

available, as required by the Act and regulations (section 4(b)(2) and 50 CFR 424.12). We reviewed available information that pertains to the habitat requirements of this species, including information from the final rule listing the species as threatened (67 FR 11442), data from research and survey observations at the known population site, status reports compiled by the Wyoming Natural Diversity Database, the BLM's Resource Management Plan/Environmental Impact Statement for the Lander Resource Area (1986), Geological Survey Bulletins regarding the geology of central Wyoming and the Beaver Rim area, data regarding soils at the known population site, and discussions with botanical experts and BLM employees.

We mapped critical habitat based on U.S. Geological Survey 7.5" quadrangle maps (Dishpan Butte and Sweetwater Station, Wyoming). We included the areas occupied by the subpopulations of *Yermo xanthocephalus* based upon existing maps of the subpopulations, as well as site visits by Service and BLM employees. We included adjacent areas of suitable soils and vegetative communities to allow for maintenance of the seed bank and dispersal. Additionally, we identified areas with topographic features (outcroppings, cliffs, and hills) influencing the microscale dynamics of local winds, erosional processes, and hydrologic processes needed to maintain the integrity of the shallow deflation hollows providing *Y. xanthocephalus* habitat, as well as the sheet wash that provides increased moisture to the habitat. We believe these areas are necessary because of the unstable nature of the landscape (Bynum 1993) and the more mesic nature of the hollows than the surrounding arid landscape (R. Scott, Central Wyoming College, pers. comm. 2002). We delineated the boundary of this area using section lines and quarter-section lines where feasible, in order to facilitate BLM management and enforcement. This designation will also reduce the likelihood that extant populations would be identified and vandalized.

#### Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to propose as critical habitat, we must consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species, and that may require special management considerations or protection. These include, but are not limited to: space for individual and population growth, and for normal

behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, rearing of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. The area proposed as critical habitat for *Yermo xanthocephalus* is within the geographical area presently occupied by the species and contains these physical or biological features (primary constituent elements) essential for the conservation of the species.

Based on our knowledge to date, the primary constituent elements for *Yermo xanthocephalus* consist of, but are not limited to:

(1) Recent soils derived from sandstones and limestones of the Split Rock Formation at its junction with the White River Formation. These are shallow, loamy soils of the Entisol order that can be classified as coarse-loamy over sandy-skeletal, mixed, Lithic Torriorthent. The surface stratum has little organic matter and subsurface layers show no accumulation of humus, clay, gypsum, salts, or carbonates.

(2) Plant communities associated with *Yermo xanthocephalus* that include, but may not be limited to, sparsely-vegetated cushion plant communities with scattered clumps of *Oryzopsis hymenoides* (Indian ricegrass) between 2,043 and 2,073 m (6,700 and 6,800 ft) in Fremont County, Wyoming. Species common to these communities include *Arenaria hookeri* (Hooker's sandwort), *Astragalus kentrophyta* (thistle milkvetch), *Hymenoxys acaulis* (stemless hymenoxys), and *Phlox muscoides* (squarestem phlox). These cushion-plant communities also contain natural openings.

(3) Topographic features/relief (outcroppings, cliffs, and hills) and physical processes, particularly hydrologic processes, that maintain the shape and orientation of the hollows characteristic of *Yermo xanthocephalus* habitat (through microscale dynamics of local winds and erosion) and maintain moisture below the surface of the ground (through sheet wash from the adjacent outcroppings, cliffs, and hills).

#### Criteria Used To Identify Critical Habitat

We identified critical habitat essential for the conservation of *Yermo xanthocephalus* in the only area where it is known to occur. There are no known historic locations for this species. While we acknowledge the high degree of threat that arises from chance catastrophic events given the limited

geographic distribution of this species, we find no compelling evidence that the plant ever existed at other locations. We believe conservation of the species can be achieved through management of threats to the population within this proposed critical habitat.

Given the clustered distribution pattern of *Yermo xanthocephalus* and our assumption that dispersal distances are short and possibly fostered by water erosion, a limited amount of critical habitat is essential for maintenance of the seed bank and dispersal. Additionally, the persistence of the species requires some surrounding habitat to maintain the ecological processes that allow the population and the primary constituent elements to persist.

Even though we did not propose sites other than where the population is currently known to occur, we do not mean to imply that habitat outside the designation is unimportant or may not be required for recovery of the species. Areas that support newly discovered populations in the future, but are outside the critical habitat designation, will continue to be subject to conservation actions that may be implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the prohibitions of section 9 of the Act, as determined on the basis of best available information at the time an action is proposed.

#### Critical Habitat Proposal

The proposed critical habitat area described below constitutes our best assessment at this time of the area essential for the conservation of *Yermo xanthocephalus*. The site includes the only known location where the species currently occurs and, as such, is essential.

The proposed critical habitat is approximately 146 ha (360 ac) of Federal lands managed by BLM in the Beaver Rim area approximately 10 km (6 mi) north of Sweetwater Station in southern Fremont County, Wyoming. Within this area, *Yermo xanthocephalus* occurs in sparsely vegetated cushion-plant communities associated with shallow soils on low slopes, rim margins, colluvial fans, and bottoms within deflation hollows. Additionally, as discussed previously, we included areas supporting topographic features (outcroppings, cliffs, and hills) influencing the microscale dynamics of local winds, erosional processes, and hydrologic processes needed to maintain the integrity of the shallow deflation hollows providing *Y. xanthocephalus* habitat, as well as the