

as this may alter the structure and composition of the grassland community or render the native species more vulnerable to pathogens found in wetter soil regimes.

(3) The associated plant communities must be maintained to ensure that the habitat needs of pollinators and seed dispersal agents are maintained. The use of pesticides should be limited or restricted so that healthy populations of pollinators are present to effect pollination and, therefore, seed set in *Polygonum hickmanii*. The fragmentation of habitat through construction of roads and certain types of fencing should be limited so that dispersal agents may disperse seed of *P. hickmanii* throughout the unit.

(4) Invasive, nonnative species such as brome grasses and other species may need to be actively managed within the grassland community to maintain the patches of open habitat that *Polygonum hickmanii* needs.

(5) Certain areas where *Polygonum hickmanii* occurs may need to be fenced to protect it from accidental or intentional trampling by humans and livestock. While *P. hickmanii* appears to withstand light to moderate disturbance, heavy disturbance may be detrimental to its persistence. Seasonal exclusions may work in certain areas to protect *P. hickmanii* during its critical season of growth and reproduction.

#### Criteria Used To Identify Critical Habitat

To delineate the critical habitat units, we selected areas that provide for the conservation of *Polygonum hickmanii* at the only two sites where it is known to occur, additional suitable habitat, and habitat upslope of these areas to the ridgeline of the subwatersheds. The current range of the species suggests that part of its former range was destroyed by urban development. Additionally, the remaining range of the species is highly restricted, with standing plants currently growing on less than 0.4 ha (1 ac) of land. We believe it is essential to the conservation of the species to preserve all areas that currently support native populations of *P. hickmanii* because the current range of the species is so restricted. However, habitat is not restricted solely to the area where standing individuals can be observed. Habitat for the species must include an area that is large enough to maintain the ecological functions upon which the species depends (e.g., the hydrologic and edaphic conditions for seed germination and establishment, pollinators, and seed dispersers). We believe it is important to designate an area of sufficient size to allow landscape

scale processes to continue that maintain the patches of wildflower field habitat and to minimize the alteration of habitat, such as invasions of nonnative species and recreation-caused erosion, that result from human occupancy and human activities occurring in adjacent areas.

We delineated the critical habitat units by creating data layers in a geographic information system (GIS) format of the areas of known occurrences of *Polygonum hickmanii* using information from the California Natural Diversity Data Base (CNDDB 2000) and the other information sources listed in the Methods section above. These data layers were created on a base of USGS 7.5' quadrangle maps obtained from the State of California's Stephen P. Teale Data Center. Because the areas within proposed critical habitat boundaries were portions of the San Augustin Spanish Land Grant, they have not been surveyed according to the State Plan Coordinate System. Therefore, instead of defining proposed critical habitat boundaries using a grid of township, range, and section, we defined the boundaries for the proposed critical habitat units using known landmarks and roads.

During preparation of the final rule, we found several discrepancies between the legal description of the boundaries of the critical habitat units and the boundaries of the units as depicted in the maps accompanying the proposed rule. The discrepancies resulted primarily through our use of data layers created at a small scale (for example 1:100,000 scale USGS mapping) during preparation of the maps of the proposed critical habitat. For the final rule, we corrected the mapped boundaries of critical habitat first to be consistent with the boundaries as described in the proposed rule. We then modified the boundaries of proposed critical habitat using information on the location of existing developed areas from recent (April 2000) aerial imagery, additional information from botanical experts, and comments on the proposed rule. The boundaries of the final critical habitat units are defined by Universal Transverse Mercator (UTM).

In selecting areas of critical habitat, we made an effort to avoid developed areas, such as housing developments, which are unlikely to contribute to the conservation of *Polygonum hickmanii*. We attempted to map critical habitat for the final rule in sufficient detail to exclude developed areas, or other lands unlikely to contain the primary constituent elements essential for the conservation of *P. hickmanii*. Some other areas within the boundaries of the

mapped units, such as roads, parking lots and other paved areas, lawns, and other urban landscaped areas, will not contain any of the primary constituent elements. Federal actions limited to these areas, therefore would not trigger a section 7 consultation under the Act, unless they affect the species or primary constituent elements in adjacent critical habitat.

#### Critical Habitat Designation

The critical habitat units described below constitute our best assessment at this time of the areas essential for the species' conservation. Critical habitat for *Polygonum hickmanii* is being designated at the only two sites where it is known to occur. Both units are currently occupied with known occurrences of *P. hickmanii*. These areas provide the essential life cycle needs of the species and the habitat components essential for the conservation of *P. hickmanii*. The two units are primarily within the city limits of Scotts Valley in Santa Cruz County with a small portion within an unincorporated area of Santa Cruz County, California, and include the grassland habitat that contains the "wildflower field" patches on which the species depends. Given the threats to the habitat of *P. hickmanii* discussed above, we believe that these areas are likely to require special management considerations and protection.

Because we consider maintaining hydrologic and edaphic conditions so important in these grasslands, the critical habitat area extends outward to the following limits—(1) Upslope from the occurrences of *P. hickmanii* to include the upper limit of the immediate watershed; (2) downslope from the occurrences of *P. hickmanii* to the point at which grassland habitat is replaced by forest habitats (oak forest, redwood forest, or mixed conifer-hardwood forest); and (3) to the boundary of existing development.

Including the upper limit of the watershed highlights the importance of maintaining stability of the slopes above the habitat of the species, because soil disturbing activities in this area could result in erosion and deposition of soils on top of wildflower field habitat, and could also lead to a change in the flow of surface and subsurface water downslope, which could change the amount and timing of water availability to the wildflower field habitat. Including habitat downslope from the wildflower field habitat likewise highlights the importance of maintaining edaphic and hydrologic conditions below the wildflower field patches, because soil disturbing activities in this area could also result