

Ranch" site. The plant is found on gently sloping to nearly level, fine-textured, shallow soils over outcrops of Santa Cruz mudstone and Purisima sandstone (Hinds and Morgan 1995). *Chorizanthe robusta* var. *hartwegii* occurs with *Polygonum hickmanii* and other small annual herbs in patches within a more extensive annual grassland habitat. These small patches have been referred to as "wildflower fields" because they support a large number of native herbs, in contrast to the adjacent annual grasslands that support a greater number of non-native grasses and herbs. While the wildflower fields are underlain by shallow, well-draining soils, the surrounding annual grasslands are underlain by deeper soils with a greater water-holding capacity, and therefore more easily support the growth of non-native grasses and herbs. The surface soil texture in the wildflower fields tends to be consolidated and crusty rather than loose and sandy (Biotic Resources Group (BRG) 1998). Elevation of the sites is from 215 to 245 meters (m) (700 to 800 feet (ft)) (Hinds and Morgan 1995). The climate in the city of Santa Cruz, 13 km (8 mi) to the south, is characterized by an average of 76.7 cm (30 in.) of rain per year, and an average temperature of 14 degrees Celsius (57 degrees Fahrenheit) per year, while the city of Los Gatos, 16 km (10 mi) to the north, averages 129.9 cm (51 in.) of rain per year, and an average temperature of 15 degrees Celsius (58 degrees Fahrenheit) per year (Worldclimate 1998).

*Chorizanthe robusta* var. *hartwegii* is associated with a number of native herbs including *Polygonum hickmanii* (Scotts Valley polygonum), *Lasthenia californica* (goldfields), *Minuartia douglasii* (sandwort), *Minuartia californica* (California sandwort), *Gilia clivorum* (gilia), *Castilleja densiflora* (owl's clover), *Lupinus nanus* (sky lupine), *Brodiaea terrestris* (brodiaea), *Stylocline amphibola* (Mount Diablo cottonweed), *Trifolium grayii* (Gray's clover), and *Hemizonia corymbosa* (coast tarplant). Non-native species present include *Filago gallica* (filago) and *Vulpia myuros* (rattail) (California Natural Diversity Data Base (CNDDB) 1998; Randy Morgan, biological consultant, pers. comm. 1998). In many cases, the habitat also supports a crust of mosses and lichens (Biotic Resources Group 1998).

Pursuant to the Endangered Species Act of 1973, as amended (Act), *Chorizanthe robusta* var. *hartwegii*, was listed as endangered on February 4, 1994 (59 FR 5499). On February 15, 2001, we published in the **Federal**

**Register** (66 FR 10469) a rule proposing critical habitat for the *Chorizanthe robusta* var. *hartwegii*. Approximately 125 hectares (310 acres) of land fall within the boundaries of the proposed critical habitat designation. Proposed critical habitat is located in Santa Cruz County, California, as described in the proposed rule.

Section 4(b)(2) of the Act requires that the Secretary shall designate or revise critical habitat based upon the best scientific and commercial data available and after taking into consideration the economic impact of specifying any particular area as critical habitat. Based upon the previously published proposal to designate critical habitat for *Chorizanthe robusta* var. *hartwegii* and comments received during the previous comment period, we have prepared a draft economic analysis of the proposed critical habitat designation. The draft economic analysis is available at the above Internet and mailing address.

#### Public Comments Solicited

We have reopened the comment period at this time in order to accept the best and most current scientific and commercial data available regarding the proposed critical habitat determination for the Scotts Valley spineflower and the draft economic analysis of proposed critical habitat determination. Previously submitted written comments on this critical habitat proposal need not be resubmitted. We will accept written comments during this reopened comment period. The current comment period on this proposal closes on October 4, 2001. Written comments may be submitted to the Ventura Fish and Wildlife Office in the **ADDRESSES** section.

**Authority:** The authority for this action is the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 7, 2001.

**Daniel S. Walsworth,**

*Acting Manager, California/Nevada Operations Office.*

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

RIN 1018-AH04

#### Endangered and Threatened Wildlife and Plants; Reopening of Public Comment Period and Notice of Availability of Draft Economic Analysis for Proposed Critical Habitat Determination for *Chorizanthe pungens* var. *pungens* (Monterey Spineflower)

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule; reopening of public comment period and notice of availability of draft economic analysis.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service) announce the availability of a draft economic analysis for the proposed designation of critical habitat for the Monterey spineflower (*Chorizanthe pungens* var. *pungens*). We are also providing notice of the reopening of the public comment period for the proposal to designate critical habitat for this plant to allow all interested parties to comment simultaneously on the proposed rule and the associated draft economic analysis. Comments previously submitted need not be resubmitted as they already have been incorporated into the public record and will be fully considered in the final rule. Comments submitted during this comment period will also be incorporated into the public record and will be fully considered in the final rule.

**DATES:** The comment period is opened and we will accept comments until October 19, 2001. Comments must be received by 5:00 p.m. on the closing date. Any comments that are received after the closing date may not be considered in the final decision on this proposal.

**ADDRESSES:** Copies of the draft economic analysis are available on the Internet at "www.r1.fws.gov" or by writing to the Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003. All written comments should be sent to the Field Supervisor at the above address. You may also send comments by electronic mail (e-mail) to "fw1montereysf@r1.fws.gov". Please submit electronic comments in ASCII file format and avoid the use of special characters and encryption. Please include "Attn: RIN 1018-AH04" and

your name and return address in your e-mail message. If you do not receive a confirmation from the system that we have received your e-mail message, contact us directly by calling our Ventura Fish and Wildlife Office at phone number 805-644-1766.

Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above Service address.

**FOR FURTHER INFORMATION CONTACT:**

Catrina Martin, Assistant Field Supervisor, Ventura Fish and Wildlife Office, at the above address (telephone 805-644-1766; facsimile 805-644-3958).

**SUPPLEMENTARY INFORMATION:**

**Background**

*Chorizanthe pungens* var. *pungens* is endemic to sandy soils in coastal areas in southern Santa Cruz and northern Monterey counties, and in the Salinas Valley in interior Monterey County. In California, the spineflower genus (*Chorizanthe*) in the buckwheat family Polygonaceae comprises species of wiry annual herbs that inhabit dry sandy soils, both along the coast and inland. Because of the patchy and limited distribution of such soils, many species of *Chorizanthe* tend to be highly localized in their distributions.

The overall appearance of *Chorizanthe pungens* var. *pungens* is of a low-growing herb that is soft-hairy and grayish or reddish in color. The plant has a prostrate to slightly ascending habit, with large individuals reaching 50 centimeters (cm) (20 inches (in)) or more in diameter. This taxon is distinguished by white (rarely pinkish) scarious (membranous) margins on the lobes of the involucre (a whorl of bracts) that subtend the white- to rose-colored flowers. The aggregate of flowers (heads) tend to be small (less than 1 cm (0.4 in) in diameter) and either distinctly or indistinctly aggregate.

*Chorizanthe pungens* var. *pungens* is a short-lived annual species. It germinates during the winter months and flowers from April through June; although pollination ecology has not been studied for this taxon, *C. p.* var. *pungens* is likely visited by a wide array of pollinators; observations of pollinators on other species of *Chorizanthe* that occur in Santa Cruz County have included leaf cutter bees (megachilids), at least six species of butterflies, flies, and sphecoid wasps (R. Morgan, biologist, Soquel, CA, pers. comm. 2000). Each flower produces one seed; depending on the vigor of an individual plant, dozens, if not hundreds of seeds could be produced.

The importance of pollinator activity in seed set has been demonstrated by the production of seed with low viability where pollinator access was limited (Harding Lawson Associates 2000). Seed is collectable through August. The plants turn a rusty hue as they dry through the summer months, eventually shattering during the fall. Seed dispersal is facilitated by the spines on the involucre, which attach the seed to passing animals. While animal vectors most likely facilitate dispersal between colonies and populations, the prevailing coastal winds undoubtedly play a part in scattering seed within colonies and populations.

The locations where *Chorizanthe pungens* var. *pungens* occurs, with the exception of one (Soledad), are subject to a mild maritime climate, where fog helps keep summer temperatures cool and winter temperatures relatively warm, and provides moisture in addition to the normal winter rains. *Chorizanthe pungens* var. *pungens* is found in a variety of seemingly disparate habitat types, including active coastal dunes, grassland, scrub, chaparral, and woodland types on interior upland sites; and interior floodplain dunes. However, all of these habitat types include microhabitat characteristics that are suitable for *C. p.* var. *pungens*. First, all sites are on sandy soils; whether the origin of the soils are from active dunes, interior fossil dunes, or floodplain alluvium is apparently unimportant. Second, these sites are relatively open and free of other vegetation. In grassland and oak woodland communities, abundant annual grasses may outcompete *C. p.* var. *pungens*, while management of grass species, either through grazing, mowing or fire, may allow the spineflower to persist. In scrub and chaparral communities, *C. p.* var. *pungens* does not occur under dense stands, but will occur between more widely spaced shrubs.

*Chorizanthe pungens* var. *pungens* is generally distributed along the rim of Monterey Bay in southern Santa Cruz and northern Monterey counties, and inland along the coastal plain of the Salinas Valley. At coastal sites ranging from the Monterey Peninsula north to Manresa State Beach, *C. p.* var. *pungens* is found in active coastal dune systems, and on coastal bluffs upon which windblown sand has been deposited. On coastal dunes, the distribution of suitable habitat is subject to dynamic shifts caused by patterns of dune mobilization, stabilization, and successional trends in coastal dune scrub that increase in cover over time. Accordingly, individual colonies of

*Chorizanthe pungens* var. *pungens*, found in gaps between stands of scrub, shift in distribution and size over time.

Portions of the coastal dune and coastal scrub communities that support *Chorizanthe pungens* var. *pungens* have been eliminated or altered by recreational use, industrial and urban development, and military activities. Dune communities have also been altered in composition by the introduction of non-native species, especially *Carpobrotus* species (sea-fig or iceplant) and *Ammophila arenaria* (European beachgrass), in an attempt to stabilize shifting sands. In the last decade, significant efforts have been made to restore native dune communities, including the elimination of these non-native species.

At more inland sites, *Chorizanthe pungens* var. *pungens* occurs on sandy, well-drained soils in a variety of plant communities, most frequently maritime chaparral, valley oak woodlands, and grasslands. The plant probably has been extirpated from a number of historical locations in the Salinas Valley, primarily due to conversion of the original grasslands and valley oak woodlands to agricultural crops (Reveal & Hardham 1989). Significant populations of *C. p.* var. *pungens* occur on lands that are referred to as former Fort Ord (U.S. Army Corps of Engineers 1992). Within grassland communities, *C. p.* var. *pungens* occurs along roadsides, in firebreaks, and in other disturbed sites, while in oak woodland, chaparral, and scrub communities, it occurs in sandy openings between shrubs. In older stands with a high cover of shrubs, the plants are restricted to roadsides, firebreaks, and trails that bisect these communities. At former Fort Ord, the highest densities of *C. p.* var. *pungens* are located in the central portion of the firing range, where disturbance is the most frequent. This pattern of distribution and densities of the *C. p.* var. *pungens* on former Fort Ord indicates that the very activities that have disturbed *C. p.* var. *pungens* habitat have also created the open conditions that result in high densities of the plant. Prior to onset of human use of this area, *C. p.* var. *pungens* may have been restricted to openings created by wildfires within these communities (Service 1998).

The southwestern edge of *Chorizanthe pungens* var. *pungens* habitat on former Fort Ord was once continuous with habitat found in the community of Del Rey Oaks and at the Monterey Airport (Deb Hillyard, ecologist, California Department of Fish and Game, pers. comm. 2000). Other inland sites that support *C. p.* var.

*pungens* are located in the area between Aptos and La Selva Beach in Santa Cruz County, and near Prunedale in northern Monterey County.

Farther up the Salinas River, *Chorizanthe pungens* var. *pungens* was recently found on a dune located within the river floodplain near Soledad, Monterey County (CNDDDB 2000). Two historic sites for *C. p.* var. *pungens* occur near here. One, near Mission Soledad, was collected once in 1881; the other, near San Lucas along the Salinas River, was collected once in 1935. Due to conversion to agriculture and channelization activities along the Salinas River over the last century, *C. p.* var. *pungens* has most likely been extirpated from these locations. The dune near Soledad is the only one of its size and extent between there and the river mouth (Brad Olsen, East Bay Regional Parks District, pers. comm. 2000).

Pursuant to the Endangered Species Act of 1973, as amended (Act), *Chorizanthe pungens* var. *pungens* was federally listed as threatened on February 4, 1994 (59 FR 5499). On February 15, 2001, we published in the **Federal Register** (66 FR 10440) a rule

proposing critical habitat for the *C. p.* var. *pungens*. Approximately 10,400 hectares (25,000 acres) fall within the boundaries of the proposed critical habitat designation. Proposed critical habitat is located in Santa Cruz and Monterey counties, as described in the proposed rule.

Section 4(b)(2) of the Act requires that the Secretary shall designate or revise critical habitat based upon the best scientific and commercial data available and after taking into consideration the economic impact of specifying any particular area as critical habitat. Based upon the previously published proposal to designate critical habitat for the Monterey spineflower and comments received during the previous comment period, we have prepared a draft economic analysis of the proposed critical habitat designation. The draft economic analysis is available at the above Internet and mailing address.

#### **Public Comments Solicited**

We have reopened the comment period at this time in order to accept the best and most current scientific and commercial data available regarding the proposed critical habitat determination

for the Monterey spineflower and the draft economic analysis of proposed critical habitat determination. Previously submitted written comments on this critical habitat proposal need not be resubmitted. We will accept written comments during this reopened comment period. The current comment period on this proposal closes on October 4, 2001. Written comments may be submitted to the Ventura Fish and Wildlife Office in the **ADDRESSES** section.

#### **Author**

The primary author of this notice is Connie Rutherford, U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, California 93003 (see **ADDRESSES** section).

**Authority:** The authority for this action is the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 7, 2001.

**Daniel S. Walsworth,**

*Acting Manager, California/Nevada Operations Office.*

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