



Regional endangered species staffers have reported the following news:

Region 1



Oregon spotted frog
Photo by Laura Todd/USFWS

Oregon Spotted Frog (*Rana pretiosa*) The U.S. Fish and Wildlife Service, Oregon Department of Fish and Wildlife, and the Willamette National Forest have completed a Conservation Agreement for the Mink Lake Basin spotted frog population in the Three Sisters Wilderness. The agreement covers monitoring, site protection, public education, habitat surveys, evaluation of potential impacts from recreation activities, and identifying Spotted Frog Conservation Areas within the basin. Balancing recreation demands with the needs of rare species will be a key component of the project.

Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake, a non-venomous species listed as threatened, has been studied on Colusa National Wildlife Refuge (NWR) in California since 1996. Refuge staff and the U.S. Geological Survey's Biological Resources Division field station in Dixon are using radio telemetry and mark-

Giant garter snake
USFWS photo

recapture techniques to study the garter snake's habitat use in relation to wetland restoration. A non-native species, the bullfrog (*Rana catesbeiana*), is a suspected predator of young garter snakes. Bullfrogs were collected for a pilot study examining the effects of introduced predators on snake populations.

Biologists closely observed radio-marked garter snakes to determine when the females were beginning to give birth and scheduled bullfrog collection to coincide with this period. Thirty bullfrogs were collected from late July to early August of 2000. Each frog was measured, sexed, and examined for stomach contents. In addition to numerous crayfish and invertebrates, two of the frogs had consumed small garter snakes. The frogs that had consumed the young snakes were among the smallest frogs collected. The Service hopes to further investigate the relationship between the non-native bullfrogs and the garter snakes within the Central Valley region.

Southwestern Willow Flycatcher (*Empidonax trailii extimus*)



Southwestern willow flycatcher
Photo © B. Moose Peterson/WWRP

fornia have conducted flycatcher surveys at Pahrnatag NWR in southern Nevada in 1998, 1999, and 2000. Yearly monitoring of nesting and habitat preference continues to indicate that the Pahrnatag NWR contains the most productive native habitat for this endangered subspecies in Nevada, based on the high density of successfully nesting birds found within a relatively small area. During the 2000 nesting season, 31 southwestern willow flycatchers fledged successfully from 42 chicks hatched. Of the 23 nests constructed, all but 3 were located in a 50+ year-old cottonwood/willow gallery less than 20 acres (8 hectares) in size. Only one nest was successfully parasitized by brown-headed cowbirds (*Molothrus ater*), resulting in one cowbird fledgling. Most of the unsuccessful nests were abandoned for unknown reasons, but successful re-nesting usually followed.

As in previous years, the proportion of flycatchers nesting in native cottonwood/willow habitat was much higher than in non-native salt cedar (*Tamarix* sp.). Even though salt cedar habitats are available on the refuge, only one nest was found in salt cedar, and it resulted in only one fledgling.

Submitted by LaRee Brosseau of the Service's Portland, Oregon, Regional Office.

Region 4

Alabama Sturgeon (*Scaphirhynchus suttkusi*) An Alabama sturgeon being held at the Marion Fish Hatchery, a facility run by the State of Alabama, died September 19, leaving only a single Alabama sturgeon in captivity. The sturgeon's cause of death is under review. The last remaining captive Alabama sturgeon is still alive and has been treated for a possible viral infection. It has apparently recovered fully.

The Alabama sturgeon was listed as an endangered species on June 5, 2000. Only a few have been caught despite more than 4,000 hours of professional fishing. The goal is to find more fish and establish a captive breeding population to produce stock for eventual reintroduction into the wild.

Submitted by Connie Dickard in the Service's Daphne, Alabama, Field Office

Boulder Darter (*Etheostoma wapiti*) In August 1999, personnel from the Service's Cookeville, Tennessee, Ecological Services Office; several national fish hatcheries; Tennessee Wildlife Resources Agency; and Conservation Fisheries, Inc., (CFI), placed approximately 3.5 tons (3,175 kilograms) of limestone slabrock above and below the Interstate 65 bridge crossing the Elk River in south-central Tennessee to provide natural spawning substrate for the endangered boulder darter. In conjunction with this effort, personnel from CFI surveyed the site prior to habitat augmentation and documented the presence of three boulder darters at the bridge crossing.



Boulder darter

Photo courtesy of Conservation Fisheries Inc.

In August 2000, CFI personnel, assisted by individuals from the national fish hatcheries, returned to the site. They released tagged boulder darters as part of a new study being funded by our Cookeville Office and surveyed the slabrocks for use by the species. A survey of the site the day following the release resulted in the discovery of 3 tagged and 13 non-tagged boulder darters. Most of the boulder darters were found to be using the slabrocks placed in the Elk River in 1999. This is the largest concentration of boulder darters ever found at one location. The slabrocks were also being used by several other darter species, as well as madtoms. As a result of this success, additional spawning substrate will be placed at suitable locations in the Elk River in the near future.

Submitted by Tyler Sykes of the Service's Cookeville, Tennessee, Field Office.

Region 5

Bat Protection Between July 18 and 23, 2000, the Service's West Virginia Field Office, in partnership the West Virginia Division of Natural Resources' Non-Game Wildlife and Natural Heritage



Bat cave gate nearing completion

USFWS photo

Program, constructed two angle iron gates at the entrances of Hoffman School Cave and Minor Rexrode Cave in Pendleton County, West Virginia. The gates will permanently protect two large summer and winter colonies of the endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*) and a significant hibernaculum of the endangered Indiana bat (*Myotis sodalis*) from human disturbance. Hoffman School Cave, designated critical habitat, is essential to the recovery of the Virginia big-eared bat.

Under contract with our West Virginia Office, Roy Powers of the American Cave Conservation Association designed the gates and directed their construction in the field. In addition to personnel from our West Virginia office, Service personnel key to the project came from the Canaan Valley NWR, Ohio River Islands NWR, and the Washington, D.C., Public Affairs Office. Other participants came from U.S. Forest Service, a private consultant (Sanders Wildlife), and National Speleological Society grottos (chapters) in Virginia, West Virginia, Pennsylvania, and Maryland.

Submitted by William A. Tolin, Endangered Species Specialist in the Service's West Virginia Field Office.

A wealth of information on military agencies and their endangered species programs is available on the Internet. Here are some websites to get you started:

Department of Defense—To learn more about DoD's natural resources conservation program, see the Conservation section of the Defense Environmental Network & Information eXchange (DENIX) web site:

<https://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/conservation.html>

Many of the products and partnerships described in this Bulletin are funded through the DoD Legacy Resource Management Program. More information about the Legacy program and the process for submitting project proposals are available via the web at this address:

<http://www.dodlegacy.org>

Army—To learn more about the Army's environmental accomplishments, including conservation of endangered and threatened species, see:

<http://aec.army.mil/prod/usaec/op/update/updates.htm>

Air Force—For more information on the Air Force's environmental program, visit their web site:

<http://www.af.mil/>

or their environment and safety site:

<http://www.safmi.hq.af.mil/saf-miq/miq.htm>

Navy—The Department of the Navy's environmental web site is at this address:

<http://web.dandp.com/enviroweb/index.html>

From there, you can go to the U.S. Navy or the U.S. Marine Corps' environmental web sites.

The endangered species posters in the "We're Saving a Few Good Species" series produced by the U.S. Marine Corps and the U.S. Fish and Wildlife Service are no longer in production, but can be viewed online; see them at

<http://endangered.fws.gov/education/marines.htm>

From August through October of 2000, the Fish and Wildlife Service published the following proposed and final Endangered Species Act (ESA) rules in the *Federal Register*. The full text of each action can be accessed through our website:

<http://endangered.fws.gov>.

Proposed Critical Habitat Rules

Critical Habitat Critical habitat, as defined in the ESA, is a term for a geographic area that is essential for the conservation of a listed species. Critical habitat designations do not establish a wildlife refuge, wilderness area, or any other type of conservation reserve, nor do they affect actions of a purely private nature. They are intended to delineate areas in which federal agencies must consult with the Service to ensure that actions these agencies authorize, fund, or carry out do not adversely modify the designated critical habitat. Within designated critical habitat boundaries, federal agencies are required to consult only in those areas that contain the physical and biological features necessary for the species' survival and recovery; many developed areas within the boundaries no longer contain suitable habitat. Maps and more specific information on critical habitats are contained in the specific *Federal Register* notice designating each area. For more information on critical habitat designations in general, go to the website for our Endangered Species Listing Program (<http://endangered.fws.gov/listing/index.html>) and follow the link, "About Critical Habitat."

California Red-legged Frog (*Rana aurora draytonii*) On September 11, the Service proposed to designate critical habitat for the endangered California red-legged frog within an overall area of about 5.4 million acres (2.2 million hectares). About 40 percent of this area is in public ownership and managed by either federal, state, or local government entities. The remainder of the acreage is in private ownership. The lands are located within the following 31 counties: Alameda, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Kern, Los Angeles, Mariposa, Marin, Merced, Monterey, Napa, Plumas, Riverside, San Benito, San Diego, San Joaquin, San Mateo, San Luis

Obispo, Santa Barbara, Santa Clara, Santa Cruz, Sierra, Solano, Sonoma, Stanislaus, Tehama, Tuolumne, Ventura, and Yuba. Developed areas within these zones that no longer contain specific habitat features the frog needs are not being proposed as critical habitat.

This native amphibian is widely believed to have inspired Mark Twain's fabled short story, "The Celebrated Jumping Frog of Calaveras County." The largest native frog in the western United States, it can reach up to 5 inches (12.5 centimeters) in length. California red-legged frogs breed in aquatic habitats such as streams, ponds, marshes, and stock ponds. During wet weather, they may move through upland habitats. The species' decline is attributed to the spread of exotic predators such as bullfrogs (*Rana catesbeiana*), and changes that have fragmented habitat, isolated populations, and degraded streams.

Riverside Fairy Shrimp (*Streptocephalus woottoni*) On September 21, the Service proposed to designate critical habitat on approximately 12,060 acres (4,880 ha) for the endangered Riverside fairy shrimp, a small crustacean unique to vernal or ephemeral pools in southern California. These lands encompass portions of Orange, Riverside, Los Angeles, Ventura, and San Diego counties in southern California.



Riverside fairy shrimp

Photo © B. Moose Peterson/WRP

Vernal pools are seasonal wetlands that fill with water during fall and winter rains. They are home to many plants and animals that, in turn, form a valuable part of the food chain for a wide array of

animals, including birds of prey, shorebirds, migratory waterfowl, frogs, toads, salamanders, and pollinating insects. Vernal pools were once abundant throughout most of the Central Valley and coastal areas of southern California but have declined significantly due to urban development and agricultural conversion, alterations of vernal pool hydrology, off-road vehicle activity, livestock overgrazing, and other land uses.

Spruce-fir Moss Spider (*Microhexura montivaga*) On October 6, the Service proposed to designate critical habitat in the southern Appalachian Mountains of North Carolina and Tennessee for the endangered spruce-fir moss spider. This tiny spider is related to the more commonly known, and much larger, tarantulas of the southwestern United States. The spruce-fir moss spider is a classic example of a native species declining because of the introduction of an invasive species. In this case, a non-native insect, the balsam wooly adelgid (*Adelges picea*), was accidentally introduced into the United States from Europe. The infestation has resulted in a massive die-off of Fraser fir (*Abies fraseri*) trees throughout the Southern Appalachian Mountains, and in turn, the destruction of the spruce-fir moss spider's habitat. Loss of trees results in increased light and temperature and decreased moisture on the forest floor, causing the moss mats upon which the spider depends to dry up and become unsuitable habitat.

The area proposed as critical habitat includes areas, at elevations of 5,400 feet (1,645 meters) and higher, on Grandfather Mountain in Avery, Caldwell, and Watauga Counties, North Carolina; Mount Collins, Clingman's Dome, and Mount Buckley in Swain County, North Carolina, and Sevier County, Tennessee; Mount LeConte in Sevier County, Tennessee; and Roan Mountain in Avery and Mitchell Counties, North Carolina, and Carter County, Tennessee. All proposed areas, with one exception, are within the Great Smoky Mountains National Park and the Pisgah and Cherokee National Forests. One proposed area on Grandfather Mountain is privately owned, but it is being managed by The Nature Conservancy through a cooperative agreement with the landowner.

Bay Checkerspot Butterfly (*Euphydryas editha luesterae*) The Service proposed on October 16 to designate some 26,180 acres (10,600 ha) within 15 units in San Mateo and Santa Clara counties as critical habitat for this endangered butterfly. Included in the proposal are grasslands containing stands of dwarf plantain (*Plantago erecta*), the bay checkerspot's primary larval host plant, as well as areas that provide corridors for the butterfly to travel between habitats. Serpentine soils, unusual soils high in magnesium and low in calcium, are a strong indicator of potential habitat value for the butterfly.



Bay checkerspot butterfly
USFWS photo

Residential and commercial development, invasive non-native plants, and air pollution threaten the survival of the bay checkerspot butterfly. It has continued in a long-term decline that leaves it with only about four core sites and an uncertain number of satellite populations. A famous population at Stanford's Jasper Ridge Biological Reserve is considered extinct by researchers, and the only core population in San Mateo County is severely reduced.

Final Critical Habitat Rules

Alameda Whipsnake (*Masticophis lateralis*) On October 3, the Service designated seven areas in California's Alameda, Contra Costa, Santa Clara, and San Joaquin counties as critical habitat for the threatened Alameda whipsnake. These areas encompass about 406,600 acres (164,150 ha), although developed lands within these boundaries that no longer provide the ecological characteristics needed by the snake

Image Omitted

Alameda whipsnake
Photo by Karen Swaim

will not be subject to the requirement for federal interagency consultation.

The Alameda whipsnake, a non-venomous species, is sooty black in appearance, with distinct yellow-orange stripes running down each side. It can reach a length of up to four feet (1.2 meters) and feeds almost exclusively on lizards. Residential, commercial, and recreational development, and certain fire suppression activities are the main threats to the Alameda whipsnake.

San Diego Fairy Shrimp (*Branchinecta sandiegoensis*) On October 23, the Service designated approximately 4,025 acres (1,630 ha) of vernal pool habitat in Orange and San Diego counties, California, as critical habitat for this small freshwater crustacean. The recovery of the San Diego fairy shrimp will depend on the ability of the Service to work effectively with the military, local jurisdictions, and other stakeholders in this region to conserve the vernal pools and implement the species' recovery plan.

Coastal California Gnatcatcher (*Polioptila californica californica*) A total of approximately 513,650 acres (207,890 ha) in Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties, California, were designated as critical habitat for the coastal California gnatcatcher on October 24. Lands designated are under private, state, and federal ownership, with federal lands including lands managed by the Fish and Wildlife Service, the Bureau of Land Management, Department of Defense, and U.S. Forest Service. Areas already covered by legally operative Habitat Conservation Plans, however, were exempted from the critical habitat designation.

Final Listing Rules

California Tiger Salamander (*Ambystoma californiense*) The Service published a final rule on September 21 listing the Santa Barbara County population of the California tiger salamander as endangered. This population faces serious immediate threats to its survival from habitat loss and fragmentation due to agricultural and urban development.

The Santa Barbara County population is separated from all other California tiger salamander populations by the La Panza and Sierra Madre mountain ranges. The salamander exists in only six areas in Santa Barbara County, five of which are undergoing rapid conversion from oil and grazing lands to agricultural and urban development.

Steelhead (*Oncorhynchus mykiss*) Based on a determination by the National Marine Fisheries Service, which has primary ESA jurisdiction for most marine species, the Evolutionarily Significant Unit (ESU) of steelhead in northern California was listed on September 7 as threatened.



Steelhead
Photo © B. Moose Peterson/WRP

Colorado Butterfly Plant (*Gaura neomexicana* ssp. *coloradensis*) A short-lived perennial herb in the family Onagraceae, this plant grows within a small area in southeastern Wyoming, western Nebraska, and north-central Colorado. Non-selective spraying of herbicides, haying and mowing at certain times of the year, some water development, conversion of native habitats for crop cultivation, competition from non-native plants, and urbanization are the main threats to the Colorado butterfly plant. On October 18, the Service published a final rule listing this plant as threatened.

BOX SCORE

Listings and Recovery Plans as of December 31, 2000

GROUP	ENDANGERED		THREATENED		TOTAL LISTINGS	U.S. SPECIES W/ PLANS**
	U.S.	FOREIGN	U.S.	FOREIGN		
 MAMMALS	63	251	9	17	340	47
 BIRDS	78	175	15	6	274	76
 REPTILES	14	64	22	15	115	30
 AMPHIBIANS	10	8	8	1	27	11
 FISHES	70	11	44	0	125	90
 SNAILS	20	1	11	0	32	20
 CLAMS	61	2	8	0	71	44
 CRUSTACEANS	18	0	3	0	21	12
 INSECTS	33	4	9	0	46	28
 ARACHNIDS	12	0	0	0	12	5
ANIMAL SUBTOTAL	379	516	129	39	1,063	363
 FLOWERING PLANTS	564	1	141	0	706	554
 CONIFERS	2	0	1	2	5	2
 FERNS AND OTHERS	26	0	2	0	28	28
PLANT SUBTOTAL	592	1	144	2	739	584
GRAND TOTAL	971	517	273	41	1,802*	947

TOTAL U.S. ENDANGERED: 971 (379 animals, 592 plants)
 TOTAL U.S. THREATENED: 273 (129 animals, 144 plants)
 TOTAL U.S. LISTED: 1,244 (508 animals***, 736 plants)

*Separate populations of a species listed both as Endangered and Threatened are tallied once, for the endangered population only. Those species are the argali, chimpanzee, leopard, Stellar sea lion, gray wolf, piping plover, roseate tern, green sea turtle, saltwater crocodile, and olive ridley sea turtle. For the

purposes of the Endangered Species Act, the term "species" can mean a species, subspecies, or distinct vertebrate population. Several entries also represent entire genera or even families.

**There are 530 approved recovery plans. Some recovery plans cover more than one species, and a few species have separate plans covering different parts of their ranges. Recovery plans are drawn up only for listed species that occur in the United States.

***Nine animal species have dual status in the U.S.

ENDANGERED
Species
BULLETIN

*U.S. Department of the Interior
 Fish and Wildlife Service
 Washington, D.C. 20240*

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