Dated: July 27, 1994.

Mollie H. Beattie,

Director, U.S. Fish and Wildlife Service.

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50 CFR Part 17

RIN 1018–AC65 156-94

Endangered and Threatened Wildlife and Plants; Proposed Rule to List Two Plants From Southwestern California as Endangered and Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Fish and Wildlife Service (Service) proposes to list *Downingia concolor* var. *brevior* (Cuyamaca Lake downingia) as endangered and *Limnanthes gracilis* ssp. *parishii* (Parish's meadowfoam) as threatened throughout their respective ranges in southwestern California pursuant to the Endangered Species Act of 1973, as amended (Act). These species occur in vernally moist soils of montane wet meadows, near springs and seeps, or vernal pools within the Peninsular Ranges of southwestern California. These plants are imperiled by a variety of factors including alteration of wetland hydrology, cattle grazing, recreational activities, recreational development, off-road vehicle activity, and competition from exotic plant species. This proposed rule, if made final, would extend protection under the Act to these two plants. Critical habitat is not being proposed at this time. Additional data and information, which may assist the Service in making a final decision on this proposed action, is solicited on the status of these species.

DATES: Comments from all interested parties must be received by October 3, 1994. Public hearing requests must be received by September 19, 1994.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Avenue West, Carlsbad, California 92008. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ms. Debbie Kinsinger, Botanist, at the above address (telephone 619/431–9440).

SUPPLEMENTARY INFORMATION:

Background

Downingia concolor var. *brevior* (Cuyamaca Lake downingia) and *Limnanthes gracilis* ssp. *parishii* (Parish's meadowfoam) occur in association with meadows and drainages of the Peninsular Ranges of southwestern California from the Santa Ana Mountains of extreme southwestern Riverside County, south to the Laguna Mountains of southern San Diego County, California. Both plant taxa are restricted to grassy meadows that are vernally wet (wet during the rainy season) with saturated soil conditions and shallow pools for several weeks at a time. Between the ponded areas are drier mounds, called mima mounds. This type of physiography is referred to as a montane meadow-vernal pool association.

The largest populations of both taxa are located within the Cuyamaca Valley in the Cuyamaca Mountains of central San Diego County, California. Although the vernal pool and mima mound topography is mostly obliterated, much of the unique, montane, vernal pool flora remains. This flora includes a number of disjunct species that are more frequently associated with vernal pools of coastal San Diego County or central California (e.g., *Deschampsia danthonioides* (annual hairgrass), *Blennosperma nanum* (common blennosperma), and *Delphinium hesperium* ssp. *cuyamacae* (Cuyamaca larkspur) (Beauchamp 1986a, Winter 1991)).

Historically, a depression at the southwestern end of the Cuyamaca Valley formed a small lake that dried up in the summer. This area was referred to as "Laguna Que Se Seca" (the lake that dries up) (Allen and Curto 1987). This area and the rest of the valley supported a complex of vernal pools and mima mounds. A dam was built in 1886 at the Boulder Creek outlet of Cuyamaca Lake. The dam created a permanent reservoir known as Cuyamaca Lake. A dike built in 1967 allowed water to be pumped from the reservoir so that the valley could be kept in a flooded condition throughout the summer (Ball et al., unpub. man.). In wet years, the reservoir and dike system allows the entire valley to remain flooded for extended periods (Bauder 1992). Many areas supporting these taxa have been moderately to heavily grazed in the past and some areas continue to be adversely affected by livestock and horses. For example, heavy grazing in the Laguna Mountains since the 1880's has resulted in the increased abundance of introduced annual grasses and forbs, the scarcity of organic matter, and severe gullying and erosion (Sproul 1979).

Downingia concolor var. *brevior* (Cuyamaca Lake downingia) was described by R. McVaugh (1941) based on a collection by L. Abrams at Cuyamaca Lake, Cuyamaca Mountains, San Diego County, California. Beauchamp (1986b) elevated the plant to a subspecies following the suggestions of Thorne (1978). However, Ayers (1993) also recognized this plant as *D. c.* var. *brevior* following McVaugh's (1941) treatment of this taxon.

Downingia concolor var. *brevior* is a member of the bellflower family (Campanulaceae). This plant is a low, slightly succulent annual herb, with stems 5 to 20 centimeters (cm) (2 to 8 inches (in)) long. The flowers are blue and white with a 4-sided purple spot at the base of the united petals. The fruit is 12 to 15 mm (0.5 in) long and the seeds have linear striations (lines). *D. concolor* var. *brevior* blooms from May to July and sets seed from June to August. The seeds are dispersed by flooding and require brief inundation for germination (Munz 1974, Bauder 1992).

Downingia concolor var. *brevior* can be distinguished from the only other member of this genus that occurs in southern California, *D. cuspidata*, by the form of the striations on the seed and by the color of the flower. It can be distinguished from the more northern *D. concolor* var. *concolor* by the size of the fruit and how rapidly the fruit splits open when the seeds are mature (Ayers 1993).

Downingia concolor var. *brevior* is restricted to a single population at Cuyamaca Lake in the Cuyamaca Valley of San Diego County, California on land owned by the Lake Cuyamaca Recreation and Park District. Historically, the population of *D. concolor* var. *brevior* was located throughout much of the valley floor. This population has now been largely restricted to the shore of the lake, penetrating into the valley floor during dry years. From 1988 to 1992 one population existed in the vicinity of Cuyamaca Lake, consisting of between 9 and 24 stands. Combined, these stands occupied less than 200 acres and frequently occupied less than 100 acres. The number of individuals within these stands, and the location and size of these stands vary in any given year in response to rainfall, the extent of winter flooding, and temperature (Bauder 1992).

Limnanthes gracilis ssp. *parishii* (Parish's meadowfoam) was first

described by W.L. Jepson (1936) as *Limnanthes versicolor* var. parishii. The description was based on specimens collected by S.B. Parish at the Stonewall Mine on the southern edge of the Cuyamaca Valley, San Diego County, California. Mason (1952) recognized *L. versicolor* var. *parishii* as *L. gracilis* var. *parishii*, based on flower and fruit morphology. Beauchamp (1986b) elevated the plant to a subspecies based on consistency with other treatments of this genus, and the geographic separation (over 1,200 kilometers (km) (800 miles (mi)) from *L.g.* ssp. gracilis, which is found in southern Oregon.

Limnanthes gracilis ssp. *parishii* is a member of the meadowfoam family (Limnanthaceae), a small family of wetland species found primarily along the Pacific coast of North America. The plant is a low, widely branching annual with stems 10 to 20 cm (4 to 8 in) long. The leaves are 2 to 6 cm (0.5 to 2 in) long and divided. The flowers are bowl-shaped, the petals are 8 to 10 mm (0.25 to 0.5 in) long with a white or occasionally with a cream-colored base that becomes pink (Ornduff 1993). The fruit is rough textured. *L. gracilis* ssp. *parishii* blooms from April through May, setting seed in the late spring and early summer. Germination requires saturated soils or inundation (Munz 1974, Bauder 1992).

The range of *Limnanthes gracilis* ssp. *parishii* is separated by over 480 km (300 mi) from any other species of *Limnanthes*. *L.g.* ssp. *parishii* is distinguished morphologically from *L.g.* ssp. *gracilis* by its smaller flowers, broader sepals, and smooth nutlets (Abrams 1951, Mason 1952).

Limnanthes gracilis ssp. *parishii* is restricted to moist montane meadows, mudflats, and along stream courses in the Palomar, Cuyamaca, and Laguna mountains of San Diego County, California. Fewer than 20 populations of this taxon exist. The largest population occurs in the Cuyamaca Valley in the vicinity of Cuyamaca Lake and Stonewall Creek and is restricted to the shore of Cuyamaca Lake at maximum inundation. The majority of this population is on private lands but extends onto California State Parks and Recreation lands.

Historically, the Cuyamaca Valley population of *Limnanthes gracilis* ssp. *parishii* occurred throughout much of the valley floor. Recently, the Cuyamaca Valley population of *L. gracilis* ssp. *parishii* was described as consisting of 100 stands by Bauder (1992), and 8 small populations by the California Natural Diversity Data Base (CNDDB) (1992). However, these smaller groupings are contiguous, separated by less than 1.5 km (1 mi), and concentrated within a 9 square km (4 square mi) area. Approximately 120 hectares (ha) (300 acres (ac)) of a potential 800 ha (2,000 ac) of the Cuyamaca Valley and Stonewall Creek area are occupied by *L. gracilis* ssp. *parishii*. The number of individuals and the location and size of stands within this area varies in any given year in response to rainfall, the extent of winter flooding, and temperature (Bauder 1992). Under favorable conditions, *L. gracilis* ssp. *parishii* can be a conspicuous element of the Cuyamaca Valley during the spring bloom (Craig Rieser, Pacific Southwest Biological Services, pers. comm., 1993).

Other populations of *Limnanthes gracilis* ssp. *parishii* are considerably smaller, both in number of individuals and the extent of occupied habitat relative to the Cuyamaca Valley population. They range in size from less than 2 ha (5 ac) to as much as 40 ha (100 ac) in extent, and most populations contain fewer than 1000 individuals. At least five of these other populations occur on National Forest lands. A single isolated population is located in vernal pools on the Santa Rosa Plateau of southwestern Riverside County, California. This area of approximately 2 ha (5 ac) is managed by The Nature Conservancy (TNC). One additional population has been introduced to National Forest lands in the Laguna Mountains from seeds gathered from the Cuyamaca Valley population (Winter 1991, CNDDB 1992).

Previous Federal Action

Federal government action on the two plant taxa considered in this rule 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, and presented to Congress on January 9, 1975, recommended *Limnanthes gracilis* var. *parishii* (= *L.g.* ssp. *parishii*) for endangered status. The Service published a notice in the July 1, 1975, **Federal Register** (40 FR 27823), of its acceptance of the report as a petition within the context of section 4(c)(2) (now section 4(b)(3)(A)) of the Act, and of the Service's intention to review the status of the plant taxa named therein, including *L.g.* ssp. *parishii*. The Service published a proposal in the June 16, 1976, **Federal Register** (42 FR 24523) to determine approximately 1,700 vascular plants to be endangered species pursuant to section 4 of the Act. *Limnanthes gracilis* ssp. *parishii* was included in this **Federal Register** notice.

General comments received in response to the 1976 proposal were summarized in an April 26, 1978, **Federal Register** notice (43 FR 17909). The Endangered Species Act amendments of 1978 required all proposals over 2 years old to be withdrawn, although a 1-year grace period was given to those proposals. In the December 10, 1979, **Federal Register** (44 FR 70796), the Service published a notice of withdrawal for that portion of the June 6, 1976, proposal that had not been made final and which included *L. g.* ssp. *parishii*.

The Service published an updated Notice of Review of Plants in the **Federal Register** on December 15, 1980 (45 FR 82480). This notice included *Downingia concolor* var. *brevior* and *Limnanthes gracilis* ssp. *parishii* as category 1 candidate taxa (species for which data in the Service's possession are sufficient to support a proposal for listing). On November 28, 1983, the Service published a supplement to the Notice of Review of Plants in the **Federal Register** (48 FR 53640). This notice was again revised on September 27, 1985 (50 FR 39526). Both plant taxa were included in 1983 and 1985 supplements to the Notice of Review of Plants as category 2 candidate taxa (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). The Notice of Review of Plants was again revised on February 21, 1990 (55 FR 6184), and again on September 30, 1993 (58 FR 51144). *Downingia concolor* var. *brevior* was included as a category 1 candidate taxon, and *Limnanthes gracilis* ssp. *parishii* as a category 2 candidate taxon in both notices.

Section 4(b)(3)(B) of the Endangered Species Act of 1973, as amended in 1982, requires the Secretary to make findings on 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 *Limnanthes gracilis* ssp. *parishii* because the 1975 Smithsonian report had been accepted as a petition. On October 13, 1983, the Service found that the petitioned listing of this species was warranted but precluded by other pending listing proposals of higher priority, pursuant to section 4(b)(3)(B)(iii) of the Act. Notification of this finding was published in the **Federal Register** on January 20, 1984 (49 FR 2485). Such a finding requires

the petition to be recycled, pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed in October of 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, and 1992.

The Service made a final "not warranted" finding on the 1975 petition with respect to *L. g.* ssp. *parishii* and 864 other species in the December 9, 1993, **Federal Register** (58 FR 64828–45). One reason was cited as the basis for this finding on this species that was based upon data not then available to the Service in late summer 1993: current threats (i.e., the five factors described below under 50 CFR 424.11) throughout a significant portion of the species' range. The species was retained in Category 2 on the basis that it may be subject to extinction or endangerment from uncontrolled loss of habitat or from other man-caused changes to its environment (58 FR 64840). Since the summer of 1993, the Service has completed or obtained survey and other data that adequately describe those factors that are placing *L. g.* ssp. *parishii* at risk of extinction. The Service has proceeded to propose this species along with the Lake Cuyamaca downingia that occupies the same general part of southern California.

On December 14, 1990, the Service received a petition dated December 5, 1990, from Mr. David Hogan of the San Diego Biodiversity Project, to list *Downingia concolor* ssp. *brevior* (=*D. c.* var. *brevior)* as an endangered species. The petitioner also requested the designation of critical habitat for this species. The Service evaluated the petitioner's requested action for *D. c.* var. *brevior* and published a 90-day finding on August 30, 1991 (56 FR 42968) that substantial information existed indicating that the requested action may be warranted. Publication of this proposal constitutes the final finding that the petitioned action is warranted for this species.

Summary of Factors Affecting the Species

Section 4 of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) 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) and 50 CFR 424.11. These factors and their application to *Downingia concolor* E. Greene var. *brevior* McVaugh (Cuyamaca Lake downingia) and *Limnanthes gracilis* Howell ssp. *parishii* (Jepson) Beauch (Parish's meadowfoam) are as follows:

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

Impacts that result in the loss, degradation, and fragmentation of vernally moist wet meadows are contributing to the decline of *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior*. The habitat for both these taxa is threatened by recreational developments, off-road vehicle use, trampling, alterations of hydrology and the introduction of exotic plants.

Historically, montane wet meadow and vernal pool habitats were much more abundant in the Peninsular Ranges of San Diego County (Winter 1991). The wet meadows surrounding Cuyamaca Lake reservoir support the most significant populations of *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior*. The entire Cuyamaca Valley was originally a montane meadow-vernal pool complex. Dredging during dam construction in 1886 altered the natural topography of the valley and its vernal pools. Mima mounds were likely excavated since "much of the earth used for the dam was taken from the meadow north of the dam and from the valley floor" (Allen and Curto 1987). Later, 160 ha (400 ac) of the valley outside the reservoir was leased from Helix Water District and planted in grain.

Loss of wet meadow habitat continues as a result of excessive water inundation at Cuyamaca Lake reservoir and within Cuyamaca Valley above the dike. Studies of *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior*, conducted between 1988 and 1992, have demonstrated that extended inundation at Cuyamaca Lake caused extirpation of stands for these two species (Bauder 1992). The reservoir provides domestic water, flood control, and recreational activities such as fishing and duck hunting. These uses are administered through agreements between the Helix Water District, the City of San Diego's El Capitan Reservoir, and Lake Cuyamaca Recreation and Park District (Bauder 1992). Approximately 81 ha (150 ac) of potential meadow habitat are permanently inundated. The system of dikes built in 1967 allows an additional 273 ha (675 ac) to be inundated for extended periods of time during periods of high precipitation; that occurred as recently as 1993 (Hugh Marks, Cuyamaca Lake Recreation and Parks District Manager, pers. comm., 1993). *L. gracilis* ssp. *parishii* is less able to recover from excessive inundation than *D. concolor* var. *brevior*, *as shown by the lack of re-establishment in areas of previous inundation (Bauder 1992).*

A variety of indirect impacts are associated with the diversion of water entering the Cuyamaca Lake reservoir basin. Diversion often results in the alteration of small drainages by down cutting and streambank erosion, which contributes to the loss of potentially suitable habitat upstream of Cuyamaca Lake. Fluctuating lake levels also increase channel erosion by changing the gradient and velocity of surrounding drainages. Erosion is further intensified by the decrease in groundwater levels caused by numerous wells in the area. When streamflow velocities are high, *Downingia* and *Limnanthes* seeds and plants can be buried or washed away. In dry years, meadows exposed by the receding shoreline dry prematurely as the groundwater level falls. Roads without adequate culverts also divert water flow. Road maintenance and herbicidal weed abatement often preclude the re-establishment of seeds in areas of suitable habitat (Bauder 1992). In addition, the alteration of hydrology in Cuyamaca Valley promotes the invasion of exotic species (e.g., Lolium perenne (ryegrass) and *Poa pratensis* (Kentucky bluegrass)) known to displace native plant species. These indirect effects can have significant, long-term impacts on the meadow habitats and associated sensitive plant species.

Direct loss of both species' habitat at the reservoir is substantial. For example, a parking lot and a campground on the south end of Cuyamaca Lake reservoir at Los Caballos have displaced habitat (Bauder 1992). The Prado campground on the Cleveland National Forest also displaced *Limnanthes gracilis* ssp. *parishii* (Devoree Volgarino, Cleveland National Forest, pers. comm., 1993). The construction of a Boy Scout trail in 1976 destroyed a population of *L. g.* ssp. *parishii* in Canebrake Canyon, north of Cuyamaca Lake (CNDDB 1992). A trail around the perimeter of Cuyamaca Lake bisects several populations of both species (Ellen Bauder, Ph.D., Department of Biology, San Diego State University, pers. comm., 1993).

Several large wet meadows in the Laguna Mountains of the Cleveland National Forest support *Limnanthes gracilis* ssp. *parishii*. However, the creation of two shallow reservoirs in these meadows have resulted in year round inundation of potential *L.g.* ssp. *parishii* habitat (Winter 1991).

Traffic from off-road vehicles, horses, and hikers in the Laguna Mountain meadows indirectly impacts *Limnanthes gracilis* ssp. *parishii* by

altering the composition of the plant community over time. Such damage frequently occurs in spring when the soils are saturated and subject to compaction (Winter 1991). Loss and modification of *L. gracilis* ssp. *parishii* habitat has been documented as a result of trampling, erosion, and alteration of hydrology at most of the locations occupied by this species (Bauder 1992). *L. gracilis* ssp. *parishii* may be more subject to trampling than *Downingia concolor* var. *brevior* because it grows around the drier periphery of meadows. Some equestrian camps in Laguna Mountain meadows have displaced habitat of *L. g.* ssp. *parishii*, and its proximity to other camps has resulted in trampling (Bauder 1992).

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

Overutilization is not known to be a threat to the two plant taxa under consideration in this proposed rule. Vandalism or collection are not known to threaten these species.

C. Disease or Predation

Disease is not known to be a factor affecting the taxa under consideration in this rule. Consumption of individual plants by grazing animals has been known to impact the reproduction of these annual plants and has had other affects, such as trampling, erosion (see Factor A) and the introduction of non-native species (see Factor E). Grazing was discontinued on Helix Water District-owned lands at Cuyamaca Lake in 1986 when *Downingia concolor* var. *brevior* was believed to be extinct as a result of grazing (David Hogan, San Diego Biodiversity Project, *in litt.*, 1990; Joseph Young, Helix Water District, pers. comm., 1993). The plant re-established itself the following season (Bauder 1992). Livestock grazing was terminated in Cuyamaca State Park in 1956, with the exception of a 16 ha (40 ac) parcel that was grazed until 1980 when it was acquired by the State Park. Grazing still continues on privately owned pastures east of the reservoir. The Cleveland National Forest still allows grazing in these sensitive meadows but recently adopted late season grazing regimes to avoid loss of individual plants due to actual consumption (Volgarino, pers. comm., 1993).

D. The Inadequacy of Existing Regulatory Mechanisms

Existing regulatory mechanisms that could provide some protection for these species include: (1) listing under the California Endangered Species Act (CESA); (2) the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA); (3) conservation provisions under section 404 of the Federal Clean Water Act (CWA) and section 1603 of the California Fish and Game Code, (4) occurrence with other species protected by the Federal Endangered Species Act; (5) land acquisition and management by Federal, State, or local agencies, or by private groups and organizations, and (6) local laws and regulations.

The California Fish and Game Commission has listed *Downingia concolor* var. *brevior* and *Limnanthes gracilis* ssp. *parishii* as endangered under the Native Plant Protection Act (NPPA) (Div. 2, chapter 10, section 1900 *et seq.* of the California Fish and Game Code) and the California Endangered Species Act (CESA) (Div. 3, chapter 1.5 section 2050 *et seq.*). After the California Department of Fish and Game notifies a landowner that a State-listed plant occurs on his or her property, the Fish and Game Code 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 10, section 1913, California Fish and Game Code). Therefore, although NPPA and CESA both prohibit the "take" of State-listed plants (Chapter 10, sections 1908 and Chapter 1.5, section 2080, California Fish and Game Code), these statutes are not adequate to protect the taking of such plants via habitat modification or land use change by the landowner.

The California Environmental Quality Act (CEQA) (Public Resources Code, section 21000 *et seq.*) requires full disclosure of the potential environmental impacts of proposed projects. The public agency with primary authority or jurisdiction over the project is designated as the lead agency and is responsible for conducting a review of the project and for consulting with the other agencies concerned with the resources affected by the project. CEQA documentation is often inadequate or incomplete, and compliance with CEQA is not monitored. Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." However, even if significant effects are identified, the lead agency has the option to require mitigation through changes in the project or to decide that "overriding social and economic considerations" make mitigation infeasible (California Public Resources Code, Guidelines, section 15093). In the latter case, projects may be approved that cause significant environmental damage, such as destruction of endangered plant species. Protection of listed plant species under CEQA is therefore dependent upon the discretion of the lead agency, hence, this is not adequate to ensure the survival of a species.

The Cuyamaca Recreation and Park District is the lead agency that is empowered to uphold and enforce CEQA regulations at Cuyamaca Lake reservoir. However, unresolved conflicts exist regarding the use of this area for recreation and habitat protection for state endangered species. The Cuyamaca Recreation and Park District receives funding from CDFG, State Bonds, California Division of Parks and Recreation, U.S. National Park Service Land and Water Grants, and other sources, which have been used to stock the reservoir with fish, build duck blinds, a boat ramp, picnic facilities and a fishing trail around the western portion of the reservoir between the dam and the dike. Projects that use state money must comply with CEQA on each project or funding can be withdrawn. Impacts to *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* occur during implementation of these projects and may continue to occur as a result of maintenance and use of these facilities. The Cuyamaca Recreation and Park District, acting as the state lead agency, has issued negative declarations for its improvement and maintenance activities, which exempts them from the requirement for a full environmental analysis. Other signatory state agencies have not monitored CEQA compliance by the Cuyamaca Recreation and Park District (Jack Shu, California State Parks Department, pers. comm., 1993). These factors have resulted in removal of plants and habitat loss as discussed in factor A above.

While CEQA pertains to projects on non-Federal land, the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 to 4347) requires disclosure of the environmental effects of projects within Federal jurisdiction. Species that are listed by the State, but not proposed or listed as threatened or endangered by the Federal government, are not protected when a proposed Federal action meets the criterion for a "categorical exclusion". NEPA requires that each of the project alternatives recommend ways to "protect, restore and enhance the environment" and "avoid and minimize any possible adverse effects" when implementation poses significant adverse impacts. However, it does not require that the lead agency select an alternative with

the least significant impacts to the environment (40 CFR 1500 *et seq.*). Federal actions that may affect Federal threatened or endangered species require consultation with the Fish and Wildlife Service under section 7 of the Endangered Species Act and must avoid jeopardizing the continued existence of a listed plant species and destruction or adverse modification of critical habitat.

The Cuyamaca Recreation and Park District is also subject to NEPA because projects for recreational improvements may be funded through the Federal Land and Water Grant program that is administered by the National Park Service through the California Department of Parks and Recreation. These projects would require NEPA review. Land-use planning decisions at the local level are made on the basis of environmental review documents prepared in accordance with CEQA or NEPA that often do not adequately address "cumulative" impacts to non-listed species and their habitat. State listed species that are candidates for Federal listing receive no special consideration under NEPA.

Section 1603 of the California Fish and Game Code authorizes the Department of Fish and Game to regulate streambed alteration. The Department must be notified and approve any work that diverts, alters, or obstructs the natural flow or changes the bed, channel, or banks of any river, stream, or lake. If the Department does not respond within 30 days of the notification, the applicant may proceed with the work. All waterways of the State, including streams, intermittent streams, rivers, and lakes are subject to the Department's jurisdiction. However, the Department of Fish and Game does not consider the creation of wetlands for duck habitat to be regulated under section 1603. Thus, a Streambed Alteration Agreement was not required for flooding the streambed above Cuyamaca Lake reservoir for that purpose. Because the dam has been used continuously since its construction in 1886, justification of its continued use for recreation has been grandfathered into law (William D. Smith, Lake Cuyamaca Recreation and Park District, *in litt.*, 1993). Therefore, *Limnanthes gracilis* ssp. *parishii and Downingia concolor* var. *brevior* receive no protection under section 1603.

Section 404 of the Clean Water Act authorizes the Army Corps of Engineers (Corps) to regulate discharge of dredge or fill materials into waters of the United States, including wetlands. The objective of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (Pub. L. 92–500), which include navigable and isolated waters, headwaters, and adjacent wetlands. However, no specific provisions exist that adequately address the need to conserve candidate species. Therefore, *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* currently receive no special consideration under section 404.

Even though some of the areas surrounding Cuyamaca Lake reservoir are wetlands, water management activities are not regulated under section 404 of the Clean Water Act, and these activities have the potential to adversely affect the two taxa under consideration in this proposed rule. Several small water impoundments in streams around Cuyamaca Lake reservoir may qualify for authorization under Nationwide Permit (NWP) No. 26 of the Clean Water Act if they are less than one acre (0.4 ha) in size. Because projects affecting such streams or wetlands may proceed without notifying the Corps, evaluation of their impacts under section 404 is precluded. An individual permit may be required by the Corps if projects otherwise qualifying under NWP 26 are likely to have significant environmental impacts. However, the Corps is generally reluctant to withhold authorization under NWP 26 unless the existence of a Federally listed species is likely to be jeopardized or if the action impacts a vernal pool (Bruce Henderson, Army Corps of Engineers, pers. comm., 1993).

Section 404 of the Clean Water Act regulates clearing of vegetation by mechanical means (e.g., bulldozing) but does not currently regulate any method of clearing that does not disturb the soil or channel bottom. Thus, the ongoing use of herbicides to remove vegetation from Cuyamaca Lake reservoir is not regulated under section 404, although water quality certification must be obtained from the Regional Water Quality Control Board under section 401 of the Clean Water Act (Bruce Henderson, pers. comm., 1993).

Limnanthes gracilis ssp. *parishii* and *Downingia concolor* var. *brevior* have been exposed to artificial flooding and draining of their habitat, herbicides, and trampling from maintenance vehicles and recreational activities. For these reasons, the Service finds that these species currently receive inadequate protection under section 404 of the Clean Water Act and section 1603 of the California Fish and Game Code.

No federally listed species inhabit vernally wet meadows in the Peninsular Ranges of southern California. Therefore, these two species proposed for listing receive no federal regulatory protection resulting from sympatry with listed species.

Limnanthes gracilis ssp. *parishii* is recognized by the Cleveland National Forest as a "sensitive species" (Winter 1991). The Cleveland National Forest has policies to protect sensitive plant taxa under its jurisdiction, including attempting to establish these species in unoccupied but suitable or historic habitat, encouraging land ownership adjustments to acquire and protect sensitive plant habitat, conserving meadow water tables, and protecting montane meadow habitats (Winter 1991). However, these guidelines have not been entirely effective. For example, implementation of plans to supply an equestrian campground with water from a well at Filaree Flat in the Laguna Mountains may alter meadow hydrology (Volgarino, pers. comm., 1993). The Cleveland National Forest has addressed trampling impacts to *L.g.* ssp. *parishii* by placing interpretive signs and fencing around populations at the Shrine Camp, Prado campgrounds, and Morris Ranch meadow. In addition, an alternative location for a proposed campground at Filaree Flat is being considered to avoid impacts to *L.g.* ssp. *parishii*. A late season grazing regime has been enacted at several of these meadows (Winter 1991; Volgarino, pers. comm., 1993). Fencing sensitive habitat areas minimizes impacts but does not prevent entry by hikers or mountain bikers. In some cases, plants that remain unprotected within campgrounds are severely trampled by campers. While Forest Service management practices have reduced impacts in certain areas, the majority of *L.g.* ssp. *parishii* populations are located on private lands that currently do not receive adequate protection. No populations of *Downingia concolor* var. *brevior* occur on lands under Forest Service jurisdiction.

The California Department of Parks and Recreation has eliminated grazing from meadows containing *Limnanthes gracilis* ssp. *parishii* at Cuyamaca State Park. However, other impacts to these species and their habitat continue to occur in this area, including trampling by horses, unauthorized trails, vehicle parking, off-road vehicle use, diversion of water flow, erosion, channelization, and water impoundment. No habitat has been set aside exclusively for the protection of *D. concolor* var. *brevior* (Bauder 1992).

The Santa Rosa Plateau Preserve is managed by The Nature Conservancy for the long-term protection of sensitive species. However, only a single, small population of *Limnanthes gracilis* ssp. *parishii* is located within the preserve.

Local laws and regulations are insufficient to protect habitat for *Downingia concolor* var. *brevior* and *Limnanthes gracilis* ssp. *parishii*. For example, the County of San Diego generally does not provide protection for sensitive plant species unless they are actually Federally listed (Hogan, pers. comm., 1993).

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Stochastic extinction threatens both *Downingia concolor* var. *brevior* and *Limnanthes gracilis* ssp. *parishii* by virtue of their small population size and restricted distribution. The likelihood of finding a normal distribution of genetic variability is reduced in small populations (Jensen 1987). Reduced genetic variability may lower the ability of these populations to survive. The potential for local extirpation due to small population size can be exacerbated by environmental conditions such as drought, flooding, or fire (Gilpin and Soule 1986, Falk and Holsinger 1991).

Due to their accessibility, populations of these two taxa are particularly vulnerable to trampling. As discussed under factor A above, trampling from cattle occurs in meadows occupied by *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* in the National Forest and private land holdings. As discussed under factor D above, several measures were initiated during the past decade to protect the vernally wet meadow ecosystem and associated sensitive plant species at Cuyamaca State Park and the Cleveland National Forest. However, these measures have not prevented trampling by hikers and horses.

Introduced species of grasses and forbs have invaded many of California's plant communities. Such weedy species can displace the native flora by out competing them for nutrients, water, light, and space. Weedy plant invasions are facilitated by disturbances such as grazing, urban and residential developments, and various recreational activities. Introduced weeds have become established in many portions of the Laguna Mountains thereby reducing the amount of suitable habitat for native plant species (Sproul 1979). For example, the invasion of exotic species including *Lolium perenne* (ryegrass) and *Poa pratensis* (Kentucky bluegrass) has altered the composition of habitats supporting the two plant taxa under consideration in this proposed rule (Sproul 1979).

Trampling by livestock typically changes the composition of native plant communities by reducing or eliminating those species that cannot withstand trampling and predation (see Factors A and C), and enabling more resistant (usually exotic) species to increase in abundance. Introduction of seed from non-sterile hay and animal feces increases the likelihood of invasion of exotic species and prevents re-establishment of native plants. Taxa that were not previously part of the native flora may be introduced and flourish under a grazing regime and may reduce or eliminate native plant species through competition for resources. Grazing is considered to be a threat to all populations of *Limnanthes gracilis* ssp. *parishii* within the Cleveland National Forest, primarily as a result of trampling and the invasion of non-native species into sensitive plant habitats (Winter 1991).

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 Service finds that *Downingia concolor* var. *brevior* is in imminent danger of extinction throughout all or a significant portion of its range due to habitat destruction and degradation resulting from hydrologic alterations, grazing, trampling by recreational activities, the inadequacy of existing regulatory mechanisms, an increased probability of stochastic extinction, and competition from exotic plant species. The Service considered threatened status for this species, but determined that it such status would not be in keeping with the purposes of the Act because the single remaining population consists of only 8 to 23 stands within a restricted range, and is at risk of extirpation due to stochastic events such as water inundation. Therefore, the preferred action is to list *Downingia concolor* var. *brevior* as endangered.

For the reasons discussed below, the Service finds that *Limnanthes gracilis* ssp. *parishii* is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Threats to this taxon include the following: habitat destruction and degradation resulting from hydrologic alterations, grazing, trampling by recreational activities, the inadequacy of existing regulatory mechanisms, stochastic extinction, and competition from exotic plant species. The Service has determined that threatened rather than endangered status is appropriate for *L.g.* ssp. *parishii* primarily because the California Department of Parks and Recreation, the Cleveland National Forest, and The Nature Conservancy have initiated some measures to protect this species. Within these areas, management activities have included fencing, signing, and monitoring of habitat supporting *L.g.* ssp. *parishii*. However, most localities containing this taxon remain vulnerable to trespass and trampling and to hydrologic alterations. The largest population of this species occurs mostly on private lands that are not protected. For these reasons, the Service finds that *L.g.* ssp. *parishii* is likely to become endangered in the foreseeable future if present threats and declines continue. The alternative of not listing these species would result in inadequate protection for these species, and would be inconsistent with the purposes of the Act. For the reasons discussed below, the Service is not proposing to designate critical habitat for these 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 propose designation of critical habitat at the time a species is proposed for listing as endangered or threatened. Section 4(b)(6)(C) further indicates that a concurrent critical habitat designation is not required if the Service finds that a prompt determination of endangered or threatened status is essential to the conservation of the involved species, or that critical habitat is not then determinable. The Service finds that designation of critical habitat for *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* is prudent but not presently determinable. Within 2 years of the publication date of this rule the Service will designate critical habitat unless the designation is found to be not prudent.

The Service intends to propose designation of critical habitat for those populations of *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* that would not likely be imperiled by the threat of vandalism, collecting, or other human activities. Section 7(a)(2) of the Act requires Federal agencies to insure that their actions are not likely to destroy or adversely modify critical habitat, or jeopardize the continued existence of a listed species. On lands subject to Federal funding, authorization, or licensing, critical habitat would provide an added benefit to the conservation of these species. The populations of *L. gracilis* ssp. *parishii* and *D. concolor* var. *brevior* on land owned by the Cuyamaca Recreation and Park District, land subject to funding through the National Park Service and the five populations of *L. gracilis* ssp. *parishii*

on National Forest land would receive this added benefit from critical habitat designation. On non-federal land, additional protection may be provided as a result of the increased public awareness afforded by the critical habitat designation. In addition, the designation of critical habitat could be useful for State landowners and local regulatory agencies to identify areas of special concern and to establish priorities for land management and acquisition. Designation of critical habitat would be likely to result in more attention and hence protection by the State and county agencies (J. Shu, pers. comm., 1994).

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service must evaluate the effects of activities that occur within the ranges of these plants, and gather data on precise habitat requirements and ownership boundaries in order to precisely define the critical habitat of these two plant taxa. In addition, the Service must analyze the economics impacts that could result from the designation of particular areas as critical habitat. Designation of critical habitat for *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* is currently not determinable due to the need for this type of information. A proposal to designate critical habitat at this time would delay this proposed rule to list the species as threatened or endangered. The Service finds that a prompt determination of endangered or threatened status for these species is essential to ensure the full benefits of conservation measures under the Act. The Service intends to propose a critical habitat designation at a later date. After receiving additional information, the Service may determine that designation of critical habitat is not prudent for *L. gracilis* ssp. *parishii* or *D. concolor* var. *brevior*.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants 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)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such 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.

Federal agencies expected to have involvement with *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior* include the Forest Service, Army Corps of Engineers, and National Park Service. These agencies either administer lands containing these species or authorize, fund, or otherwise conduct activities that may affect these species. In addition, the allocation of funding through the Federal Emergency Management Act, Housing and Urban Development, Federal mortgage programs, and the Veteran's Administration may be involved with these species.

The Act and its implementing regulations found at 50 CFR section 17.61, 17.62, and 17.63 for endangered, and 17.71 and 17.72 for threatened species, set forth a series of general prohibitions and exceptions that apply to all endangered or threatened plants. With respect to *Downingia concolor* var. *brevior* and *Limnanthes gracilis* ssp. *parishii*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 or 17.71, would apply. These prohibitions, in part, make it illegal 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 any such species in interstate or foreign commerce, or to remove and reduce to possession any such species from areas under Federal jurisdiction.

Seeds from cultivated specimens of threatened plant species are exempt from these prohibitions provided that a statement of "cultivated origin" appears on their containers. In addition, for listed plants, the 1988 amendments (Pub. L. 100–478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of listed plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62, 17.63, and 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered or threatened species under certain circumstances.

Permits may be issued to carry out otherwise prohibited activities involving endangered or threatened plants under certain circumstances. Regulations governing permits are codified at 50 CFR 17.62 and 17.63. Such permits are available for scientific purposes, to enhance the propagation or survival of the species. Trade permits will not likely be sought or issued for any of the plant species considered herein because they are not in cultivation.

Requests for copies of the regulations on plants and inquiries regarding them should be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon, 97232–4181 (telephone 503/231–6241).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Limnanthes gracilis* ssp. *parishii* and *Downingia concolor* var. *brevior*.

(2) The location of any additional populations of these species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of these species; and

(4) Current or planned activities in the subject area and their possible impacts on these species.

The final decision on this proposal will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor of the Carlsbad Field Office (see ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife 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).

References Cited

A complete list of all references cited herein is available upon request from the U.S. Fish and Wildlife Service, Carlsbad Field Office (see ADDRESSES above).

Author

This rule was prepared by the staff of the Carlsbad Field Office (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of chapter I, title 50 of the Code of Federal Regulations, 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. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under the families indicated, 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					
*	*	*	*	*	*	*
Campanulaceae—Bellflower family:						
*	*	*	*	*	*	*
Downingia concolor var. *brevior.*	Cuyamaca Lake downingia	U.S.A. (CA)	E		NA	NA
*	*	*	*	*	*	*
Limnanthaceae—False mermaid family:						
*	*	*	*	*	*	*
Limnanthes gracilis ssp. *parishii.*	Parish's meadowfoam	U.S.A. (CA)	T		NA	NA
*	*	*	*	*	*	*

Dated: July 26, 1994.

Mollie H. Beattie,

Director, Fish and Wildlife Service.

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