

meadowfoam). These plant species occur in vernal pools and shallow streams or swales in the Cotati Valley of Sonoma County, California. In addition, *Blennosperma bakeri* occurs in the Sonoma Valley, which is southeast and adjacent to the Cotati Valley. *Lasthenia burkei* is also known from Lake County and historically from Mendocino County. These species are in danger of extinction principally as the result of urban development, conversion of native habitats to agriculture ("agland conversion"), competition from alien grasses, overgrazing by livestock, and stochastic (random) extinction by virtue of the small isolated nature of many of the remaining populations. This rule implements the protection and recovery provisions afforded by the Act for these plants.

EFFECTIVE DATE: January 2, 1992.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Sacramento Field Office, 2800 Cottage Way, room E-1803, Sacramento, California 95825.

FOR FURTHER INFORMATION CONTACT: Mr. Jim A. Bartel, at the above address (916/978-4866 of FTS 460-4866).

SUPPLEMENTARY INFORMATION:

Background

Limnanthes vinculans, *Blennosperma bakeri*, and *Lasthenia burkei* are annual plants that occur in vernal pools and intermittent swales (Ornduff 1977a, 1977b; Brown and Jain 1977; Wainright 1984; California Natural Diversity Data Base (CNDDB) 1989; Waaland 1989; Patterson 1990). Vernal pools form in regions with Mediterranean climates where shallow depressions fill with water during fall and winter rains. Downward percolation is prevented by the presence of an impervious subsurface layer, such as a clay bed, hardpan, or volcanic stratum (Holland 1976). Plant species occurring in vernal pools are uniquely adapted to this "amphibious ecosystem," seasonal alteration of very wet and very dry conditions (Zedler 1987, Stone 1990). Upland plants cannot tolerate the temporarily saturated to flooded soils of winter and spring, while the seasonal drying makes the pool basins unsuitable for marsh or aquatic species requiring a permanent source of water. Plants adapted to the vernal pool regime typically germinate when the ground is inundated and flower as the pool dries.

Vernal pools can be found in relative abundance in two regions of California, the Great Central Valley (Hoover 1937) and the coastal terraces of San Diego

County and neighboring northwestern Baja California, Mexico (Zedler 1987). Other vernal pool habitat exists "in the valleys, foothills, and lower montane environments of the Coast and Peninsular Ranges, the Sierra Nevada, the Modoc Plateau, and southwestern Oregon (Stone 1990)." Through seasonal wetlands similar to vernal pools occur in other parts of the world. California's vernal pools are well known because of their unique flora (Stone 1990).

Despite the widespread nature of vernal pools in California, the distribution of these seasonal wetlands is highly discontinuous and fragmented due to differences in climate, substrate, and topography. Moreover, vernal pool plants are frequently narrow endemics because of a "variety of historical, genetic, ecological, and anthropogenic factors (Stone 1990)." This narrow endemism coupled primarily with urbanization and ag-land conversion threatens many of the vernal pool plants in California with extinction.

Blennosperma bakeri, *Lasthenia burkei*, and *Limnanthes vinculans* primarily occur in the Cotati Valley of Sonoma County, California (Waaland 1989), where these species are associated with other common to rare vernal pool plants (e.g., *Downingia concolor*, *D. humilis*, *Navarraetia pliantha*, *Lasthenia glaberrima*, *Perideridia gairdneri* ssp. *gairdneri*, *Pleuropogon davyi*, *P. californicus*, and *Ranunculus lobbii*) (Patterson 1990). In addition, *B. bakeri* occurs in the Sonoma Valley, which is southeast and adjacent to the Cotati Valley. *Lasthenia burkei* is also known from Lake County and historically from Mendocino County. The portion of the Cotati Valley harboring these plants is approximately 16 miles (26 kilometers) long and 5 to 11 miles (8 to 18 kilometers) wide. The valley encompasses approximately 90,000 acres (36,423 hectares) of generally flat, hummocky, rolling terrain. The valley extends north to near Healdsburg and south to the City of Cotati. The range of these plants within the Cotati Valley is bounded on the west by the Laguna de Santa Rosa (a broad tributary of the Russian River) and on the east by low elevation ranges (e.g., Sonoma Mountains). This area is locally known as the Santa Rosa plains. Urbanization, ag-land conversion, and over-grazing by livestock have altered about 90 percent of the original native habitats within the Cotati Valley.

In the Cotati and Sonoma Valleys, vernal pools form on nearly level to slightly sloping loams to clay loams to clays where a clay layer or hardpan approximately 2 to 3 feet (0.6 to 0.9

#167-91

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB42

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Three Plants, *Blennosperma Bakeri* (Sonoma Sunshine or Baker's Stickyseed), *Lasthenia Burkei* (Burke's Goldfields), and *Limnanthes Vinculans* (Sebastopol Meadowfoam)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines endangered status for three plants: *Blennosperma bakeri* (Sonoma sunshine or Baker's stickyseed), *Lasthenia burkei* (Burke's goldfields), and *Limnanthes vinculans* (Sebastopol

meters) below the surface prevents downward percolation (Miller 1972). The Huichica-Wright-Zamora association dominates the soils in the northern portions of these valleys, while the Clear Lake-Reyes and Haire-Diablo associations prevail in the southern portions of the valleys. In contrast, a volcanic layer prevents downward percolation and permits the formation of vernal pools at Manning Flat in Lake County.

Most of the vernal pools or swales of the Cotati Valley are privately owned. One site, the Todd Road Reserve, is owned by the California Department of Fish and Game (Fish and Game) and is managed for the protection of two of the three species, *Blennosperma bakeri* and *Limnanthes vinculans*. Three sites are probably within rights-of-way owned by the California Department of Transportation. Another site is owned by the Sixth Army and managed by the Federal Emergency Management Agency. This small federally-owned parcel, which is adjacent to the Santa Rosa Air Center, contains habitat for *L. vinculans*. Principally as a result of mitigation for urban development, five sites are owned and/or managed by county or city agencies (Patterson 1990). All Lake County sites are privately owned (Patterson 1990). The precise location of the Mendocino County occurrence is unknown, but it is likely extirpated given the age of the specimen and development in the Ukiah area since 1886.

Blennosperma bakeri (Sonoma sunshine or Baker's stickyseed) was first collected by Milo Baker on April 2, 1946, and described by Charles Heiser in 1947 (Heiser 1947). *Blennosperma bakeri*, an annual herb of the sunflower family (Asteraceae), reaches 12 inches (30.5 centimeters) in height (Ornduff 1977b). From March through April, the plants produce yellow daisy-like flowers (Patterson 1990). The yellow disk flowers have white pollen and stigmas. The sterile ray flowers, which are yellow or sometimes white, bear red stigmas. The alternate leaves are narrow, with one to three lobes. The stems and leaves are mostly glabrous (hairless). The shape and presence or number of lobes on the lower leaves and the color of the stigmas of the ray flowers separate *B. bakeri* from another species, *B. nanum*. Based on a compilation of largely incongruous reports (Waaland 1989, Patterson 1990), personal communications (Betty Lovell Guggolz, Milo Baker California Native Plant Society, July 25 and August 2, 1990; Catherine Ashley, botany graduate student, California State University,

Sonoma, and Marco Waaland, Colden Bear Consultants, Santa Rosa, California, May 4, 1990), and other data, the species evidently has been documented from no more than 35 sites in the Cotati Valley and 7 sites from the Sonoma Valley. From north to south in the Cotati Valley, *B. bakeri* ranges from near the community of Fulton to Scenic Avenue, which is between the Cities of Santa Rosa and Cotati (CNDDDB 1989, Waaland 1989, Patterson 1990). In the Sonoma Valley, the species extends or extended from near the community of Glen Ellen to near the junction of State Routes 116 and 121.

Lasthenia burkei (Burke's goldfields) originally was described as *Baeria burkei* by E.L. Greene in 1887 from a specimen collected by J.H. Burke in 1886 from near Ukiah in Mendocino County, California (Greene 1887). Later Greene (1894) placed all *Baeria* in the genus *Lasthenia*, including *L. burkei*. Though Munz (1959) did not recognize *L. burkei* as a distinct taxon, Robert Ornduff (1966) treated the plant as a species in his biosystematic study of *Lasthenia*. In a subsequent paper, Ornduff (1969a) discussed the origin and relationships of *L. burkei*. The species, a small branched annual herb of the sunflower family, blooms from April through June. Both the ray and disk flowers of *L. burkei* are bright yellow, while the pappus of the species usually consists of one long bristle and several short bristles. In similar members of the genus, the pappus usually is absent or consists of two or more long bristles. Based on the same compilation data used to estimate the number of historical *B. bakeri* sites, *L. burkei* evidently has been recorded from no more than 39 sites in the Cotati Valley, 2 sites in Lake County, and 1 site in Mendocino County. From north to south in the Cotati Valley, *L. burkei* ranges from north of the community of Windsor to east of the city of Sebastopol (CNDDDB 1989, Waaland 1989, Patterson 1990). This species also occurs at Manning Flat and Steurmer Winery in Lake County (Patterson 1990). The precise location of the Mendocino County occurrence is unknown, but it is likely extirpated given the year of collection (i.e., 1886) and general development in the Ukiah area since the turn of the century.

Limnanthes vinculans (Sebastopol meadowfoam) apparently was first collected by Mrs. A.E. Alexander from "between Bodega and Petaluma" on April 23, 1946. Ornduff (1969b) described the species from a collection made along Todd Road in Sonoma County by Peter Rubtsoff. *Limnanthes vinculans* is a small (2–12 inches or 5–30.5 centimeters)

multi-stemmed annual herb of the false mermaid family (Limnanthaceae). The first foliage leaves of seedlings are narrow and undivided. Mature plants bear long-petioled pinnately divided leaves with three to five undivided leaflets. The shape of the mature leaves separates *L. vinculans* from other members of the genus. The white flowers are borne singly at the ends of stems. *Limnanthes vinculans* has not been recorded outside of the southwestern portion of the Cotati Valley, where it reportedly has been documented from 29 locations (Guggolz, pers. comm., July 25, 1990). The species ranges from near the community of Graton, east to Santa Rosa, southeast to Scenic Avenue, and southwest to the community of Cunningham; largely surrounding the northern and western perimeter of the City of Sebastopol (Wainright 1984, Waaland 1989, Patterson 1990).

Federal government actions on these three plants began as a result of section 12 of the Endangered Species Act of 1973, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report designated as House Document No. 94-51, was presented to Congress on January 9, 1975. In the report, *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* were included as endangered species. On July 1, 1975 (40 FR 27823), the Service published a notice in the **Federal Register** of its acceptance of the report as a petition within the context of section 4(c)(2) (now Section 4(b)(3)) of the Act and of the Service's intention thereby to review the status of the plant taxa named within. *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* were included in that notice. On June 16, 1976, the Service published a proposed rule in the **Federal Register** (41 FR 24523) to determine approximately 1,700 vascular plant species to be endangered species pursuant to section 4 of the Act. The list of 1,700 plant taxa was assembled on the basis of comments and data received by the Smithsonian Institution and the Service in response to House Document No. 94-51 and the July 1, 1975, **Federal Register** publication. *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* were included in the proposed rule. General comments received in relation to the 1976 proposal were summarized in an April 26, 1978, **Federal Register** publication, which also determined 13 plant species to be endangered or threatened (43 FR 17909).

On December 10, 1979, the Service published a notice of withdrawal of that portion of the June 16, 1976, proposal that had expired due to a procedural requirement of the 1978 amendments. The withdrawal notice included *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans*. On December 15, 1980, the Service published a revised notice of review of native plants in the Federal Register (45 FR 82480); *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* were included as category 1 candidates (species for which data in the Service's possession are sufficient to support a proposal for listing). On November 28, 1983, the Service published in the Federal Register (48 FR 53640) a supplement to the 1980 notice of review. This supplement treated *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* as category 2 candidates (species for which data in the Service's possession indicate listing may be appropriate, but for which additional biological information is needed to support a proposed rule). *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* were included in category 2 in the September 27, 1985, revised notice of review for plants (50 FR 39526). Subsequently, additional survey information and occurrence data was provided on these three species by Marco Waaland (1989) and CNDDDB (1989). In addition, individuals and staff from several agencies provided information on pending projects that would adversely affect these plants.

Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make findings on certain pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires that all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. This was the case for *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans*, because the 1975 Smithsonian report was accepted as a petition. In October 1983, 1984, 1985, 1986, 1987, 1988, and 1989, the Service found that the petitioned listing of *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* was warranted, but that the listing of these species was precluded due to other higher priority listing actions.

On June 6, 1990 (55 FR 23109), the Service published a proposal to list *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* as endangered species. This proposal was based, in large part, on the

aforementioned additional survey information and occurrence data, and information on pending projects that would adversely affect the three plants. The Service now determines *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* to be endangered species with the publication of this rule.

Summary of Comments and Recommendations

In the June 6, 1990, proposed rule (55 FR 23109) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county and city governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices were published inviting general public comment. Though no public hearing was requested, the Service anticipated that it would receive numerous hearing requests. As a result, the Service published (55 FR 28665) a notice of a public hearing on July 12, 1990, and conducted the hearing on July 25, 1990, at the City of Santa Rosa Council Chambers in Santa Rosa, California. Testimony was taken from 6 p.m. to 9 p.m. Notice of the proposal and public hearing were published in the Oakland Tribune, San Francisco Chronicle, and Santa Rosa Press-Democrat.

During the comment period, the Service received 56 comments (e.g., letters and oral testimony) from 42 individuals. Fish and Game was among 18 commenters expressing support for the listing proposal, while 15 commenters opposed or asked for a delay in the listing proposal. Nine commenters were neutral, although some of these individuals provided locality or miscellaneous data on the three plants or inquired as to the possible effects of listing on their activities or interests. Written comments or oral statements obtained during the public hearing and comment period are combined in the following discussion. Opposing comments and other comments questioning the rule have been organized into 13 specific issues. These issues and the Service's response to each are summarized as follows:

Issue 1: Many commenters requested the Service delay or not list the three plants because the "best available data" were not used in the proposed rule. In addition, they variously contended that one study cited in the rule, Waaland (1989), was inadequate, incomplete, inconclusive, ill timed, and/or unscientific. The primary support for

this contention was that Waaland (1989) did not include some population sites known to local individuals, he reportedly underestimated population size because he relied on "windshield surveys," and he did not survey the entire Cotati Valley or the entire ranges of the three plants. Some respondents requested that the Service initiate a comprehensive, scientifically-based study prior to any final listing action. Another commenter requested that an independent review of Patterson (1990) versus Waaland (1989) be conducted prior to any final listing decision. Several commenters, however, asserted that the distribution of the three plants, which has been the subject of botanical study for more than 20 years, is well known and not in need of further study.

Service Response: Aside from previously cited studies (Wainright 1984, Waaland 1989) and reports in the proposed rule, the Service received only three comments providing precise data on vernal pool areas and/or population sites of the three plants. A map submitted by Ralph Osterling (Ralph Osterling Consultants, San Mateo, California, pers. comm., August 3, 1990) detailed 48 pool "sites" west of Santa Rosa in an area included in Waaland's (1989) study. Osterling, however, did not report any new significant pool areas not previously reported in Waaland (1989) or discussed in the proposed rule. Though other commenters did address a larger geographic area than Waaland (1989), Patterson (1990) and Guggolz (pers. comm., August 2, 1990) only reported a few additional population sites. These data have been incorporated into this rule. No commenters provided substantive data to support their claim that Waaland conducted an inappropriate study. Moreover, no new significant distributional data affecting the status of the three species were reported by any respondent. Although future surveys likely will reveal additional small and isolated pool sites within less-accessible portions of the Cotati Valley and other areas known to harbor the three plants (Patterson 1990) these newly discovered sites likely will be threatened by the same activities affecting the other known populations. The Service maintains that this decision is based on the best information available. In addition, the Service believes that sufficient information is available on these three species to warrant making a determination on their status.

Issue 2: Many respondents contended that the proposed rule did not accurately discuss the local success of vernal pool "creation" efforts. For example, one

commenter claimed that Patterson (1990) verified that pool creation is "overwhelming successful for the purpose of relocating the three species," and that a national wildlife refuge proposed by then Congressman Doug Bosco for the Laguna de Santa Rosa would provide an excellent relocation opportunity. Another commenter asserted that "mitigation can be achieved through synthetic habitat enlargement and enhancement," while a third respondent claimed that pool creation efforts "grossly expanded" *Blennosperma bakeri* and *Lasthenia burkei* on his property. On the other hand, one commenter maintained that pool creation is "completely experimental and can fail unpredictably," while others claimed that transplantation projects are too new to be accurately evaluated. Another respondent pointed out that long-term studies of the effect of mixing genotypes in created pools are needed before transplantation should proceed. Furthermore, several commenters felt that protection of the three plants is best assured via the preservation of extant habitat.

Service Response: The Service recognizes that vernal pool creation or transplantation efforts in the Santa Rosa area have not been a failure. *Blennosperma bakeri* and *Lasthenia burkei* introduced into artificial basins have germinated, flowered, and set seed (Patterson 1990). Moreover, even in a drought year, many of the created basins held water (Patterson 1990). However, pool creation efforts in the Santa Rosa region cannot be judged successful by any standard, especially after only 1 to 4 years of monitoring. Of 36 artificial "pools" created at 4 mitigation sites, 11 basins failed (i.e., did not hold sufficient water to maintain introduced pool flora). Nineteen of the remaining 25 artificial pools were plagued with "weeds," hydrologic problems, and low densities of target species, like *B. bakeri* and *L. burkei*, and required remedial action of some kind (Patterson 1990). Regardless of the eventual success of these remedial actions, the effects on "donor" populations evidently have been ignored. Moreover, the principal pool creation technique (i.e., relocation of soil from excavated pool bottoms versus inoculation of a known quantity of seed) and lack of sophistication regarding ongoing monitoring will not allow for the collection of data necessary to determine the long-term viability of target species populations.

In a review of 21 vernal pool creation projects dispersed throughout

California, Ferren and Gevirtz (1990) concluded that no conclusive data exist to substantiate the hypothesis "that vernal pools can be restored or created to provide functional values within the range of variability of natural pools." Though some individuals, like Patterson (1990), have claimed complete or some degree of success, these conclusions are generally based on the attainment of specific, restricted criteria (e.g., ponding, germination and flowering of pool flora) or short-term establishment of target species (Jones & Stokes Associates 1990). In a study on the preservation and management of vernal pools (Jones & Stokes Associates 1990), the researchers concluded that the "science of vernal pool creation is still in its infancy and is primarily an experimental mitigation technique." Given the experimental nature of pool creation, the Service continues to maintain that transplanting target species (e.g., listed species) into constructed vernal pools cannot be viewed as compensation for the loss of occupied pool habitat. Moreover, even if such transplantation and habitat creation were a documented "cookbook" procedure rather than an evolving experiment, artificial pool creation still requires significant money, time, and land with appropriate soils and topography within the historical range of the three plants. As a result, the Service concludes that the continued existence of the three plants can only be assured, at this time, by the preservation of extant vernal pools and their associated watersheds.

Issue 3: Numerous people expressed economic concerns in their comments. One commenter maintained that mitigation requirements should not be the responsibility of the landowner, but "should fall" to the Service and "not hamper production agriculture." Another respondent remarked that the cost of implementing a plan to protect the vernal pool habitat of the three plants would be "onerous". Others discussed the need for compromise regarding mitigation to ensure affordable housing in the Santa Rosa area.

Service Response: Under section 4(b)(1)(A) of the Act, a listing determination must be based solely on the best scientific and commercial data available. The legislative history of this provision clearly states the intent of Congress to "ensure" that listing decisions are "based solely on biological criteria and to prevent non-biological considerations from affecting such decisions" H.R. Rep. No. 97-835, 97th Cong. 2d Sess. 19 (1982). As further stated in the legislative history, "economic considerations have no

relevance to determinations regarding the status of species * * * *Id.* at 20. Because the Service is specifically precluded from considering economic impacts in a final decision on a proposed listing, the Service has not examined such impacts and cannot respond to comments concerning possible economic consequences of listing the three plants.

Issue 4: Several respondents claimed that the three plants are not in immediate danger of extinction. Two respondents remarked that some of the threats have been "overstated" (e.g., trampling), while one commenter asserted that the three plants "have been subjected to only minor disruption from urbanization." Two commenters objected specifically to the reference in the proposed rule that development threatens 50 to 70 percent of remaining ranges of the three species. One respondent stated that agricultural activities were "largely an empty threat." A few commenters suggested that significant vernal pool areas harboring the species are protected. For example, one respondent disagreed with the contention in the proposed rule that no vernal pools have been protected from "all potential threats." This commenter noted that many pool areas are "set aside" with deed restrictions or protected via fee title transfer to Fish and Game. A few respondents noted that colonies of the three plants are protected at two Sonoma County airports. Conversely, one commenter stated that one-quarter of the populations of *Limnanthes vincularis* are threatened by a single action, the City of Santa Rosa's southwest annexation of 4,500 acres. Another commenter implied that no true preserve exists and called for the establishment of a preserve in Sonoma County to prevent the extinction of the three plants.

Service Response: Despite the above protestations, no data were presented to contradict the Service's contention that the three species are imminently threatened by rapid urban development and other threats in Sonoma County (see Factor A in "Summary of Factors Affecting the Species"). The few data submitted during the comment period confirmed the vulnerable status of the three plants. For example, Patterson (1990) stated that "(v)ernal pool habitats and their associated flora continue to decline in both extent and quality in Sonoma County." He reported the loss of three sites to urban development, four to ag-land conversion, and four to neglect and weed encroachment. Patterson (1990) also indicated that

"[o]nly a few sites [harboring one or more of the three plants] are currently protected and only a few natural sites even remain intact." He reported that only 7 of 40 population sites were protected in some fashion. The status of the remaining 33 sites is unknown, extirpated, unprotected, or threatened (Patterson 1990). Based on these data, ongoing and future urban growth may reduce the remaining ranges of the three species in the Santa Rosa region by approximately 65 percent. Guggolz (pers. comm., August 2, 1990) noted that the only protected sites for the three plants are artificially created and/or "airport populations," which may have reduced biological value and are subject to airport-related development and maintenance. Guggolz claimed that some of the so-called protected population sites are jeopardized by adjoining agricultural operations. Patterson (1990) noted that two colonies continue to decline even after being set aside for preservation. Moreover, stochastic events, like the recent prolonged drought, facilitate the invasion of vernal pools by weedy grasses at the expense of the three plants. As discussed in detail in the "Summary of Factors Affecting the Species" section, the Service concludes that nearly all of the remaining populations of the three plants are threatened.

Issue 5: One commenter maintained that seed collection does not threaten the three plants. Another respondent noted that *Limnanthes vinculans* is not threatened by commercial utilization because the species reportedly has been cultivated.

Service Response: The Service stated in the proposed rule and continues to maintain that overutilization of *Limnanthes vinculans* for commercial use is unlikely to constitute a threat (see Factor B in "Summary of Factors Affecting the Species"). Regarding the effect of seed collection, no reliable conclusions can be drawn from available vernal pool research. Despite numerous "pool creation" studies involving extensive seed collection from extant pools throughout California, no study investigated the effect of seed harvest on donor populations.

Issue 6: The utilities department of the City of Santa Rosa contended that their reclamation project will not irrigate wetland areas (e.g., vernal pools) or "rare and endangered plant habitat" with treated wastewater. In addition, the utilities department clarified that the project "does not facilitate growth" but rather "is being developed so as not to constrain general plan growth and to

meet the environmental concerns that come with growth."

Service Response: Though the Service does not see a significant difference between facilitating growth and not constraining general plan growth, the latter phrase is discussed under Factor A in "Summary of Factors Affecting the Species".

Issue 7: One respondent claimed that the three plants "flourished" under "heavy grazing and pasturage by livestock." Other commenters asserted that the maintenance of the three plants required grazing of pool habitat to remove alien grasses. A third commenter indicated that the three species respond variously to differing levels of grazing and other minor surficial disturbances of the soil (e.g., discing).

Service Response: In referring to data from the CNDDDB (1989), the Service reported in the proposed rule that livestock grazing has extirpated or greatly reduced some population localities of *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans*. Nonetheless, the extent of this damage is not fully understood or documented. Zedler (1987) stated that in spite of the adverse impact of trampling, moderate livestock grazing "does not seem to pose much of a threat to the persistence of vernal pool plants." However, he noted that grazing often "promotes the invasion of weedy introduced species that are less palatable and better able than native plants to exploit the disturbed soil created by animals." This observation is in contrast to claims that grazing reduces alien vegetation or selects for native forbs. In a study of the distribution and autecology of a rate subspecies of *Limnanthes* recently proposed for endangered status (56 FR 6345), James Jokerst (1989) said the meadowfoam seemed to persist in areas receiving light to moderate grazing to periodic heavy grazing. He reported that sites receiving intensive long-term grazing were devoid of the *Limnanthes*. The Service concludes that although the effect of moderate livestock grazing remains open to question, overgrazing probably has adversely affected and likely continues to threaten the three plants.

Issue 8: One commenter indicated that the Fish and Game's regulatory process was an "active and effective program for mitigation, enhancement and preservation of these species." However, others contended that the local process has been "houses must go through" and, thus, mitigation has occurred off-site. Other commenters

noted that the City of Santa Rosa and County of Sonoma are developing a Country-wide mitigation plan for the three plants, though one respondent stated that both governments have had ample opportunity to provide a local resolution to necessary vernal pool protection. Other commenters maintained that local control of this issue (i.e., protection and mitigation of vernal pool habitat) should continue and that the Service's proposed listing of the three plants has prompted the restarting of this effort. One respondent stated that the "preservation" of the three plants has been "well served" by the U.S. Army Corps of Engineers (Corps), Fish and Game, and local government. This commenter noted that the Corps frequently requires 1:1 or greater mitigation (i.e., pool creation) for wetland fills falling within the parameters of Nationwide Permit Number 26 pursuant to section 404 of the Clean Water Act. Another commenter reported that 92 percent of the vernal pools surveyed in the Santa Rosa plains are under an acre in size and, thus, would fall within limits of a nationwide permit.

Service Response: On June 2, 1988, the Service met with representatives of the City of Santa Rosa and local biologists regarding the development of a comprehensive vernal pool preservation program. Despite the recent establishment of the Sonoma County Vernal Pools Task Force, little progress has been made towards a comprehensive program since that time. With the cooperation of the City of Santa Rosa and County of Sonoma, Fish and Game funded a study of the vernal pools of the Santa Rosa plains. Nonetheless, the State agency indicated that without the provisions of Federal listing (e.g., recovery monies, development of recovery plans), the three plants are "in danger of extinction." See the discussion under Factor D ("Summary of Factors Affecting the Species") for a complete discussion of the inadequacy of existing regulatory mechanisms for *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans*.

Issue 9: One respondent recommended that the Service designate critical habitat for the three plants, while another commenter contended that designation could lead to destruction of vernal pools by landowners and developers.

Service Response: Under section 4(a)(3)(A) of the Act, the Secretary must designate critical habitat to the maximum extent prudent and determinable at the time a species is

determined to be endangered or threatened. In the proposed rule, the Service found that determination of critical habitat was not prudent for these species. As discussed under the "Critical Habitat" section below, the Service continues to find that designation of critical habitat for these plants is not prudent at this time, because such designation likely would increase the degree of threat from vandalism, collecting, or other human activities.

Issue 10: One commenter requested that the Service conduct a Takings Implications Assessment under Executive Order 12630 "as part of any final rulemaking to evaluate the risk of and strategies for the avoidance of the taking of private property."

Service Response: Regarding Executive Order 12630, Governmental Actions and Interference with Constitutionally Protected Property Rights, and Attorney General has issued guidelines to the Department of the Interior (Department) on implementation of the Executive Order. Under these guidelines, a special rule applies when an agency within the Department is required by law to act without exercising its usual discretion—that is, to act solely upon specified criteria that leave the agency no discretion.

In this context, an agency's action might be subject to legal challenge if it did not consider or act upon economic data. Therefore, in these cases, the Attorney General's guidelines state that Taking Implications Assessment (TIAs) shall be prepared after, rather than before, the agency makes the decision upon which its discretion is restricted. The purpose of TIAs in these special circumstances is to inform policymakers of areas where unavoidable taking exposures exist. Such TIAs shall not be considered in the making of administrative decisions that must, by law, be made without regard to their economic impact. In enacting the Endangered Species Act, Congress required the Department to list species based solely upon scientific and commercial data indicating whether or not they are in danger of extinction. The Service is forbidden by law from withholding a listing based on concerns regarding economic impact and is required to act, with appropriate public notice, under strict timetables. Any failure to comply subjects the agency to legal action. The provisions of the guidelines relating to nondiscretionary actions clearly are applicable to the determination of endangered status for the three plant species that are the subject of this rule.

Issue 11: One commenter indicated that taxonomic studies and status surveys should be completed for all members of each genus (*Blennosperma*, *Lasthenia*, and *Limnanthes*) of the three plant species. Absent this action, the commenter implied listing should be deferred.

Service Response: The Service used the best taxonomic and status information for each of the three plants. These data came from a number of reliable sources: university researcher (Ornduff 1966, 1969a, 1969b, 1977a, 1977b; Jain 1976; Brown and Jain 1977), a Service-contracted researcher (Wainright 1984), local biologists (e.g., Waaland 1989, Patterson 1990), a State-operated data base (CNDDB 1989), and commenters on the proposed rule (e.g., Guggolz, pers. comm., August 2, 1990). After reviewing and assessing this information, the Service maintains that the taxonomic and threat status is conclusive and listing should not be deferred.

Issue 12: One commenter stated it would be "unreasonable" to protect one species of *Blennosperma*, *Lasthenia*, or *Limnanthes* and not other widespread members of the three genera (e.g., *B. nanum*).

Service Response: Pursuant to the definitions in section 3 of the Act, an "endangered species" is "any species which is in danger of extinction throughout all or a significant portion of its range." A "threatened species" is "any species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* are species that fit the former definition, whereas other species of *Blennosperma*, *Lasthenia*, and *Limnanthes* do not meet the requirements of the Act. Given that section 4 of the Act directs the Service to list species fitting these definitions and meeting one or more of the five factors discussed below, designation of the three plants as endangered is reasonable.

Issue 13: One respondent requested that the Service include a recovery plan for the three plants in any final rulemaking. Furthermore, she requested that the plan provide section 7 guidelines for the various Federal agencies, detail a mechanism for intergovernmental cooperation with Fish and Game, and address "biological solutions" like transplantation.

Service Response: Section 4(f) of the Act directs the Secretary to develop and implement recovery plans for the conservation and survival of listed

endangered and threatened species. Though the Service intends to pursue the development of a recovery plan for the three plants as soon as possible, such action must occur after the species have been listed pursuant to section 4(b). Section 4(f)(1)(B) requires that each recovery plan include: 1) a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species; 2) objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and 3) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and achieve intermediate steps toward the goal. As a result, the recovery plan will describe a process to provide for the interagency cooperation among local, State, and Federal agencies. In addition, the plan will address all appropriate solutions needed to recover the three plants.

Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act (16 U.S.C. 1533) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Blennosperma bakeri* Heiser (Sonoma sunshine or Baker's stickseed), *Lasthenia burkei* (Greene) Greene (Burke's goldfields), and *Limnanthes vinculans* Ornduff (Sebastopol meadowfoam) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Their Habitat or Range

Blennosperma bakeri, *Lasthenia burkei*, and *Limnanthes vinculans* were once discontinuously distributed in the vernal pools and interconnecting vernal swales in the Cotati Valley from north of Windsor to near the City of Cotati, a distance of approximately 16 miles (25.7 kilometers) (Wainright 1984, CNDDB 1989, Waaland 1989, Patterson 1990). The area supporting the three plants is threatened by urbanization, ag-land conversion, and overgrazing (CNDDB 1989, Waaland 1989). About 40 percent of this valley has already been urbanized and about 50 percent of the land is irrigated for agricultural purposes (Waaland 1989). Because little

overlap exists between irrigated and urbanized portions in the Cotati Valley, about 90 percent of the land has been altered to the detriment of the three plants.

The County of Sonoma has approved the Windsor Specific Plan that allows for extensive development in Windsor. This plan does not provide adequate protection of the plants. The complete development of the Windsor Specific Plan would result in the loss of most, if not all, of the northern remaining localities of *Lasthenia burkei*, and, therefore, approximately 35 percent of the plant's known range.

Many ongoing housing development projects near the City of Santa Rosa are resulting in the further losses of *Lasthenia burkei*, *Limnanthes vinculans*, and *Blennosperma bakeri*. Because housing in the Cotati Valley is relatively inexpensive, individuals working in the San Francisco Bay area are discovering that affordable housing can be found in the Santa Rosa area. The demand for such housing has resulted in the rapid urbanization of much of the Cotati Valley, especially in and around Santa Rosa. Based on Patterson's (1990) assessment of the extent of protected habitat, ongoing and future urban growth may reduce the remaining ranges of the three species in the Santa Rosa region by approximately 65 percent. Unfortunately, more than half of the "protected" vernal pool habitat discussed by Patterson (1990) occurs on Sonoma County Airport lands, which have been and continue to be subject to airport-related maintenance and development. For example, Patterson (1990) reported that the entire airport was graded in the 1940's, which likely altered or destroyed these pools. In addition, with the exception of the Todd Road Reserve owned by Fish and Game, the remaining "preserves" largely consist of "created" vernal pools. The long-term viability and biological value of this artificial habitat is unknown.

Habitat loss is not limited to the direct destruction caused by grading and leveling or other activities that fill the pools for urban or agricultural purposes. Plant species that occur in vernal pools are dependent upon maintenance of the existing hydrologic regime—inundation during wet winters, followed by spring and summer drying. The composition of plant species in vernal pools or swales can change if the hydrologic regime is altered. The subsurface clay layer or hardpan can be broken during construction or plowing. Water would drain from such pools rather than remain ponded for a few months. Upland invasive plant species can

spread into these pools when conditions become sufficiently dry. A prolonged drought can effect similar dry conditions within pool basins. Conversely, if water from urban or agricultural run-off continues to fill pools during spring and summer months, invasion by plant species adapted to permanent inundation can be expected.

The City of Santa Rosa proposes to increase the capacity of its Subregional Wastewater Treatment Plant so as to not "constrain general plan growth and to meet the environmental concerns that come with growth" (Miles Ferris, City of Santa Rosa, Utilities Department, pers. comm., July 30, 1990). Reclaimed waste water is used for "agricultural irrigation of 4,800 acres" in the Santa Rosa area (Ferris, pers. comm., July 30, 1990). The proposed expanded facility would provide irrigation or overland flow to an additional 7,500 acres (Griffes *et al.* 1989). The treatment facility design includes the use of terraces that would be planted with a grass species that is tolerant of inundation. Sewage effluent would be used to irrigate the terraces for treatment purposes. The resulting run-off would be reclaimed and used for further irrigation. The potential area designated for the placement of terraces or receipt of reclaimed wastewater extends from the northern boundary of the City of Santa Rosa to the south covering the southern two-thirds of the range of these plant species. Although no vernal pool lands are to be irrigated or subject to overland flow (Ferris, pers. comm., July 30, 1990), impacts to vernal pools would occur indirectly by eliminating a major constraint (i.e., insufficient wastewater treatment capacity to further urbanization in the Santa Rosa region).

These plant species are similarly threatened outside of the Cotati Valley. The extirpation of *Blennosperma bakeri* from four of seven historic sites in the Sonoma Valley was caused by home construction and the planting of a vineyard (CNDDDB 1989; Guggolz, pers. comm., August 2, 1990). The remaining sites are either threatened by the ag-land conversion or have been "vandalized by off road vehicles" (Guggolz, pers. comm., August 2, 1990). Manning Flat, one of the two known Lake County sites of *Lasthenia burkei*, is threatened by erosion. The Ukiah collection of *L. burkei* in Mendocino County is likely extirpated.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The three species possess attractive flowers, and some plant species have become vulnerable to illegal collection

for scientific or horticultural purposes or excessive visits by individuals interested in seeing rare plants following Federal listing.

All species of *Limnanthes* have the potential to be of high agronomic value because of the oil contained within their seeds. Because the lubricating qualities of *Limnanthes* oil are retained under high temperature and pressure, the seed oil is similar to that produced by sperm whales (Jain *et al.* 1977). Although no overutilization is known to have occurred in this regard, the increased publicity brought about by listing could make *Limnanthes viculans* vulnerable to collection.

C. Disease or Predation

Though livestock graze many of the sites that support *Limnanthes vinculans*, *Lasthenia burkei*, and *Blennosperma bakeri*, local biologists disagree on the effect of grazing on the three species. Osterling (pers. comm., August 3, 1990) noted that populations have "flourished" under "grazing and pasturage" pressure. Patterson (1990) asserted that "the removal of grazing" threatens *Lasthenia burkei* because livestock reduce the cover of competing grasses (i.e., *Hordeum*, *Lolium*, *Pleuropogon*). Acknowledging that the effect of grazing is not well known, he suggested that *Blennosperma bakeri* may be similarly affected. However, Patterson (1990) concluded that livestock crush *Limnanthes vinculans* and eliminate much of plant cover associated with the species. According to various individuals filing data with the CNDDDB (1989), some populations have been extirpated or greatly reduced by foraging livestock. Nevertheless, all of these conclusions are based on casual observations and not on carefully designed experiments. In light of studies discussed in the "Summary of Comments and Recommendations" section, although the effect of moderate livestock grazing remains open to question, overgrazing probably has adversely affected and likely continues to threaten the three plants.

D. The Inadequacy of Existing Regulatory Mechanisms

Under the Native Plant Protection Act (Chapter 1.5 § 1900 *et seq.* of the Fish and Game Code) and California Endangered Species Act (Chapter 1.5 § 2050 *et seq.*), the California Department of Fish and Game has listed two of these three species (*Lasthenia burkei* and *Limnanthes vinculans*) as endangered (14 California Code of Regulations 670.2), while the third species (*Blennosperma bakeri*) is a State

candidate. Though both statutes prohibit the "take" of State-listed plants (Chapter 1.5 §§ 1908 and 2080), State law appears to exempt the taking of such plants via habitat modification or land use change by the landowner. After the Fish and Game notifies a landowner that a State-listed plant grows on his or her property, State law evidently requires only that the landowner notify the agency "at least 10 days in advance of changing the land use to allow salvage of such plant" (Chapter 1.5 § 1913).

Part of the environmental review process under the California Environmental Quality Act (CEQA) for projects that result in the loss of sites supporting these plant species generally includes the development of mitigation plans. Such plans usually involve the transplantation of the affected species to an off-site vernal pool location and/or the artificial creation of vernal pools. As discussed in the "Summary of Comments and Recommendations" section, these transplantation and creation efforts are experimental in nature and cannot be viewed as compensation for the loss of extant habitat. Nonetheless, following development of the transplantation and creation plan, the original site is destroyed. As a result, CEQA has not prevented the rapid ongoing loss of vernal pool habitat in the Santa Rosa region.

Under section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (Corps) regulates the discharge of fill into waters of the United States, including wetlands. To be in compliance with the Clean Water Act, applicants are required to notify the Corps prior to undertaking any activity (e.g., grading, discharge of soil or other fill material) that would result in the fill of wetlands under the Corps' jurisdiction. Nationwide Permit Number 26 (see 33 CFR 330.5(a)(26)) has been issued to regulate the fill of wetlands that are 1-10 acres in size. Where fill would occur in a wetland 1-10 acres in size, the Corps circulates for comment a pre-discharge notification to the Service and other interested parties prior to determining whether or not the proposed fill activity qualifies under Nationwide Permit Number 26. Because the Corps must respond within 20 days or the proposed activity will be authorized under Nationwide Permit Number 26, many projects may be authorized by default.

Individual permits are required for the discharge of fill into wetlands that are greater than 10 acres in size. The review process for the issuance of individual permits is more extensive, and

conditions may be included that require the avoidance or mitigation of environmental impacts. The Corps has discretionary authority and can require an applicant to seek an individual permit if the Corps believes that the resources are sufficiently important, regardless of the wetland's size. In practice, the Corps rarely requires an individual permit when a project would qualify for a nationwide permit.

With respect to the vernal pools harboring the three species, most vernal pools and swales in the Cotati Valley encompass less than 10 acres. Moreover, the discontinuous distribution of the pools and swales has allowed landowners in the past to divide large projects into several smaller projects. The wetland acreage on these smaller projects is usually under 10 acres, and, therefore, most projects have qualified for Nationwide Permit Number 26. The discontinuous configuration of the pools and swales further obscures the separation of these wetland losses. Although the San Francisco District of the Corps has not asserted its jurisdictional authority and required individual permits for all projects filling vernal pools or swales, the Corps, by proposing to add a condition to Nationwide Permit Number 26 on September 13, 1991, would require a pre-discharge notice for any fill, regardless of size, in the Cotati Valley.

Even though the Corps has proposed implementation of pre-discharge notification, listing affords greater protection to threatened or endangered species. With listing, the Corps (and other Federal agencies) is required to consult with the Service prior to final determination on a proposed activity.

E. Other Natural or Manmade Factors Affecting Their Continued Existence

Trampling associated with grazing has reduced some populations of the three plant species (CNDDDB 1989, Patterson 1990). In addition, a few of the pools supporting these species are adjacent to roadways. Routine maintenance of the road shoulders may adversely affect the plant species through grading or application of herbicides.

Alien grasses and forbs invaded the low-elevation, plant communities of California during the days of the Franciscan missionaries. Today, these grasses can account for 50 to 90 percent of the vegetative cover (Heady 1956) and stand up to a meter (3.3 feet) in height (Holland 1976). By germinating or initiating growth in late fall prior to the germination of native forbs, alien grasses have outcompeted (for nutrients and water) and displaced much of the native flora throughout California.

Although Zedler (1987) reported that vernal pools are "relatively immune" to the competition of alien plants, Patterson (1990) asserted that dense stands of alien grasses threaten many of the populations of the three plants in the Cotati Valley. The effect of grazing livestock (see Factor C "Summary of Factors Affecting the Species") in concert with the ubiquitous presence of alien plants on the three species needs further study.

Natural fluctuations in rainfall patterns resulting in little to no water in the vernal pools may effect localized extinctions or population declines (Patterson 1990). Though climatic-induced extirpations have not been documented for *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans*, the small isolated nature of the remaining populations make stochastic extinction more likely. A prolonged drought of several years is the most likely stochastic phenomenon that would result in the localized extinction of vernal pool plants like the three species.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by these species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Blennosperma bakeri*, *Lasthenia burkei*, and *Limnanthes vinculans* as endangered. The habitat that supports these plant species has been reduced by about 90 percent, and further reductions are anticipated. With the possible exception of the Todd Road Reserve, no vernal pool habitat is protected from all potential threats discussed above. Existing regulations do not provide sufficient protection to prevent further losses, and many actions are ongoing at the present time. Further, several sites have recently been graded or disced, apparently without appropriate permits. Six of 14 high priority sites identified by Waaland (1989) have been destroyed. In addition, Patterson (1990) reported that the status of 33 of 40 sites in the Cotati Valley is unknown, extirpated, unprotected, or threatened. Because these three plants are in danger of extinction throughout all or a significant portion of their ranges, they fit the definition of endangered as defined in the Act. For the reasons discussed below, the Service is not proposing to designate critical habitat for these plant species at this time.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent

prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that determination of critical habitat is not prudent for these species at this time. The three species occur primarily on private land that is undergoing rapid urban and agricultural development (see Factor A in "Summary of Factors Affecting the Species"), and their habitat areas are usually small and easily identified. The information contained in a status survey prepared by Waaland (1989) may have been used to destroy about 12 sites supporting these species in recent months. Therefore, the publication of precise maps and descriptions of critical habitat in the *Federal Register* would make these plants more vulnerable to incidents of vandalism and could contribute to the decline of these species. A listing of these species are endangered would also publicize the rarity of these plants and, thus, could make them attractive to researchers or collectors of rare plants. The proper agencies have been notified of the locations and management needs of these plants. Landowners will be notified of the location and importance of protecting habitat of these species. Protection of these species' habitats will be addressed through the recovery process and through the section 7 consultation process. Therefore, the Service finds that designation of critical habitat for these plants is not prudent at this time, because such designation likely would increase the degree of threat from vandalism, collecting, or other human activities.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered

or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The U.S. Army Corps of Engineers will become involved with these plant species through its permitting authority as described under section 404 of the Clean Water Act. By regulation, nationwide or individual permits cannot be issued where a federally listed endangered or threatened species would be affected by a proposed project without first completing formal consultation pursuant to section 7 of the Act. In addition, the Department of Housing and Urban Development may wish to insure housing loans in areas that support these plants; the funding of these loans would also be subject to review by the Service under section 7 of the Act. The Federal Emergency Management Agency manages a small federally-owned parcel adjacent to the Santa Rosa Air Center that contains habitat for *Limnanthes vinculans*. Any action affecting these vernal pools would be subject to section 7 review. The Bureau of Reclamation proposes to lend the City of Santa Rosa funds for the expansion of the wastewater treatment facility. Other sewage treatment facilities within the range of these species may receive funding through the Bureau of Reclamation or Environmental Protection Agency. This funding would also be subject to the requirements of section 7 of the Act.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 for endangered plant species set forth a series of general prohibitions and exceptions that apply to all endangered plants. With respect to the three vernal pool plants, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal with respect to any endangered plant for any person subject to the jurisdiction of the United States to import or export; transport in interstate or foreign commerce in the course of a commercial activity; sell or offer for sale in interstate or foreign commerce; remove and reduce to possession any

such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any area under Federal jurisdiction; or remove, cut, dig up, damage, or destroy any such species on any other area in knowing violation of any State law or regulation, or in the course of any violation of a State criminal trespass law. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered plant species under certain circumstances. The Service anticipates that few trade permits would ever be sought or issued for any of the three species. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, room 432, Arlington, Virginia 22203-3507 (703/358-2104 or FTS 921-2104).

National Environmental Policy Act

The Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

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List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulations Promulgation

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations is amended as set forth below:

1. The authority citation for part 17 continues to read as follows:
Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.
2. Amend § 17.12(h) by adding the following species, in alphabetical order under the family "Asteraceae—Aster family" and by adding a new family "Limnanthaceae—False mermaid family", in alphabetical order, to the List of Endangered and Threatened Plants:

17.12 Endangered and threatened plants.
* * * * *
(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Asteraceae—Aster family:						
<i>Blennosperma blanket</i>	Sonoma sunshine (=Baker's stickyseed).	U.S.A. (CA).....	E	453	NA	NA
<i>Lasthenia burkei</i>	Burke's goldfields	U.S.A. (CA).....	E	453	NA	NA
Limnanthaceae—False mermaid family:						
<i>Limnanthes vinculans</i>	Sebastopol meadowfoam.....	U.S.A. (CA).....	E	453	NA	NA

Dated: November 19, 1991.
Richard N. Smith,
Acting Director, Fish and Wildlife Service.
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