Analysis of information provided in the petition and information in our files: The use of rotenone in the Friant-Kern Canal has not occurred since 1988, and there are no future plans for this practice to occur again (Peter Moyle, University of California-Davis, pers. comm. 2004). Other than this one-time poisoning event, the petition did not provide any information regarding the use of chemicals or poisons within close proximity to known occurrences of the Kern brook lamprey. Because of a lack of information regarding activities that could cause a poisoning event within the range of the Kern brook lamprey, as well as a lack of information on the spatial distribution patterns of the species, it is speculative to state that a single event, such as a chemical spill, could cause the extirpation of the species from an entire river system, or significantly reduce the population or range of the species.

Summary

The petition to list the four lamprey species primarily provides information about the Pacific lamprey, and information specific to the Kern brook lamprey is lacking. The petition did not present substantial information that indicates rangewide declines, a reduction in population numbers, or threats to existing Kern brook lamprey populations that place them in danger of extinction now or in the foreseeable future.

According to the petition, many of the threats to the Pacific lamprey would also apply to the Kern brook lamprey. Threats to the Pacific lamprey, as described by the petition, included dams and artificial barriers, passage at road culverts, dredging, streambed scouring and degradation from logging activities, poisoning, water diversions, channelization, and ocean conditions. Of these reported threats, there are only four for which the petition specifically addresses the Kern brook lamprey (poisoning, water diversions, channelization, and lack of regulatory mechanisms regarding water law and stream flow regulation). While these threats may affect populations of this species, the information provided in the petition was speculative in nature and not substantiated. The petition did not provide specific information to document the degree that the species has been affected by these threats, or if these threats have led to a significant decline in the range or distribution of the species or are likely to do so in the future.

There is a lack of survey information supporting reliable population and distribution estimates for this recently described species. The petition did not provide historical or current data to compare abundance of the Kern brook lamprey in any of the rivers where it is known to occur. We are not aware of quantitative documentation from surveys that shows declines in Kern brook lamprey populations or a reduction in range. In addition, the surveys that we are aware of which have recorded Kern brook lamprey, did not use a consistent level of effort in collecting Kern brook lamprey, occurred over periods of time that were too short in duration to establish trends, or used data that may be based on ammocoete counts where the surveyed species, whether the Kern brook lamprey, western brook lamprey, or Pacific lamprey were misidentified. Therefore, population and distribution trends at this time are not known.

All of the known occurrences of Kern brook lamprey, with the exception of the population above Pine Flat Reservoir on the Kings River, are below major dams. The petition stated that these dams are not managed to meet the biological needs of the Kern brook lamprey. However, the petition did not provide information on how stream flows below the four dams are managed and how these management practices affect the population status and distribution of the Kern brook lamprey. The petition provides no evidence that the operation of these dams has led to a significant decline in either population sizes or range of the species, or is likely to do so in the future.

Finding

We have reviewed the petition and supporting literature, as well as other literature and information available in our files. The petition and other information available did not present substantial information that indicates rangewide declines, a substantial reduction in population numbers, or substantiated threats to existing populations that rise to the level that indicate the Kern brook lamprey is either in imminent danger of extinction, or likely to become so in the foreseeable future.

We will continue to monitor available information on the species, and maintain the option of initiating listing procedures in the future should such an action become necessary. We ask the public to submit to us any new information that becomes available concerning the status of this species. If you wish to provide materials concerning this finding, submit them to the Field Supervisor, Sacramento Fish and Wildlife Office (see **ADDRESSES** section above).

Literature Cited

A complete list of all references cited herein is available, upon request, from the Sacramento Fish and Wildlife Office (see **ADDRESSES** section above).

Author

The primary author of this notice is the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service (see **ADDRESSES** section above).

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

Dated: December 20, 2004.

Marshall P. Jones, Jr.,

Deputy Director, Fish and Wildlife Service.

[FR Doc. 04–28162 Filed 12–23–04; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition To List Three Species of Lampreys as Threatened or Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 90-day finding on a petition to list three species of lampreys: Pacific lamprey (*Lampetra tridentata*), western brook lamprey (*Lampetra richardsoni*), and river lamprey (*Lampetra ayresii*), as threatened or endangered under the Endangered Species Act of 1973, as amended (Act). We find that the petition and additional information in our files does not present substantial scientific or commercial information indicating that listing these species may be warranted. We will not be initiating a further status review in response to this petition. We ask the public to submit to us any new information that becomes available concerning the status of or threats to the species. This information will help us monitor and encourage the conservation of these species.

The Kern brook lamprey (*Lampetra hubbsi*) was also identified in the petition. However, this species is being addressed in a separate finding, which is being prepared by the Sacramento Fish and Wildlife Office in California, and is not addressed in this notice.

DATES: The finding announced in this document was made on December 27,

2004. You may submit new information concerning this species for our consideration at any time.

ADDRESSES: Data, information, or questions concerning this petition or this 90-day finding should be sent to Kemper McMaster, State Supervisor, Oregon Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2600 SE. 98th Avenue, Suite 100, Portland, OR 97266. The petition finding and supporting information are available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Bianca Streif, Lamprey Coordinator, Oregon Fish and Wildlife Office (see **ADDRESSES** section above) (telephone 503/231–6179; facsimile 503/231–6195).

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(A) of the Act requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial information to indicate that the petitioned action may be warranted. To the maximum extent practicable, this finding is to be made within 90 days of receipt of the petition, and the finding is to be published promptly in the **Federal Register**.

This finding summarizes information included in the petition and information available to us at the time of the petition review. Our review of a 90-day finding under section 4(b)(3)(A) of the Act and section 424.14(b) of our regulations is limited to a determination of whether the information in the petition meets the ''substantial information'' threshold. Our standard for substantial information within the Code of Federal Regulations (CFR) with regard to a 90-day listing petition finding is ''that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted'' (50 CFR 424.14(b)).

We do not conduct additional research at this point, nor do we subject the petition to rigorous critical review. Rather, at the 90-day finding stage, we accept the petitioner's sources and characterizations of the information, to the extent that they appear to be based on accepted scientific principles (such as citing published and peer reviewed articles, or studies done in accordance with valid methodologies), unless we have specific information to the contrary.

On January 27, 2003, we received the petition, dated January 23, 2003, from the Siskiyou Regional Education Project and 10 other organizations, requesting we list the Pacific lamprey, western brook lamprey, river lamprey, and Kern brook lamprey in Oregon, Washington, Idaho, and California. The petitioners also requested designation of critical habitat for the range of the species or for distinct population segments (DPSs) comprised of one or more major river basins. The petition identified itself as such and contained the names, addresses, and signatures of the petitioning organizations' representative. The petition provided information relating to one or more of the petitioned lamprey species, including: life history information; population status and local distribution; destruction, modification, or curtailment of habitat or range; other natural or manmade factors affecting the species' continued existence; predation; overutilization for commercial or recreational purposes; inadequacy of existing mechanisms; and a conclusion for each lamprey species.

In response to the petition to list these species, we sent a letter to the petitioners dated March 12, 2003, stating that we would not be able to address their petition before fiscal year 2004, which was to begin October 1, 2003. The reason for this delay was that complying with existing court orders and settlement agreements for other listing actions required nearly all of our listing funding for fiscal year 2004. In March 2004, we received a 60-day notice of intent to sue, and on May 26, 2004, a complaint regarding our failure to carry out the 90-day and 12-month findings on the status of the four species of lampreys. On November 23, 2004, we reached an agreement with the plaintiffs to complete the 90-day finding by December 20, 2004, and, if appropriate, to complete the 12-month finding by November 15, 2005.

General Biology

The petitioned lampreys belong to the genus *Lampetra* in the family Petromyzontidae and subfamily Petromyzontinae, a primitive group of fishes that are eel-like in form but lack the jaws and paired fins. These species have a round sucker-like mouth (oral disc), no scales, and breathing holes instead of gills. Most lamprey species have a similar life cycle: all begin life in freshwater, but some are anadromous (going from ocean to freshwater tributaries to spawn). In the beginning of their life cycle, the lamprey eggs hatch and the young ammocoetes (larvae) drift downstream to areas of low velocity and silt or sand substrate. They remain burrowed in the stream bottom, living as filter feeders for 2 to 7 years, filter-feeding on algae and detritus (Kostow 2002; Moyle 2002).

Metamorphosis of ammocoetes to macropthalmia (juvenile phase) occurs gradually over several months as they develop eyes, teeth, and become free swimming. Depending on the species, macropthalmia mature into adults and then either begin their migration to salt water or remain in fresh water (Kostow 2002; Moyle 2002). Lampreys lack paired fins and their elongated body shape causes them to swim by using an undulatory (snakelike) movement (Mesa et al. 2002; Moyle 2002) and they do not have swim bladders that allow them to maintain neutral buoyancy and must, therefore, swim constantly or hold fast to objects to maintain their position (Liao 2002; Mesa et al. 2002).

Pacific and river lampreys are parasitic as adults and feed on a variety of marine and anadromous fish. Nonparasitic western brook lampreys remain in fresh water, not feeding as adults, resulting in a short life span (Wydoski and Whitney 2003). After the adult feeding phase, both Pacific and river lampreys migrate to spawning areas and cease feeding. Their degree of fidelity to their natal streams is unknown. Adult lampreys spawn in gravel bottomed streams, at the upstream end of riffle habitat, typically above suitable ammocoete habitat (Moyle 2002). Both sexes construct the nests, often moving stones with their mouths. After the eggs are deposited and fertilized, the adults typically die within 3 to 36 days (Kostow 2002).

Pacific, river, and western brook lamprey ammocoetes are nearly indistinguishable from each other. Although there is some color differentiation between the species, this characteristic is not reliable (Kostow 2002). Moyle (2002) states, ''Classification and identification of lampreys depends largely on the number, structure, and position of horny plates (teeth) of the sucking disc found in adult lampreys.''

Pacific Lamprey

Adult Pacific lampreys are characterized by the presence of 3 large sharp teeth (cusps) and posterior teeth on the oral disc (Wydoski and Whitney 1979; Moyle 2002). The two dorsal fins are slightly separated and the second dorsal fin is continuous with the caudal fin. The anal fin, distinctive in females, is lacking in males. The ammocoetes at age 5 ranges in size from approximately 4 to 8.5 inches (in) (9.5 to 22 centimeters (cm)), depending on the geographic area (Wydoski and Whitney 2003).

Pacific lampreys are found in streams from Hokkaido Island, Japan, and along the Pacific Rim, including Alaska, Canada, Washington, Oregon, Idaho, and California to Punta Canoas, Baja California, Mexico (Nawa et al. 2003). Pacific lampreys are the most widely distributed lamprey species on the west coast of the United States (U.S.). Their distribution includes major river systems such as the Fraser, Columbia, Klamath-Trinity, Eel, and Sacramento-San Joaquin Rivers. Pacific lamprey distribution patterns are similar to that of anadromous salmonids (Simpson and Wallace 1982; Close et al. 1995; Close et al. 2002).

Adult Pacific lampreys parasitize a wide variety of ocean fishes, including Pacific salmon (*Oncorhynchus* spp.), flatfish (such as *Pleuronectes* spp. and *Platichthys* spp.), rockfish (*Sebastes* spp.), and pollock (*Theragra chalcogramma*), and are preyed upon by sharks, sea lions, and other marine animals. They have been caught in depths ranging from 300 to 2,600 feet (ft) (90 to 800 meters (m)), and as far as 62 miles off the coast (mi) (100 kilometers (km)) in ocean haul nets (Close et al. 2002).

After spending 1 to 3 years in the marine environment, Pacific lampreys return to freshwater between February and June (Kostow 2002; Moyle 2002). They are thought to overwinter and remain in freshwater habitat for approximately 1 year before spawning. In freshwater they may shrink in size up to 20 percent (Beamish 1980). Pacific lampreys primarily migrate upstream at night and adult size at the time of migration ranges from about 15 to 24.5 in (38 to 62 cm). They spawn between March and July, depending upon location within their range (Beamish 1980). Fecundity is high but variable, with females producing between 20,000 and 200,000 eggs (Moyle 2002). After the eggs are fertilized and deposited in the nest, embryos hatch in approximately 19 days at 59° Fahrenheit (F) (15° Celsius (C)). Once the ammocoetes reach about 6 in (15 cm), they begin metamorphosis into macropthalmia (Moyle 2002; Wydoski and Whitney 2003).

Population Distribution and Trends

The petition provides both anecdotal and empirical information on Pacific lamprey occurrences and documented declines in Oregon, Washington, and California; less information for British Columbia and Alaska; and little information for Idaho, Mexico, or the extensive area of their range from Alaska to Japan. In our review of the petition and other information, we found additional information for Idaho and northwestern California that suggests a decline in Pacific lamprey abundance and reduction in distribution (Cochnauer and Claire 2004; Service, in litt. 2004a).

Some data indicating a decline in Pacific lampreys on the west coast of the U.S. come from dam window counts and stream salmonid surveys. Limitations of these data for evaluating trends include uncertainty about consistency in reporting lampreys, and a lack of standardized counts at dams over time designed to document lamprey (Close et al. 1995). In addition, data based on ammocoete counts can include the similar-appearing western brook and river lampreys.

Historically, Pacific lampreys were thought to be distributed wherever salmon and steelhead once occurred (Simpson and Wallace 1982; Close et al. 1995; Close et al. 2002). Based on the information in the petition and Service files, the distribution of the Pacific lamprey has been reduced in specific drainages in the 4 States identified in the petition. They are extirpated in parts of southern California, above dams and other impassable barriers in coastal streams and larger rivers, and in the upper Snake and Columbia Rivers.

California

In California, Pacific lampreys are currently found as far south as Malibu Creek, Los Angeles County (Moyle 2002). In 1997, a single Pacific lamprey ammocoete was collected from the San Luis Rey River in San Diego County (Moyle 2002), but there is no further evidence of lampreys in this area. Pacific lampreys spawned in the Los Angeles River basin including the Los Angeles, San Gabriel, and Santa Ana Rivers, until 1955 (Swift et al. 1993). Lampreys were not recorded again until an adult was observed near the mouth of the Santa Ana River in 1991 (Swift et al. 1993). Comprehensive historical and current abundance data for Pacific lampreys in specific streams of southern California is lacking.

For the central and south coast of California, the petition identifies Pacific lampreys occurring either currently or historically in Malibu Creek, Santa Clara River, Sespe Creek, Santa Ynez River, Santa Margarita River (the petition identifies this drainage as occurring in San Luis Obispo County; we assume this refers to Santa Margarita Creek, which is a tributary of the Salinas River in San Luis Obispo County), Salinas River, and San Lorenzo River. In addition to streams identified in the petition, Pacific lampreys have been documented in the Pajaro, Santa Maria, Ventura, Carmel, and Big Sur Rivers, and Big, San Carpoforo, Arroyo de la Cruz, and San Luis Obispo Creeks (Swift et al. 1993; Entrix and Lee and Pierce 2003). There is little comparative data between historical and current distribution and abundance.

Pacific lampreys have been historically or recently documented in many streams of the San Francisco Bay area, including: Alameda, Walnut, Walker, Lagunitas, Coyote, Dry, Pena and Sonoma Creeks, and the Napa River. Information for these streams consists primarily of presence or absence surveys. Long-term trend data are not available.

Pacific lampreys occur within the Sacramento River and many of its tributaries. This species also occurs in the lower San Joaquin River and many of its tributaries, including the Stanislaus, Tuolumne, Merced, and Kings Rivers (Brown and Moyle 1993). Data are limited and mostly incidental from surveys designed to sample salmonids over the past 5 to 10 years. Anecdotal data for the Mokelumne, Sacramento, and San Joaquin Rivers indicate negative trends in the last 5 to 10 years.

In northwestern California, Pacific lampreys are documented from the Garcia, Big, Eel, Van Duzen, Mattole, Mad, Klamath, Scott, Trinity, and Smith Rivers. However, the actual distribution and abundance have not been determined for individual lamprey species because most lampreys captured in these rivers are not identified to the species level. Anecdotal evidence from early historical accounts and Tribal interviews suggest that Pacific lampreys have undergone substantial declines in the Eel and Lower Klamath Rivers in recent decades. Preliminary analysis of Service rotary trap data from the Klamath and Trinity Rivers suggests a declining trend from 1997 to 2004 for all life stages, with a notable decline in adult captures for the Klamath River system (Service, in litt. 2004a). We do not have lamprey population trend data for other streams in the area.

Idaho

The petition describes the Pacific lamprey declines from historical levels in Idaho, but contains little information on the Pacific lamprey in the Snake River drainage in this State. We reviewed other reports that document the overall decline of the Pacific lamprey in the Snake River basin and associated tributaries. The Snake River basin in Idaho comprises the Snake River from Asotin Creek, Washington, upstream to Shoshone Falls, as well as many tributaries of the Snake River

(Boise, Payette, Weiser, Powder, Wildhorse, and Indian Rivers), and the entire Clearwater and Salmon River drainages.

Historical data indicate that the Pacific lamprey distribution included the Salmon, Clearwater, and Wildhorse Rivers, and the Snake River upstream to Shoshone Falls, and probably mirrored ranges of native salmon and steelhead (Scott and Crossman 1973; Simpson and Wallace 1982; Close et al. 1995; Groves et al. 2001). Pacific lampreys once ascended the Snake River in large numbers (Wydoski and Whitney 1979). In the Hells Canyon area, R.J. Bell (Idaho Department of Fish and Game, in litt. 1958) collected 33 lampreys while operating a weir on the Wildhorse River during May 1958. Hammond (1979) completed a larval biology study on Pacific lampreys documenting occurrences from the Potlatch River, Lolo Creek, and South Fork Salmon River in the 1970s. Pacific lampreys were easily collected at Lower Salmon Falls for use as white sturgeon bait (Gilbert and Everman cited in P. Bowler, in litt. 2004). Several sources of anecdotal information corroborate historical distribution of Pacific lampreys throughout the majority of the Salmon River basin (draft Salmon River Subbasin Assessment 2004).

Currently, Pacific lampreys are distributed throughout much of the Salmon and Clearwater River basins, excluding the North Fork Clearwater River above Dworshak Dam. Pacific lampreys were once plentiful in the Snake River from Asotin Creek to Shoshone Falls (Scott and Crossman 1973; Simpson and Wallace 1982; Close et al. 1995; Groves et al. 2001). The construction of several Hells Canyon dams, which do not provide for fish passage, has reduced lamprey distribution due to lack of passage (Cochnauer and Claire 2004). Because Pacific lampreys no longer have access to habitats upstream of Hells Canyon and Dworshak dams, their habitat has been reduced by 50 percent (Cochnauer and Claire 2004). In addition, the number of adult lamprey capable of navigating upstream through fish ladders at Columbia and Snake River dams is only a fraction of what was observed prior to the dams being built on those rivers (Claire 2004). Pacific lampreys are at a very low number in the Snake River basin based upon counts at lower Snake River dams (Kostow 2002).

Oregon

Potential distribution of Pacific lampreys in Oregon includes the Columbia River mainstem to McNary Dam, associated Columbia River tributaries in Oregon including the Willamette River, tributaries of the Snake River in Oregon, and Oregon coastal rivers (Kostow 2002). A significant portion of the Pacific lamprey historical range in upper reaches of many rivers has been lost because of construction of dams with no fish passage structures (i.e., upper Deschutes River and tributaries, Hood River, and many tributaries of the Willamette River) (Kostow 2002).

There is anecdotal information that Pacific lamprey distribution and abundance have been reduced in recent decades, especially in Oregon rivers furthest from the Pacific Ocean such as the Umatilla, Walla Walla, John Day, and Grande Ronde Rivers (Jackson et al. 1996). Observations and records of adult Pacific lamprey passage at mainstem Columbia and Snake River dams indicate the species has declined substantially in these rivers and their tributaries in Oregon (Kostow 2002). Dam counts suggest that the largest declines occurred in the 1960s and 1970s. Although lamprey numbers have increased in recent years (U.S. Army Corps of Engineers (Corps) 2003), we do not know whether these numbers are attributable to favorable ocean conditions resulting in greater host base or other factors, such as the recent inclusion of night counts at many dams, which has increased overall sampling efforts (Kostow 2002).

The petition and other information provide some evidence that the Willamette River was, and may still be, an important area for Pacific lamprey production in the Columbia River basin (Kostow 2002). Although impassable dams and other artificial barriers have likely resulted in reduced distribution and abundance of lampreys in the Willamette River basin, information suggests that thousands of Pacific lampreys still ascend Willamette Falls and are still widely distributed in the Willamette Valley (Kostow 2002).

There is a long history of commercial and Tribal harvest of Pacific lampreys at Willamette Falls. Commercial harvest records dating from the early 1900s show a peak of approximately 397,000 pounds (180,076 kilograms) of Pacific lampreys in the mid-1940s. From 1943 to 1949, 80,000 to 500,000 lampreys, estimated to be 10 to 20 percent of the run, were harvested (Close et al. 1995). As recently as 1994, about 5,000 lampreys were harvested. Commercial harvest was ultimately eliminated in 2002 by the Oregon Fish and Wildlife Commission because it could not determine the percent of the total run harvested annually (Kostow 2002). The State of Oregon listed the Pacific lamprey as a sensitive species in 1993, and gave the species protected status in 1996. Tribal and personal harvest continues under State permit.

Detailed data in the petition from coastal Oregon comes from the Umpqua and Rogue Rivers (Nawa et al. 2003). Counts of Pacific lampreys at dams on both rivers indicate a dramatic decline over the past 40 years. On the North Umpqua River, Pacific lamprey numbers have declined from a high of over 46,000 in 1966 to 15 in 1997 at the Winchester Dam (Nawa et al. 2003).

Surveys conducted by various entities in the Alsea River basin documented Pacific lampreys to be well distributed, but generally absent from higher reaches above culverts (Kostow 2002). The Nestucca River and rivers draining to Tillamook Bay appear to be areas of low production for the Pacific lamprey, based on incidental data collected from salmonid smolt trap captures (Kostow 2002). For the majority of coastal streams in Oregon, however, there is little or no trend data and very little basin-specific distribution data in Oregon. The petition presents anecdotal evidence that lamprey populations have declined from historic numbers for the Applegate, Coquille, Siletz, and Siuslaw Rivers.

For the remainder of the streams in Oregon mentioned in the petition, there is not sufficient data to determine historical or current distribution and abundance, or documented evidence of decline.

Washington

Available information and abundance data for the Pacific lamprey in western Washington is limited and largely anecdotal (Molly Hallock, Washington Department of Fish and Wildlife (WDFW), cited in Bob Vadas, WDFW, pers. comm. 2004). Much of the data references only ''lamprey.'' The current distribution of the Pacific lamprey in western Washington includes most large rivers and streams along the coast and the Strait of Juan de Fuca, throughout Puget Sound, including the Nisqually Reach, and parts of the Hood Canal systems (Cook-Tabor 1999; Wydoski and Whitney 2003). The species' range extends long distances inland in the Columbia, Snake, and Yakima River systems (Wydoski and Whitney 2003). Collection records show Pacific lampreys widely distributed on the Olympic Peninsula in Ozette Lake; the Big, Salmon, Hoh, Queets, Quinault, Humptulips, Ozette, and Satsop Rivers; Kalaloch Creek; and streams flowing into the Strait of Juan de Fuca (Mongillo and Hallock 1997; Sam Brenkman,

Olympic National Park, pers. comm. 2004). However, no population status and trend data are available.

Pacific lampreys in the Columbia River basin have declined from their pre-1940s population numbers based on individuals counted at Columbia and Snake River dams (Close et al. 1995; Pirtle et al. 2003). Substantial declines in the distribution and abundance of Pacific lampreys in Washington have apparently occurred in tributaries of the Columbia and Snake Rivers, and in the Elwha River and Salt Creek on the Olympic Peninsula. R. Fuller (WDFW, in litt. 2004) indicates the species was more common in the 1980s, then declined in the 1990s, and has increased in counts in 2003 and 2004, although not to past levels. WDFW biologists noted this pattern of change in the Stillaguamish, Snohomish, Skagit, Green, Tolt, and Quillayute Rivers, Hood Canal, and the Strait of Juan de Fuca (R. Fuller, in litt. 2004). Pacific lamprey redds (a spawning nest formed by fish in a river bed where their eggs and sperm are deposited) and individuals have been observed less frequently in the past 10 years in streams and rivers of the Strait of Juan de Fuca (B. Vadas, pers. comm. 2004).

Tribal elders of the Elwha Klallam Tribe report that Pacific lampreys were historically abundant in the Elwha River and other north Olympic Peninsula rivers, including the Pysht, Hoko, and Dungeness Rivers, and Salt Creek (Mike McHenry, Elwha Klallam Tribe, pers. comm. 2004). Anecdotal information suggests current numbers may represent less than 5 percent of their historical observations (M. McHenry, pers. comm. 2004). Only one Pacific lamprey (a juvenile in 2003) has been recorded on the Elwha River, below the dam, in the last 20 years (M. McHenry, pers. comm. 2004).

In southwest Washington, Pacific lampreys are common in Mill Creek and in the Grays, Skamokawa, Elochoman, Abernathy, Germany, Kalama, South Fork Toutle, and Green Rivers (R. Fuller, in litt. 2004). In the 1960s, Pacific lampreys were common in the Chehalis River system (Nawa et al. 2003), and appeared to be more common on the coast than in the Puget Trough (R. Fuller, in litt. 2004). From 1997 to 2000, thousands of lampreys were trapped on the North Fork Toutle River, but numbers have declined from 2000 to 2004 (R. Fuller, in litt. 2004). Pacific lampreys have been documented in Cedar Creek and its tributaries (Pirtle et al. 2003), at the Speelyai Hatchery on the Lewis River (R. Fuller, in litt. 2004), and in streams near Franz Lake National Wildlife Refuge in Skamania County (Nawa et al. 2003).

In eastern Washington, Pacific lampreys historically occurred in numerous other basins, including the Spokane River and Asotin Creek (ACCDLSC 1995; Wydoski and Whitney 2003). The purported historical occurrence of Pacific lampreys in the mainstem Columbia River above Chief Joseph Dam and Grand Coulee Dam prior to their construction (BioAnalysts, Inc. 2000) is supported by historical documentation of remnant Pacific lamprey at Kettle Falls and in the Spokane River up to Spokane Falls (Wydoski and Whitney 2003).

Where historical information does exist for river basins (Walla Walla, Wenatchee, Tucannon, Asotin), Pacific lampreys were described as ''abundant,'' ''common,'' or ''likely had large runs'' (Service 1959; ACCDLSC 1995; G. Mendel, WDFW, pers. comm. 1994, cited in Jackson et al. 1996; Lane and Lane cited in Confederated Tribes of the Umatilla Indian Reservation (CTUIR) 2004; Swindell cited in CTUIR 2004). In 1999, surveys found Pacific lamprey ammocoetes were absent from reaches in the Walla Walla River subbasin (Bronson cited in CTUIR 2004). Adult Pacific lampreys have not been documented in the Asotin Creek watershed since at least 1980, although small lampreys of unknown species have been observed (ACCDLSC 1995). A 2002 trapping study designed to capture emigrating Chinook salmon in the Entiat River found Pacific lampreys to be the most numerous species captured during the time of the study. Most out-migration of lampreys occurred during the highest stream flows of the trapping period (Service, in litt. 2002). Although Pacific lampreys are occasionally caught incidentally at a screw trap on the Tucannon River, lamprey production in this subbasin is considered low (Close 2000) because the population has rapidly declined since 1981 (G. Mendel, pers. comm. 1994, cited in Jackson et al. 1996).

Pacific lampreys occur throughout the mid-Columbia and Snake Rivers and many associated river basins, including the Tucannon, Walla Walla, Yakima, Wenatchee, Entiat, and Methow Rivers. The Pacific lamprey distribution currently extends up to Chief Joseph Dam on the Columbia River, and to Hells Canyon Dam on the Snake River (Nass et al. 2003; CTUIR 2004).

Passage data from numerous mainstem Columbia (McNary, Rock Island, Rocky Reach, and Wells) and Snake River dams (Ice Harbor) suggest that, although annual numbers fluctuate widely at each project, there is a decreasing trend in the number of adult Pacific lampreys counted at each project (BioAnalysts, Inc. 2000). Data indicate that large declines occurred during the late 1960s and 1970s, and that current counts continue to be well below historical levels (Close et al. 1995; BioAnalysts, Inc. 2000; Corps 2003). For example, the number of adult Pacific lampreys counted at the fish ladder at Ice Harbor Dam on the Snake River declined from 50,000 in 1963 to approximately 1,700 in 2003 (Corps 2003).

Although adult lamprey counts have increased at Snake River dams (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite) and Columbia River dams (McNary, Priest Rapids, Rock Island, Rocky Reach, and Wells) in recent years, they are still considered to be well below historical levels (Close et al. 1995; Corps 2003; BioAnalysts, Inc. 2004). For example, counts at Rocky Reach Dam have shown a decline from more than 17,000 adult Pacific lampreys in 1969 to an average of 330 between 1983 and 2001. However, counts increased to 1,842 and 2,521 adult Pacific lampreys in 2002 and 2003, respectively (BioAnalysts, Inc. 2004). Increased numbers of lampreys in recent years may be an artifact of increased sampling or due to increased food abundance in the ocean (BioAnalysts, Inc. 2000).

Mexico, Alaska, Canada, and Pacific Ocean

Information on Pacific lampreys in areas beyond the coterminous U.S. is lacking. Only a few observations of Pacific lampreys have been documented in Baja California, and no information was found on Pacific lampreys for areas beyond Alaska around the Pacific Rim to Japan. Some information is available from British Columbia, Canada.

Pacific lampreys, first recorded in Canada in 1891, were historically abundant off the entire coast of British Columbia (Hart 1973). They were probably present in all coastal streams (Carl et al. 1977) and found in all major rivers, including the Columbia River in British Columbia, and the Fraser and Thompson Rivers upstream as far as Shuswap Lake (Scott and Crossman 1973). The Nicola River is a major producer of Pacific lampreys in the Fraser River drainage (Beamish and Levings 1991). Large numbers of recently metamorphosed adult Pacific lampreys migrating out of the Nicola River during 1984 and 1985 and from 1987 to 1988 indicate Pacific lampreys were abundant in the Fraser and Nicola Rivers at least through the 1980s (Beamish and Levings 1991).

Little information is available for the Pacific lamprey in Alaska. Surveys have been limited or nonexistent. We have only seven records of Pacific lampreys in southeast Alaska (Dan Cushing, Service, in litt. 2004). Information for other parts of Alaska is not available due to the lack of surveys (Mark Lisac, Service, in litt. 2004; Jim Larson, Service, in litt. 2004).

The petition presents data on the number of lampreys (both Pacific and unidentified lampreys combined) captured in ocean hauls between 1980 and 2001 along the Pacific coast off Washington, Oregon, and California. Fewer lampreys were caught off the coast of California than coastal Oregon and Washington. The petition also presents data on the percent occurrence of lampreys in those ocean hauls that indicate an increasing trend between 1977 and 2001.

Conservation Status of the Pacific Lamprey

The petition identified and described a number of threats to Pacific lampreys, including artificial barriers to migration, poor water quality, harvest, predation by nonnative species, stream and floodplain degradation, loss of estuarine habitat, decline in prey, ocean conditions, dredging, and dewatering (Jackson et al. 1996; Close et al. 1999; BioAnalysts, Inc. 2000; Close 2000; Nawa et al. 2003). Much like salmon, there are many reasons for the observed reductions in range and abundance of Pacific lampreys, and not one single threat can be pinpointed as the primary reason for their apparent decline.

Similar to salmon, barriers to Pacific lamprey spawning and rearing habitat may pose a large threat. Beamish and Northcote (1989) note that Pacific lampreys persist for only a few years above impassable barriers before dying out, and are unable to establish a non-anadromous form under these circumstances. Artificial structures such as dams, road culverts, and water diversions can impede upstream migrations by adult Pacific lampreys and downstream movement of ammocoetes and macropthalmia.

Declining lamprey populations observed at dams indicate the effects barriers have on lamprey access to upstream spawning habitat. Since the completion of the Willamette Valley Project, which included construction of 13 dams by 1967, annual commercial harvest of lampreys decreased from an average of 218,000 pounds per year (1943 to 1952) to 13,000 pounds per year (1969 to 2001) (Kostow 2002). Although these numbers do not reflect varying efforts in harvest, they do indicate a negative population trend (Kostow 2002; Nawa et al. 2003). In addition, as previously noted, passage is completely blocked by the Elwha Dam on the Elwha River in Washington, the Shasta Dam on the upper Sacramento River in California, Hells Canyon Dam on the Snake River in Idaho, Wells Dam on the Columbia River in Washington, and Iron Gate Dam on the Klamath River in California. Culverts may also act as a barrier to lampreys as determined in the Alsea Basin, where lampreys were often absent above road culverts (Kostow 2002).

During downstream migrations, juvenile lampreys may be entrained in water diversions or turbine intakes. In many cases, these water diversions and hydroelectric projects have been screened to bypass juvenile salmonids. However, due to their size and weak swimming ability, juvenile lampreys are frequently impinged on the screens resulting in injury or death (Hammond 1979; Jackson et al. 1996; Moursund et al. 2000). In addition, downstream migrations through large reservoirs created by dams may increase susceptibility to predation, and alterations in reservoir levels may impact ammocoetes, as a result of dewatering areas where they are burrowed (BioAnalysts Inc. 2000).

There is evidence that dams with fish ladders designed to pass salmonids do not effectively pass lampreys (Close et al. 1995; Vella et al. 1999; Kostow 2002). The excessive use of swimming energy required by Pacific lampreys to negotiate fishways at dams may be a factor in their decline (Mesa et al. 2003). Lampreys are unable to negotiate fish ladders or culverts designed with sharp angles because they cannot maintain suction with their mouth on discontinuous surfaces that, in combination with high water velocities, effectively block or restrict passage (Ocker et al. 2001). Although adult lamprey counts are not consistent or standardized (Close et al. 1995), the data available from the limited counts at dams indicate large population declines throughout the Columbia and Snake Rivers. Lamprey counts on the Columbia River from the 1960s to 2003 include the following; Bonneville Dam passed 350,000 lampreys in the early 1960s down to 177,027 in 2003; The Dalles Dam went from 300,000 lampreys in the early 1960s to 28,995 in 2003; Ice Harbor Dam has gone from 50,000 adult Pacific lampreys in 1963 to 1,702 in 2003 (Kostow 2002; Corps 2003; Nawa et al. 2003). Adult Pacific lamprey counts in 2003 on the mainstem Snake River at Lower Monumental, Little Goose, and Lower Granite dams were 468, 660, and 282, respectively (Corps 2003).

Another identified threat associated with dams results from alterations in reservoir levels, which may dewater areas where ammocoetes occur (Pacific Northwest National Laboratory 2002). Water diversions at dams for agricultural or municipal purposes may also dry up stream reaches where ammocoetes reside.

Pacific lampreys are harvested for food or commercial purposes, which may present a threat, particularly if these activities are concentrated on rivers with low population numbers of these species. Pacific lampreys are culturally important to Tribes in the Pacific Coast for sustenance, medicinal, and ceremonial purposes. Harvest was historically more widespread for lampreys than at present (Close et al. 2002). Although commercial harvest of Pacific lampreys for food, bait, animal feed, and fertilizer at the Willamette Falls on the Willamette River was discontinued by the State of Oregon in 2002, Tribal and personal use harvest at that location is still permitted (Kostow 2002). Due in part to declining numbers, harvest effort for Pacific lampreys is low across much of their range, except for California, which allows unlimited harvest of lampreys. There is evidence that lampreys are regularly collected for bait on the Mokelumne and American Rivers (Michelle Workman, East Bay Municipal Utility District, pers. comm. 2004; Rob Titus, California Department of Fish and Game, pers. comm. 2004).

Nonnative freshwater fish prey on juvenile and adult Pacific lampreys (Close et al. 1995; Moyle 2002) and may pose a threat to lamprey abundance. Nonnative fishes such as bass (*Micropterus* spp.), sunfish (*Lepomis* spp.), walleye (*Stizostedion vitreum vitreum*), striped bass (*Morone saxatilis*), and catfish (*Ictalurus* spp.), among others, have become established over the last century in some rivers in the western U.S.

Elevated water temperature has been documented as a factor resulting in mortality of eggs and early stage ammocoetes under laboratory conditions. Water temperatures at 72°F (22° C) may cause significant death or deformation of eggs or ammocoetes (Meeuwig et al. 2004). A water temperature of 72°F (22° C) or higher may be a common occurrence in degraded streams during the early-to-mid-summer period of lamprey spawning and ammocoete development.

In addition, because ammocoetes colonize specific areas for 2 to 7 years, are relatively immobile in the stream substrates, and often occur in high

densities, they are prone to effects from chemical poisoning and from channel alterations that may affect many age classes from a single action (Scott and Crossman 1973; Kostow 2002; Nawa et al. 2003).

The petition identified ocean conditions as a possible threat to the Pacific lamprey. Pacific salmon (*Oncorhynchus* spp.), Pacific hake (*Merluccius productus*), and walleye pollock (*Theragra chalcogramma*) have declined in numbers or are commercially harvested; reductions in the availability of these host/food species may present a threat to Pacific lampreys.

Research and monitoring specifically designed to address the Pacific lamprey began in the 1990s, initiated by several Tribes in the Columbia River basin. More recently, Tribes in the Lower Klamath River have initiated research and monitoring studies on lampreys in the main stem Klamath River and its tributaries below Iron Gate Dam. Limited studies have also been done recently within the area of the Klamath River Hydroelectric Project by PacifiCorp. Along with many Tribes, State and Federal agencies are now beginning to incorporate the needs of lampreys into management and monitoring plans. For example, the Corps has funded many studies on lamprey passage issues and is researching ways to improve dam passage for lampreys. However, there is still a lack of knowledge of the species and little systematic monitoring of abundance and distribution.

Western Brook Lamprey

Adult western brook lampreys are generally 7 in (18 cm) or less in total length (Wydoski and Whitney 1979; Moyle 2002). In the adult life stage, the oral disc is small and poorly developed and the two teeth (cusps) are rounded and nonfunctional (Wydoski and Whitney 2003). Adults are dark on the back and sides and yellow to white on the underside. Ammocoetes are sometimes distinguished by a dark tail and pigmentation of the head above the gill openings (Moyle 2002).

Western brook lampreys are found from coastal southeast Alaska to California, which includes inland distribution in the Columbia, Sacramento, and San Joaquin River basins (Moyle 2002). They have been documented in the Columbia River as far upstream as the Yakima River basin; none have been confirmed in the Snake River basin. However, Mendel and others (Mendel, cited in Asotin County Conservation District Landowner Steering Committee (ACCDLSC) 1995) captured small lampreys that were either river or western brook lampreys in Asotin Creek, in Washington. Detailed information on western brook lamprey distribution is lacking.

Spawning occurs from March to July, where between 1,100 to 5,500 eggs per female are deposited (Kostow 2002; Moyle 2002; Wydoski and Whitney 2003). The newly hatched ammocoetes emerge about 10 days after spawning (Moyle 2002) and drift into silty backwater areas. Western brook lamprey ammocoetes have been observed at densities as high as 203 per square yard (170 per square meter) (Scott and Crossman 1973). These lamprey ammocoetes are about 3.5 to 6 in (9 to 15 cm) in length, and are about 5 years old (Wydoski and Whitney 2003). Metamorphosis to adult stage occurs from February through July (Wydoski and Whitney 2003), and at this time their gonads are not fully developed. They burrow into the stream substrate where they remain dormant through the winter months. In the spring when water temperatures are above 50° F (10° C), western brook lampreys emerge from their burrows sexually mature and they remain in freshwater where they may migrate short distances to spawn. Western brook lampreys are nonparasitic and do not feed as adults (Kostow 2002).

Population Status and Distribution

The petition provides little information regarding the status or trends of the western brook lamprey. Historical and current abundance data, as well as information on their distribution are lacking. We found limited additional information that identified some local declines and extirpations, but this information does not indicate a broad reduction in abundance or distribution supporting the petition's claim.

California

In California, the western brook lamprey has been observed primarily in the Sacramento River drainage (Moyle 2002), but has also been reported in San Francisco Bay streams such as Mark West Creek and Coyote Creek (Moyle 2002). A small population may occur in Kelsey Creek, a tributary to Clear Lake (Moyle 2002), and the species is rare or extirpated from the Putah and Cache Creek watersheds (P. Moyle, pers. comm. 2004). Ammocoetes previously collected from streams in the Los Angeles River may have been the western brook lamprey, although according to Swift et al. (1993), this population is now extirpated. Western brook lampreys are known to occur in the Navarro and Eel Rivers in Mendocino County and in Willow Creek in Humboldt County (Moyle 2002), and are suspected to occur in other streams along the northern California coast. They apparently persist above the impassable Scott Dam on the upper Eel River (Moyle 2002).

Oregon

Very little information exists for the western brook lamprey in Oregon. The distribution of the western brook lamprey in Oregon may include most coastal streams and the Columbia River upstream to the Yakima River (Kostow 2002). This distribution is based heavily on museum records as there are little recent data available on the distribution and abundance of this species. In a recent inventory by CTUIR, western brook lampreys were absent from all areas inventoried (rivers in northeast and northcentral Oregon), except for a small population observed in the South Fork Walla Walla River. Kostow (2002) also notes their historical abundance in these basins is unknown and they were perhaps naturally rare and irregularly distributed. The petition and Kostow (2002) suggest the status of the western brook lamprey in the lower Columbia Basin is largely unknown. Kostow (2002) also noted the difficulty in determining their status in the lower Columbia River because it is hard to differentiate between species in the ammocoete phase, and the only adults regularly observed are the Pacific lamprey.

A systematic survey completed for both Pacific and the western brook lampreys in the Alsea River basin demonstrated that both western brook and Pacific lampreys were present, but that the Pacific lampreys were more common (Kostow 2002). Neither species was found in the upstream reaches of the basin above road culverts, apparently because culverts frequently prevent passage. Pacific lampreys were observed at higher densities than western brook lampreys (Kostow 2002).

Washington

Although western brook lampreys were considered common in Washington in 1936 (Nawa et al. 2003), Morrow (1980) stated, without documentation, that the species ''is not particularly abundant anywhere as far as is known.'' The species' known distribution includes parts of the Olympic Peninsula, including streams on the southern and western boundaries of the Olympic Peninsula, but not streams on the northern and eastern boundaries (Mongillo and Hallock 1997). In surveys conducted during the

1930s, western brook lampreys were collected on the Olympic Peninsula from the Quillayute, Queets, Quinault, Humptulips, Wynoochee, and Satsop Rivers, but not the Hoh River, and from Chimacum Creek (Mongillo and Hallock 1997; Cooper cited in R. Fuller, in litt. 2004). Mongillo and Hallock (1997) include the Hoh River in the distribution of the western brook lamprey because the species is found in the adjacent Quillayute and Queets Rivers. Other observed localities include coastal and Puget Sound streams, including the lower reaches of the Nisqually River (Cook-Tabor 1999), North Creek near Seattle, and Dry Creek in Mason County (Froese and Pauly 2004). This species has also been recently reported from the Nooksack River (R. Fuller, in litt. 2004), the North Fork and South Fork Chelatchie Creeks, and tributaries of Cedar Creek in the Lewis River watershed (Pirtle et al. 2003).

Historically, western brook lampreys were considered abundant in the Walla Walla River subbasin (Lane and Lane cited in CTUIR 2004; Swindell cited in CTUIR 2004). Numerous unidentified lampreys were documented as ''abundant'' at the Tumwater trap on the Wenatchee River in 1955 (Service 1959).

Western brook lampreys are known to occur in the Yakima and Walla Walla River basins. While the abundance of the western brook lamprey is unknown, the populations in the Walla Walla River subbasin appear to be self sustaining (CTUIR 2004). In 1998, assessments of the Walla Walla River subbasin indicated that lampreys were present in 8 of 12 subwatersheds inventoried (Mendel cited in CTUIR, in litt. 2004). Although not identified to species, these individuals were assumed to be western brook lampreys because Pacific lampreys have not been documented in recent sampling efforts (Bronson cited in CTUIR 2004). Western brook lampreys are thought to be in the Entiat River (Phil Archibald cited in Service, in litt. 2004b). Small river or western brook lampreys were documented in Asotin Creek by Mendel and others (ACCDLSC 1995).

Alaska and Canada

Historical distribution of the western brook lamprey in Canada includes the Cowichan River, Vancouver Island; tributaries of the Fraser River; Hooknose Creek, King Island; Cultus Lake on the lower mainland, and Lakelse Lake on the Skeena River system (Scott and Crossman 1973; Carl et al. 1977). Additional locations include Blake Creek and Burns Bog (Nawa et al. 2003) and the Queen Charlotte Islands (Nawa et al. 2003). A distinct, rare population of the western brook lamprey, having both parasitic and nonparasitic forms, may be endemic to the Morrison Creek watershed on Vancouver Island (Environment Canada 2004). Between 1978 and 1984, the population was relatively stable, but numbers may have declined in recent years. The Morrison Creek population was listed as endangered under the Species at Risk Act in Canada in May 2000 (Environment Canada 2004).

There is little information available for the western brook lamprey in Alaska. Surveys have been limited or nonexistent. We have four records of the western brook lampreys in southeast Alaska (D. Cushing, in litt. 2004).

Conservation Status of the Western Brook Lamprey

The western brook lamprey distribution overlaps with a portion of the Pacific lamprey range in Oregon, Washington, California, Canada and Alaska. Consequently, this species may experience many of the same threats discussed for Pacific lampreys. However, western brook lampreys are not anadromous, and thus are not subject to threats associated with ocean conditions, loss of estuarine habitat, and barriers to and from ocean environments which are threats experienced by Pacific lampreys and river lampreys. No specific data from the petition or available from our files is available that documents threats to this species.

River Lamprey

The adult river lamprey has two teeth (cusps) and no posterior teeth on the oral disc (Wydoski and Whitney 2003). Adult river lampreys average between 7 and 12 in (18 and 30 cm) in length. They are dark on the back and sides with silvery yellow on the belly and dark pigmentation on the tail (Moyle 2002). Except for the last 6 months to 1 year of life, the western brook lamprey and the river lamprey are indistinguishable from each other (Kostow 2002).

River lampreys are found from just north of Juneau, Alaska, to San Francisco Bay in California (Nawa et al. 2003). However, detailed information on their distribution is lacking. River lampreys are associated with large river systems such as the Fraser, Columbia, Klamath, Eel, and Sacramento Rivers. Beamish (1980) and others have noted that river lamprey production appears to be concentrated only in particular rivers, and only in the lower portions of these large rivers. The river lamprey is thought to be closely related to the resident western brook lamprey (Docker et al. 1999).

Little information is available on river lamprey life history. Metamorphosis from the ammocoete to macropthalmia life stage occurs between July and April (Kostow 2002; Moyle 2002). At this time, macropthalmia are thought to live deep in the river channel, which may explain why they are rarely observed (Kostow 2002). As adults, their oral disc develops just before they enter the ocean between May and July (Kostow 2002; Moyle 2002). During the approximately 10 weeks they are at sea in the parasitic phase, they remain close to shore, feeding primarily on smelt and herring near the surface (Kostow 2002). According to Moyle (2002), their life span is 6 to 7 years. River lampreys lay 11,400 to 37,300 eggs per adult female (Kostow 2002; Moyle 2002).

Population Status and Trends

The petition provides little information regarding the status or trends of the river lamprey, and acknowledges the difficulty of acquiring data for this species (Nawa et al. 2003). Both historical and current abundance data as well as distribution data is lacking. Both the petition and other information in our files indicate some potential local declines, but we have no data to substantiate a significant decline in abundance or distribution of river lampreys.

California

In California, most records for the river lamprey are for the lower Sacramento and San Joaquin River system tributaries in the Central Valley, especially in the Stanislaus and Tuolumne Rivers (Moyle 2002). River lampreys have been historically reported in the Alameda and Napa Rivers, and Sonoma and Cache Creeks, which are tributaries of San Francisco Bay (Wang 1986; Moyle et al. 1995; Moyle 2002). River lampreys appear to spawn regularly in Salmon Creek and in tributaries to the lower Russian River (Moyle 2002). River lamprey juveniles have been captured in recent years (1996, 1997, 1999, and 2004) in rotary trapping operations below the Red Bluff Diversion Dam, Sacramento River (Tom Kisanuki, Service, pers. comm. 2004). A single adult female was collected at Cape Horn Dam on the Eel River (Moyle 2002). River lampreys are known to occur in the Trinity and Klamath Rivers, where they are reported as being common in the incoming tides during spawning migration, although no quantitative estimates or historical comparisons of abundance data are available.

River lamprey data are limited in California and long-term data are not available; most data are incidental to salmonid surveys. According to Moyle et al. (1995), the river lamprey has become uncommon in California. Anecdotal information suggests populations are declining because the Sacramento, San Joaquin, and Russian River systems have been altered by dams, diversions, pollution, and degradation of suitable spawning and rearing habitat in rivers and tributaries; however, there are no quantitative data to confirm this information. River lampreys are known to be extirpated from Cache Creek (P. Moyle, pers. comm. 2004).

Oregon

In Oregon, information regarding the status of river lampreys is lacking because so few river lampreys have been recently documented in Oregon. River lamprey remains were identified in harbor seal (*Phoca vitulina richardsi*) scat in the Umpqua River estuary in 1997 and 1998 (Orr et al. 2004). In 1980, river lampreys were caught in Yaquina Bay and from the Columbia River estuary (Bond et al. 1983). Most museum records are from the lower Columbia River, although there is a single record from the Columbia River Gorge, and several from small coastal streams (Kostow 2002).

Lack of observations of river brook lampreys in Oregon may be because of the following reasons: the species are naturally rare; they are hard to detect in freshwater (Beamish 1980; Beamish and Youson 1987); there have been a lack of appropriate surveys; and river lampreys have been misidentified as western brook lampreys.

Washington

In Washington, there are no historical distribution records for river lamprey, although the species probably occurred in most major rivers (Wydoski and Whitney 1979). Morrow (1980) stated, without documentation, that the river lamprey ''does not appear to be particularly abundant anywhere within its range.'' The current distribution of river lamprey includes rivers and streams along the coast from the mouth of the Columbia River to the mouth of the Hoh River, throughout Puget Sound, and in the Lake Washington basin (Wydoski and Whitney 2003), but not on the Olympic Peninsula (Mongillo and Hallock 1997). Two records (1931 and 1959) of river lamprey in Lake Cushman (Mongillo and Hallock 1997; S. Brenkman, pers. comm. 2004), suggest this lake may have once supported an adfluvial (lake dwelling) population (Mongillo and Hallock 1997). The petition notes specimens were collected from the Bogachiel River in 1897, Lake Pleasant (date unknown), off the coast of Washington in 1999, and 4.0 mi (6.4 km) off La Push, Washington in 2002. River lamprey ammocoetes were trapped in the 1980s in the lower reach of the Nisqually River, but no river lamprey population estimates or in-stream distribution information are available (Cook-Tabor 1999).

WDFW listed the river lamprey as a ''State Candidate'' in 1998 because of its uncertain status. Surveys are ongoing to determine if the species should be listed as State endangered, threatened, or sensitive (Wydoski and Whitney 2003; WDFW 2004).

River lampreys occur in the Columbia River and have been documented in the Yakima River basin. River lampreys were identified by the Pacific Northwest National Laboratory (2004) in the Hanford Reach of the Columbia River. Numerous unidentified lamprey species were documented as ''abundant'' at the Tumwater trap on the Wenatchee River in 1955 (Service 1959), but may have been either river or western brook lampreys. Also, small lampreys documented in Asotin Creek by Mendel and others (Mendel cited in ACCDLSC 1995) were not identified to species and may have been either river or western brook lampreys.

Canada

In Canada, the river lamprey was first recorded in British Columbia in 1942. Although considered uncommon in British Columbia (Carl et al. 1977), river lampreys were more abundant in the southern part of the Province (Scott and Crossman 1973). Historical records from both fresh and salt water locations include the following: the Strait of Georgia, the sea off Discovery Island, Yellow Point, and the Sechelt Peninsula; English Bay; Porlier Pass; mouth of the Fraser River, Howe Sound, and the Skeena River; Powell Lake; and the Queen Charlotte Islands (Hart 1973; Carl et al. 1977; Beamish 1980). In 1979, an estimated 6,500,000 young adult river lampreys migrated out of the Fraser River (Beamish and Youson 1987).

Alaska

Little information exists for river lampreys in Alaska. Surveys have been limited or non-existent. There are five river lamprey specimens that have been collected in southeast Alaska (D. Cushing, in litt. 2004).

Conservation Status of the River Lamprey

River lampreys are likely susceptible to some of the threats discussed for Pacific lampreys because their distribution overlaps with a portion of the Pacific lamprey range in Oregon, Washington, California, Canada and Alaska. The threats to this species include activities such as dredging, loss of habitat, and poor water quality; all attributes common to the lower reaches of large developed rivers. Predation by nonnative fish species can also threaten the river lamprey because the diversity and abundance of nonnatives may be high in developed rivers (Moyle 2002). However, there is little documentation of specific threats to this species is in either the petition or in our files.

Summary

Our evaluation of the petition and other information indicates there is a decline in Pacific lamprey historical abundance and distribution throughout California, Oregon, Washington, and Idaho and that threats to the species occur in much of the petitioned range of the species. However, the petition did not attempt to describe or justify a listable entity within the petitioned area, stating only that, ''Pacific lamprey populations could be subdivided into distinct population segments at spatial scales similar to the ESUs developed for listed salmon species (see Evolutionary Significant Units for steelhead in NMFS 1996). Petitioners believe that delineation of distinct population segments is best left to the discretion of USFWS'' (Nawa et al. 2003).

The petition requested that we evaluate the Pacific lamprey within California, Oregon, Washington, and Idaho without providing information suggesting how that portion of the range, or any smaller portion, could be considered a potentially appropriate distinct population segment (*e.g.*, what the discrete entity would be or the potential significance of the undefined population). Neither the information provided in the petition nor otherwise available in Service files presents substantial scientific or commercial information to demonstrate that the petition to list Pacific lamprey located in the lower 48 states may be warranted. Accordingly, we are unable to define a listable entity of the Pacific lamprey at this time and is, therefore, ineligible to be considered for listing, we did not evaluate its status as endangered or threatened on the basis of either the Act's definitions of those terms or the factors in section 4(a) of the Act.

Little specific information was presented in the petition documenting significant declines to the western brook and river lamprey. The western brook lamprey and river lamprey distribution overlaps with the petitioned range of the Pacific lamprey. Consequently, these two species likely experience some of the same threats as documented for Pacific lampreys. Like the Pacific lamprey, the river lamprey may be prone to threats common to the lower reaches of large developed rivers. In contrast, the non-anadromous western brook lamprey is not known to be subject to threats associated with ocean conditions. Most lamprey abundance data is based on counts of ammocoetes that have not been identified to species. While declines or extirpations in specific locations have been documented, very little quantitative information is available to evaluate population trends compared to historical conditions. The petitioners contend that all of the petitioned lamprey species have been subjected to habitat losses and population declines due to a variety of threats. While we have no information to the contrary, the petition does not provide the substantial scientific or commercial information required indicating that listing the western brook lamprey or the river lamprey may be warranted.

Finding

The Service has reviewed the petition to list the Pacific lamprey, western brook lamprey, and river lamprey, the literature cited in the petition that was available to us, and other available scientific literature and information in our files. Neither the information presented in the petition nor that available in Service files presents substantial scientific or commercial information to demonstrate that the Pacific lamprey located in the lower 48 states is a listable entity. Accordingly, we are unable to define a listable entity of the Pacific lamprey. Since the population of Pacific lamprey cannot be defined as a DPS at this time, thus ineligible to be considered for listing, we did not evaluate its status as endangered or threatened on the basis of either the Act's definitions of those terms or the factors in section 4(a) of the Act. We also find that there is not substantial scientific or commercial information indicating that listing the western brook lamprey or the river lamprey in California, Oregon, Washington, and Idaho may be warranted.

Even though we did not find that substantial scientific or commercial information has been presented to indicate that the petitioned action may be warranted for these three species of lamprey, we encourage interested parties to continue to gather data that will assist with the conservation of the species. Although a nonsubstantial finding does not initiate a formal status review for these species, we encourage additional information gathering and research to increase our understanding of the status of these species on such topics as the following:

(1) The Pacific, river, or western brook lamprey biology and ecology, their current and historical distribution and abundance, and habitat needs during all life stages;

(2) The range, status, and trends of these species;

(3) Specific threats to these species or their habitats;

(4) Techniques for improving identification of lamprey ammocoetes to species;

(5) Any other information that would aid in determining these species, population status, trends, and structure;

(6) The adequacy of existing regulatory mechanisms to protect or conserve lampreys and their habitat.

If you wish to provide information regarding any of the three lamprey species, you may submit your information or materials to the State Supervisor, Oregon Fish and Wildlife Office (see **ADDRESSES** section above).

References Cited

A complete list of all references cited herein is available, upon request, from the Oregon Fish and Wildlife Office (see **ADDRESSES** section above).

Author

The primary author of this notice is the staff of the U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office (see **ADDRESSES** section above), with support from staff of Service offices in California, Oregon, Washington, and Idaho.

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

Dated: December 20, 2004.

Marshall P. Jones, Jr.,

Director, Fish and Wildlife Service.

[FR Doc. 04–28167 Filed 12–23–04; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; 12-Month Findings on Resubmitted Petitions To List the Southern Idaho Ground Squirrel, Sand Dune Lizard, and Tahoe Yellow Cress

AGENCY: Fish and Wildlife Service, Interior.

ACTION: 12-Month Findings on Resubmitted Petitions to List Three Species Under the Endangered Species Act.

SUMMARY: We, the Fish and Wildlife Service (Service), announce our 12-month findings on resubmitted petitions to list the southern Idaho ground squirrel (*Spermophilus brunneus endemicus*), the sand dune lizard (*Sceloporus arenicolus*), and the Tahoe yellow cress (*Rorippa subumbellata*) pursuant to the Endangered Species Act (Act) of 1973, as amended. We find that proposed rules to list these species continue to be warranted but precluded by other higher priority listing actions. We will continue to consider each of these species as a candidate for listing.

We request additional status information that may be available for any of these three candidate species. This information will help us in monitoring changes in the status of these candidate species and conserving them. Also, we will consider this information in preparing subsequent reviews to determine whether listing remains warranted, and in the preparation of listing documents in the event that a proposal for listing for one or more of these species is no longer precluded.

DATES: This finding was made on December 17, 2004. We will accept comments on these three candidate species at any time.

ADDRESSES: Submit your comments regarding any of the three species to the Regional Director of the Region identified in **SUPPLEMENTARY INFORMATION** as having the lead responsibility for that species. Written comments and materials received will be available for public inspection by appointment at the appropriate Regional Office listed in **SUPPLEMENTARY INFORMATION.**

A species assessment form with information and references regarding each of these three candidate species' range, status, habitat needs, and listing priority assignment is available for review at the appropriate Regional