Service's Pacific Northwest Regional Office; email ann_carlson@fws.gov.

prairie, most of the perennial's 57 sites are on private land. By examining lateral growth rings of this woody species, researchers estimate that some of the plants could be hundreds of years old. This trait historically provided stability for populations of Fender's blue butterflies, allowing them to persist at single locations for long periods. The threats facing both the Fender's blue butterfly and Kincaid's lupine include habitat loss, invasions of nonnative plants, and disruption of historic disturbance regimes. The Willamette Valley was burned prior to the 1900s by native Kalapuya Indians, preventing invasions of tall grasses, shrubs, and trees. Conservation and recovery efforts are focused on prescribed fire and weed control measures, and on linking known populations. Most of the existing sites function independently. Sites must be no more than a few kilometers apart to accommodate the flight distance of the Fender's blue butterfly and ensure genetic stability.