documentation certifying the type of service it is providing for each REAG or MEA within its license service territory and the type of technology it is utilizing to provide such service. Further, the proposed compliance procedures would require the supporting documentation to provide the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide service with the licensee's technology.

Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

17. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

18. The *Public Notice* specifically invites comments on a range of potential performance requirements and invites interested parties to suggest alternative proposals. At this time, the Commission has not excluded any alternative proposal concerning performance requirements from its consideration, but it would do so in this proceeding if the record indicates that a particular proposal would have a significant and unjustifiable adverse economic impact on small entities.

19. In the *Public Notice,* the Commission discusses possible reporting requirements to ensure that spectrum is used intensively in the public interest. In particular, the Commission is considering a proposal to require licensees to provide additional reports demonstrating the level of service provided to the public. However, the Commission will not consider any alternative that would have a significant and unjustifiable adverse economic impact on small entities.

20. The Commission solicits any alternative proposals that would not incur significant and unjustifiable adverse impact on small entities.

Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

21. None.

List of Subjects in 47 CFR Part 27

Communications common carriers, Radio.

Federal Communications Commission.

Marlene H. Dortch,

Secretary.

[FR Doc. 2010–7761 Filed 4–5–10; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[FWS-R1-ES-2009-0043]

[MO 92210-0-0008 B2]

Endangered and Threatened Wildlife and Plants; 12–month Finding on a Petition To List the Mountain Whitefish in the Big Lost River, Idaho, as Endangered or Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 12–month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 12–month finding on a petition to list the mountain whitefish (*Prosopium williamsoni*) in the Big Lost River, Idaho, as endangered or threatened under the Endangered Species Act of 1973, as amended. After review of all available scientific and commercial information, we find that the mountain whitefish in the Big Lost River does not constitute a listable entity under the Act and, therefore, listing is not warranted. However, we ask the public to continue to submit to us any new information that becomes available concerning the taxonomy, biology, ecology, and status of the mountain whitefish in the Big Lost River, and to support cooperative conservation of mountain whitefish within its historical range in the Big Lost River.

DATES: The finding announced in this document was made on April 6, 2010.

ADDRESSES: This finding is available on the Internet at *http://www.fws.gov/idaho*, and also at *http://www.regulations.gov* at Docket No. FWS-R1-ES-2009-0043. Supporting documentation we used in preparing this finding is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Idaho Fish and Wildlife Office, 1387 S. Vinnell Way, Room 368, Boise, ID 83709. Please submit any new information, materials, comments, or questions concerning this finding to the Service at this address.

FOR FURTHER INFORMATION CONTACT: Acting State Supervisor, Idaho Fish and Wildlife Office (see **ADDRESSES**); by telephone at 208-378-5243; and by facsimile at 208-378-5262. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), requires that, for any petition to revise the Federal Lists of Endangered and Threatened Wildlife and Plants that contains substantial scientific and commercial information indicating that listing the species may be warranted, we make a finding within 12 months of the date of receipt of the petition. In this 12–month finding, we may determine that the petitioned action is either: (1) Not warranted, (2) warranted, or (3) warranted, but immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether species are endangered or threatened , and expeditious progress is being made to add or remove qualified species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Section 4(b)(3)(C) of the Act requires that we treat a petition for which the requested action is found to be warranted but precluded as though resubmitted on the date of such finding, that is, requiring a subsequent finding to be made within 12 months. We must publish these 12–month findings in the **Federal Register**.

Previous Federal Actions

On June 15, 2006, we received a petition from Western Watersheds Project to emergency list as endangered or threatened the population of mountain whitefish in the Big Lost River, Idaho, as a separate species, subspecies, or distinct population segment (DPS) under the Act. The petitioner also requested that we designate critical habitat concurrent with the listing.

In an August 21, 2006, letter to the petitioner, we acknowledged receipt of the petition and explained that we would not be able to address the petition at that time due to other priorities relating to court orders and settlement agreements. We further indicated we had reviewed the petition and determined an emergency listing was not necessary. On October 23, 2007, we issued a 90–day finding (72 FR 59983), concluding the petition had failed to provide substantial information indicating that listing the Big Lost River population of mountain whitefish may be warranted, based on a lack of information indicating it may be a listable entity under the Act (a species, subspecies, or DPS). On January 25, 2008, Western Watersheds Project filed a complaint challenging the negative 90–day finding. On March 31, 2009, the United States District Court in Idaho found that we had considered information beyond the material in the petition in issuing the negative finding, such that we had effectively begun to conduct a status review (*Western Watersheds Project* v. Dirk Kempthorne, *et al.*, Case No. CV07-409-S-EJL D. Idaho). The Court directed us to proceed directly to a status review and, within 1 year, issue a 12–month finding. We published a notice in the **Federal Register** on August 6, 2009 (74 FR 39268) initiating the status review and requesting new information for mountain whitefish in the Big Lost River, Idaho. The 30–day comment and information period closed on September 8, 2009. This notice constitutes the 12–month finding on the June 14, 2006, petition to list the mountain whitefish in the Big Lost River, Idaho, as endangered or threatened.

Species Information

Species Distribution and Habitat

Mountain whitefish are members of the family Salmonidae (broadly termed "salmonids") and are found in rivers and lakes throughout mountainous areas of western North America in Canada and the United States (Figure 1). In the United States, they occur in the States of Washington, Oregon, Idaho, Wyoming, Montana, Colorado, Utah, Nevada, and California (NatureServe 2009). Mountain whitefish are relatively common and widespread in most river basins in Idaho (AFS 2007, p. 29) and, in general, occur in mainstem river reaches that are greater than 15 meters (m) (49.2 feet (ft)) wide and of low gradient (Maret *et al.* 1997, p. 213; Meyer *et al.* 2009, p. 763). Results of a study by Meyer *et al.* (2009) assessing the environmental factors related to distribution, abundance, and life history characteristics of mountain whitefish in Idaho show mountain whitefish in southern Idaho are abundant, long-lived, and fast growing (at warmer water temperatures) until they reach sexual maturity. The authors also speculate that mountain whitefish are relatively secure in the upper Snake River basin, although little research has been done on the mountain whitefish across the range of the species (Meyer *et al.* 2009, pp. 753, 765).

Although the majority of populations of mountain whitefish occur in riverine environments, some populations are restricted to lakes or isolated sink basins. Mountain whitefish in the Big Lost River reside in a "sink" drainage, which was once part of a large Pleistocene lake system that included Lake Terreton (Link 2003, in Van Kirk *et al.* 2003, p. 6). As Lake Terreton waters receded, the Big Lost River and four adjacent drainages lost their surface connection to the Snake River, resulting in five isolated sink drainages in Idaho. It is estimated mountain whitefish became isolated in the Big Lost River approximately 10,000 years ago (Behnke 2003, cited in Van Kirk *et al.* 2003, p. 8). Other populations of mountain whitefish occur in other sink drainages, such as tributaries in the Lahontan Basin in California and Nevada, and the Bonneville Basin in Utah. Populations in these basins are similar to the population in the Big Lost River in that all are relict populations of mountain whitefish that formerly resided in large Pleistocene lake systems that are now closed basins.

Distribution and Habitat Within the Big Lost River Basin

Mountain whitefish in the Big Lost River are physically isolated from other whitefish populations within the Snake River basin. The Big Lost River originates in the Pioneer, Boulder, Lost River, and White Knob mountain ranges and flows down the Big Lost River Valley eastward onto the Snake River Plain where it terminates at the Big Lost River Sinks (Figure 2). Major tributaries include East Fork, Star Hope Creek, Wildhorse Creek, North Fork, Thousand Springs Creek, Warm Springs Creek, Alder Creek, Pass Creek, and Antelope Creek. Elevations in this area range from 1,459 m (4,787 ft) at the Big Lost River Sinks to 3,859 m (12,661 ft) at the summit of Borah Peak. The climate of the drainage is generally cool and dry. Annual precipitation along the valley floor is about 20 centimeters (cm) (7.8 inches (in)), but increases to over 100 cm (39.4 in) at higher elevations. Vegetation within the basin ranges from sagebrush steppe at lower elevations, to coniferous forests at mid elevations, to alpine at higher elevations. The drainage is comprised primarily of Federal land managed by the U.S. Forest Service (USFS; 42 percent), Bureau of Land Management (BLM; 26 percent), and Department of Energy (DOE; 15 percent), with lesser amounts of private (14 percent) and State (2 percent) lands. The drainage is within portions of Butte and Custer Counties and is sparsely populated, with agriculture being the dominant land use on private lands. Primary uses of Federal land include cattle grazing and recreation (IDFG 2007, p. 7). Historically, mountain whitefish occupied approximately 346.1 kilometers (km) (214 miles (mi)) of habitat in the Big Lost River (Gamett 2009a, p. 5). Recent studies indicate mountain whitefish currently occupy 134.8 km (86.3 mi) of the Big Lost River, with an estimated population of 12,639 adult fish (Garren *et al.* 2009, pp. 5-6). Although it is lower than suspected historical numbers, the current population estimate shows an increase from surveys conducted between 2002 and 2005, when it was estimated that approximately 2,539 adult mountain whitefish occupied 83.3 km (51.8 mi) of habitat in the Big Lost River (Gamett *et al.* 2009, p. 5).

Species Description

Mountain whitefish can reach about 57 cm (22 in) in length at maturity. The general body shape is slender with a somewhat round cross section; body coloration is typically silver on the sides, dusky olive green or blue on the back; and the belly is a dull white (Simpson and Wallace 1982, p. 77). According to Gamett 2009 (personal observations and unpublished data, pp. 8-9), mountain whitefish in the Big Lost River can be distinguished from mountain whitefish in the nearby Pahsimeroi River based on color. Whiteley (2007, pers. comm.) also notes a color difference, and suggests that mountain whitefish in the Big Lost River may also differ in head and body shape as well. None of these suggested differences have been quantified or formally described, however, and Gamett (2009, p. 9) notes the need for further research in this regard.

Age of sexual maturity of mountain whitefish varies, with mountain whitefish in southern Idaho documented to reach sexual maturity at 2 to 3 years (Meyer *et al.* 2009, p. 765), while fish from the Blacks Fork River in Utah were reported to reach sexual maturity at 4 years for males, and 5 to 7 years for females. The species is relatively long-lived; one fish in Utah was aged at 12 years (Wydoski 2001, p. 694), while the oldest fish recorded in the Meyer *et al.* study in Idaho was estimated to be 24 years old (2009, p. 761). Mountain whitefish spawn in the fall, and timing depends on stream temperatures (Simpson and Wallace 1982, p. 77; Wydoski 2001, p. 694). Unlike other salmonids, mountain whitefish are broadcast spawners, meaning no nest or redd is created, and females scatter eggs and the male fertilizes them (McGinnis 1984, p. 137). Spawning generally occurs at night, with fish broadcasting their eggs and sperm in riffle areas over clean gravel. Eggs incubate throughout the winter months, and hatching typically occurs in March and April. Migrations associated with spawning behavior appear to be highly variable across systems, with some populations migrating into tributaries to spawn, while others move very little (Northcote and Ennis 1994, p. 350). Upon hatching, fry are thought to occupy lateral habitats and low velocity areas. Adult habitat is variable, consisting of shallow riffles, moderate runs, and deep pools during the summer, but primarily deeper pools in the winter (Northcote and Ennis 1994, p. 353).

Mountain whitefish are thought to be opportunistic bottom feeders, consuming whatever is in abundance, including fish eggs during the spawning season (McGinnis 1984, p. 137). They are known to actively feed on both aquatic and terrestrial insects, but may also eat other small fish on occasion (NatureServe 2009).

Taxonomy

The mountain whitefish in the Big Lost River of Idaho are currently recognized as members of the single species *Prosopium williamsoni*, which is considered common and widespread throughout the mountainous western United States northward into Canada (Nelson *et al.* 2004, p. 86; ITIS 2009; NatureServe 2009). Although the State of Idaho does not consider the mountain whitefish occupying the Big Lost River to be either a significant species or a species of concern, they have developed a management plan specific to this population of mountain whitefish (IDFG 2007, pp. 1-32).

Defining a Species Under the Endangered Species Act

Our first step in making a 12–month finding is to establish that the subject under consideration constitutes a "species" as defined under section 3(16) of the Act. Section 3(16) defines "species" to include "any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature" (16 U.S.C. 1532(16)). Our implementing regulations at 50 CFR 424.11 provide further guidance for determining whether a species (as defined in the Act and our regulations at 50 CFR 424.02(k)) is eligible for listing under the Act: "In determining whether a particular taxon or population is a species for the purposes of the Act, the Secretary shall rely on standard taxonomic distinctions and the biological expertise of the Department and the scientific community concerning the relevant taxonomic group" (50 CFR 424.11(a)).

As previously discussed, mountain whitefish in the Big Lost River are classified taxonomically as *Prosopium williamsoni*, the same as other mountain whitefish across the range of the species. Before proceeding further, we must first determine whether the mountain whitefish in the Big Lost River are a separate species, subspecies, or DPS, and thus constitute a potentially listable entity under the Act.

Evaluation of Mountain Whitefish in the Big Lost River as a Species or Subspecies

The petitioner asked us to list the population of mountain whitefish in the Big Lost River, Idaho, as a separate species, subspecies, or DPS. As discussed in the "*Taxonomy*" section above, mountain whitefish in the Big Lost River of Idaho are currently recognized as members of the single species *Prosopium williamsoni*, which is considered common and widespread throughout the mountainous western United States northward into Canada (NatureServe 2009). The American Fisheries Society and the American Society of Ichthyologists and Herpetologists, the scientific authorities with regard to this taxonomic group, do not recognize mountain whitefish in the Big Lost River as a separate species or subspecies (Nelson *et al.* 2004, p. 86). The Integrated Taxonomic Information System, a database maintained by a partnership of Federal agencies to provide scientifically credible taxonomic information, similarly does not recognize mountain whitefish in the Big Lost River as a separate species or subspecies (ITIS 2009). Thus, per our implementing regulations at 50 CFR 424.11, standard taxonomic distinctions and the biological expertise of the scientific community concerning the relevant taxonomic group, the mountain whitefish in the Big Lost River are not recognized as a separate species or subspecies of mountain whitefish.

The petitioner, however, maintained the mountain whitefish in the Big Lost River should be protected as a separate species or subspecies of whitefish "because all genetic analyses demonstrate that it is genetically unique—so much so that the genetic distance observed between Big Lost River mountain whitefish and surrounding populations is at least as large as that seen between other subspecies or even species." We carefully evaluated the petitioner's assertion, which relies primarily on the analysis of molecular genetic data. Because of the complex and highly technical nature of molecular analysis, we consulted with a fisheries genetics expert within the Service to assess the potential significance of the genetics information available to us regarding mountain whitefish in the Big Lost River. Dr. Donald E. Campton, Senior Science Advisor for the U.S. Fish and Wildlife Service's Pacific Region Fisheries Resources Division, and former President of the Genetics Section of the American Fisheries Society, served as our expert on this finding.

No universally accepted definition of species or subspecies exists. In general such classifications are based on multiple lines of evidence that are consistent with the hypothesis that the entity in question is a separate species or subspecies, including factors such as morphology, physiology, behavior, and genetic characteristics (Haig *et al.* 2006, p. 1586). In reviewing an entity as a potential species or subspecies, we consider as many lines of available, reliable evidence as possible. Particularly, in the case of an entity that is being proposed as a new taxonomic treatment and that has not been recognized as such by the relevant scientific community, we bring our biological expertise to bear and require multiple lines of persuasive and credible corroborating evidence to support any such change, in accordance with our regulations at 50 CFR 424.11(a).

Information on the genetics of mountain whitefish in the Big Lost River of Idaho is available from several recent publications, including Whiteley *et al.* (2006), Campbell and Kozfkay (2006), and Miller (2006). In Whiteley *et al.* (2006), the researchers utilized both allozymes and microsatellites to examine the genetic structure of mountain whitefish populations throughout the northwestern United States and British Columbia, plus two populations from western Alberta. Allozymes are forms of enzymes coded for by different alleles at the same genetic locus, and can be distinguished by electrophoresis; microsatellites are repeating sequences of base pairs in the DNA, and are typically used as highly variable genetic markers. Whiteley *et al.* (2006, p. 2778) found that mountain whitefish in this region (all representatives of the species *Prosopium williamsoni*), form three large-scale genetic assemblages based on allozyme data and five large-scale genetic assemblages based on microsatellite data. The Big Lost River population was included within the resulting Upper Snake River assemblage (Upper Snake) in both scenarios, and is described as the "most genetically divergent" site in that assemblage. While this is an accurate characterization, examination of the data demonstrates that the degree of genetic divergence of mountain whitefish in the Big Lost River from other populations in the Upper Snake genetic assemblage largely reflects the absence of within-population genetic variation in individuals from the Big Lost River and is less than the genetic divergence observed between the Upper Snake and other major assemblages of mountain whitefish (Whiteley *et al*. 2006, Table 1, pp. 2770-2771). In other words, the mountain whitefish in the Big Lost River appear to be divergent largely as a result of the lack of genetic diversity exhibited by this population relative to other populations, not as the result of any unique genetic characteristics. Although the most divergent group within the Upper Snake, Whiteley *et al*. (2006, pp. 2775-2776) found the Big Lost River population still clustered within that major genetic assemblage.

This result is consistent with that reported by another researcher in her study of mitochondrial DNA in mountain whitefish, detailed further below. Miller (2006, p. 30) concludes "the Big Lost River mountain whitefish still group with other populations from the upper Snake River Sub-basin." These results do not suggest that mountain whitefish in the Big Lost River stand out from among all populations of mountain whitefish examined as genetically unique or differentiated to the point that they would be considered a separate species or subspecies. If that were the case, then one would expect the Big Lost River mountain whitefish's level of divergence to be greater than the level of divergence observed between the major genetic groupings, and they would not cluster within a major genetic assemblage.

The analysis of Whiteley *et al*. (2006) shows mountain whitefish populations that are geographically isolated are relatively more distinctive genetically than populations that may experience gene flow between them. Although Whiteley *et al*. (2006, p. 2780) reported little evidence of differentiation among sites within major river basins in general, they note that the Upper Snake (which includes the Big Lost River) and Olympic Peninsula were an exception to this rule, due to the natural restrictions on gene flow in these areas. Whiteley *et al*. (2006, p. 2780) identified low levels of within-population genetic variation (relatively lower levels of genetic diversity) in several physically-isolated populations of mountain whitefish, including not only the Big Lost River, but also the Big Wood River, Bull River, and Thutade Lake. They also noted a higher degree of genetic differentiation in several physically-isolated sites in the region associated with the Upper Snake River assemblage; in addition to the Big Lost River, this pattern was observed at the Henry's Fork and several Bonneville Basin sites (Whiteley *et al*. 2006, p. 2781).

Such results are not unexpected; in fact, this condition is exactly what would be predicted by basic conservation genetics theory for small, isolated populations (Meffe and Carroll 1994, pp. 156-158). These isolated populations are relatively genetically divergent compared to other populations that experience higher levels of gene flow (gene flow or genetic mixing maintains greater levels of genetic diversity or heterogeneity in the population). Such a level of differentiation does not necessarily suggest a subspecies or species-level difference; nor does the ability to detect genetic differences between populations necessarily equate to meaningful biological significance (Hedrick 1999, pp. 316-317). Fish in general, and particularly freshwater salmonids, tend to exhibit a high degree of genetic structuring (Allendorf and Waples 1996, p. 257; Whiteley *et al*. 2006, p. 2783), such that it is not unusual to be able to easily distinguish between populations of the same species based on molecular genetic differences. Yet, if one were to rely solely on the ability to distinguish between fish populations based on genetic differences to identify new subspecies or species, as Haig *et al*. (2006, p. 5, citing Mayden 1999) noted, "every isolated creek and pond could have a unique subspecies or species of fish." This ability to so finely subdivide species based purely on the ability for genetic discrimination between them has led the Service, as described above, to require a more holistic approach to species or subspecies analysis that builds upon multiple lines of evidence, including, where possible, a full suite of morphological, physiological, behavioral, and genetic characteristics, to support a formerly unrecognized taxonomic distinction.

The analysis of the genetic relationships of mountain whitefish by Whiteley *et al*. 2006 does not support the contention that mountain whitefish of the Big Lost River are distinctive or unique genetically when compared to other populations in the Upper Snake River assemblage, or when compared to populations within other assemblages of the species. Rather, the authors point to a high degree of genetic differentiation between many populations of mountain whitefish in the Upper Snake due to the topography of the region, and characterize those populations as "more finely subdivided than elsewhere" (Whiteley *et al*. 2006, p. 2781). The authors also point out that the degree of genetic differentiation observed in mountain whitefish among tributaries within river basins is less than that observed in populations of other salmonids, such as bull trout (*Salvelinus confluentus*) and westslope cutthroat trout (*Oncorhynchus clarki lewisi*) (i.e., bull trout and westslope cutthroat trout show greater levels of genetic differentiation between populations within river basins than do mountain whitefish) (Whiteley *et al*. 2006, p. 2783). Despite this high degree of genetic structuring, it has not been suggested that each individual bull trout or westslope cutthroat trout population be considered as a separate species or subspecies; each genetically differentiable population of bull trout and westslope cutthroat trout is still considered a member of the broader taxon (species or subspecies, respectively). If the mountain whitefish in the Big Lost River were a separate species or subspecies, based on genetic characteristics, one would expect mountain whitefish in the Big Lost River to exhibit greater genetic differentiation than populations of salmonids that are considered members of the same species or subspecies, not less.

Campbell and Kofzkay (2006) used mitochondrial DNA to assess mountain whitefish populations in Idaho, Utah, and Montana, and also specifically to evaluate the origin and divergence of mountain whitefish in the Big Lost River. Their results support the three major genetic assemblages identified by Whiteley *et al*. (2006), which Campbell and Kofzkay (2006, p. 6) describe as the Upper Snake River drainage (upstream of Shoshone Falls) and the Bonneville basin; the Lower Snake River drainage (downstream of Shoshone Falls) including the Pahsimeroi and Salmon Rivers; and the Upper Missouri River. The authors note the pairwise divergence estimates between these major genetic assemblages of mountain whitefish were very high, ranging from 1.31 to 4.56 percent (Campbell and Kofzkay 2006, p. 7). For comparison purposes, they point out that estimates of mitochondrial DNA sequence divergence between two salmonid subspecies, the westslope cutthroat trout and Yellowstone cutthroat trout (*Oncorhynchus clarkia bouvieri*), range from 1.5 to 1.9 percent (Gyllensten and Wilson 1987, IDGF unpublished data, cited in Campbell and Kofzkay 2006, p. 7). The divergence between the large major assemblages of mountain whitefish may thus be similar to the degree of divergence between recognized subspecies of cutthroat trout.

However, pairwise divergence estimates for mountain whitefish in the Big Lost River are solidly within the range of normal divergence for populations of whitefish within the Upper Snake River assemblage (Campbell and Kofzkay 2006, Figure 3, p. 8). The percent sequence divergence of mountain whitefish from the Big Lost River compared to other populations within the Upper Snake River Basin ranges from 0.33 to 0.49 percent. The levels of sequence divergence between subspecies of cutthroat trout (1.4 to 1.9 percent) and between different species of trout (rainbow trout (*O. mykiss*) and cutthroat trout (4.0 to 4.5 percent) (Campbell and Kozfkay 2006, p. 7) are far higher than that observed between mountain whitefish in the Big Lost River and other populations within the Upper Snake River assemblage (Campbell and Kofzkay 2006, p. 8). According to this study, the genetic distance between mountain whitefish in the Big Lost River and surrounding populations is far less than that observed between these subspecies or species of salmonids. Furthermore, several other populations of mountain whitefish examined by Campbell and Kofzkay (2006, Figure 3, p. 8) exhibited greater levels of divergence from other populations within their assemblage than that exhibited by fish from the Big Lost River (the Boise River populations in the lower Snake River assemblage, for example). Thus, the data of Campbell and Kofzkay (2006) indicate the mountain whitefish in the Big Lost River are not particularly distinctive or unusual in terms of genetic divergence, when compared to other populations of mountain whitefish throughout the range of the species.

Miller (2006) examined the phylogeography of the genus *Prosopium* in western North America, analyzing mitochondrial DNA using the cytochrome b (cytb) and NADH dehyrogenase subunit 2 (ND2) sequences. This analysis included the mountain whitefish *P. williamsoni*, and three taxa found only in Bear Lake on the Utah-Idaho border: the Bear Lake whitefish (*P. abyssicola*), the Bonneville whitefish (*P. spilonotus*), and the Bonneville cisco (*P. gemmifer*). Similar to the other researchers, Miller reported a high amount of genetic structure for mountain whitefish based on drainage basins or sub-basins. Analyses of molecular variance demonstrated between 62.5 and 75.8 percent of the total genetic variation was found between drainage basins or subbasins (Miller 2006, p. 22). Miller's analysis found evidence for multiple populations of mountain whitefish that are geographically isolated and demonstrate little to no gene flow, including populations in the Hoh River, Duchesne River, Big Wood River, Big Lost River, and Coeur d'Alene River (Miller 2006, pp. 22-23).

The nested clade analysis conducted by Miller resulted in somewhat different results for the cytb and ND2 sequences. Analysis based on cytb resulted in the identification of four major clades of *Prosopium*: (1) A Missouri River basin clade; (2) a Bear Lake *Prosopium* clade; (3) a Columbia River subbasin/lower Snake River subbasin/Lahontan Basin clade; and (4) a Bonneville basin/upper Snake River subbasin/Green River basin/Bear Lake *Prosopium* clade (Miller 2006, p. 23). Analysis based on ND2 resulted in two major clades: (1) A Columbia River subbasin/lower Snake River subbasin/Lahontan basin clade, and (2) a Bonneville Basin/upper Snake River subbasin/Green River basin/ Missouri River basin/Bear Lake *Prosopium* clade (Miller 2006, p. 23), with the Big Lost River and Missouri River populations representing two divergent subgroups within this latter clade (Miller 2006, Figs. 16a, pp. 130-137, and 16c, pp. 146-149). For both cytb and ND2, she found the haplotypes for the Big Lost River (upper Snake River subbasin), the Big Wood River (lower Snake River subbasin), and the Hoh River (Columbia River subbasin) formed isolated clades (included only haplotypes from their own system, and did not contain haplotypes from outside of their clades) (Miller 2006, p. 24). Miller concluded that these three populations are genetically distinct from other populations within their basins due to their relative isolation. With regard to the Big Lost River population in particular, however, she concludes, "Although distinct from other upper Snake River populations, the Big Lost River mountain whitefish still group with other populations from the upper Snake River Sub-basin" (Miller 2006, p. 30). This result is consistent with that of Whiteley *et al.* 2006 (p. 2778); the mountain whitefish in the Big Lost River are genetically distinctive within their major genetic assemblage, but do not stand out from all other populations when considered in the context of the species across its range.

The petitioner offered additional information in support of the contention that mountain whitefish in the Big Lost River represent a separate species or subspecies; that additional information was a reference to an abstract from an oral presentation made at a meeting of the Idaho Chapter of the American Fisheries Society (Van Kirk *et al.* 2003, p. 13). This abstract, authored by Whiteley and Gamett, refers to "the fixation of a unique allele in the Big Lost River population at one of the microsatellite loci." Data to support this statement were not available to us. If we assume that one microsatellite allele has become fixed in mountain whitefish occupying the Big Lost River, that information does not by itself confer any meaningful genetic significance or biological or ecological importance (e.g., as measured by morphological, physiological, or behavioral traits) because microsatellite alleles are considered selectively neutral, the frequencies of which largely reflect random or stochastic processes (e.g., genetic drift, population bottlenecks, founder effects, mutation rates), rather than selection for traits that confer increased fitness (Ashley and Dow 1994, p. 185). Indeed, the total lack of variability observed in microsatellites sampled for mountain whitefish in the Big Lost River (Whiteley *et al.* 2006, p. 2775) indicates that this population has likely undergone a past population bottleneck relative to other populations, with a subsequent loss of genetic variability and random fixation (e.g., via drift of a unique [or nearly unique] allele) (D. Campton, pers. comm. 2007).

This conclusion is also supported by the work of Miller, who concludes the mountain whitefish in the Big Lost River experienced restricted gene flow (2006, p. 25). Under such conditions, genetic distance may increase quickly, but is not in and of itself indicative of biological significance (Hedrick 1999, pp. 315-316). Genetic isolation and a relatively small population size would predictably lead to the loss of haplotypes that might otherwise be shared with other populations, leading to the ability to distinguish a population as "different." In other words, it is technically possible to differentiate between two such populations on the basis of their genetic characteristics. However, this purely technical ability for genetic discrimination between populations does not necessarily represent any biological or ecological importance. We have no information to indicate that the fixation of any single microsatellite allele in mountain whitefish in the Big Lost River may, in any way, be biologically important or significant to the taxon as a whole. Such fixed allelic differences between geographically isolated freshwater populations of salmonid fishes are not considered uncommon (Allendorf and Waples 1996, p. 257). Although these allelic differences may allow for the detection of statistically significant differences between populations, and hence the ability to discriminate between them on the basis of their genetic characteristics, as Hedrick (1999, p. 317) notes, the connection between biological and statistical significance may often be weak, and great care must be taken in interpreting statistical significance as the equivalent of biologically meaningful significance.

Mountain whitefish in the Big Lost River do possess unique mitochondrial DNA haplotypes, but the same is true of almost every other mountain whitefish population sampled by Campbell and Kofzkay (2006, Table 1, p. 6) and Miller (2006, Table 3, pp. 51-56, and Table 4, pp. 57-63). The majority of surveyed mountain whitefish populations had unique mitochondrial DNA haplotypes, as does the population in the Big Lost River, and some populations had several. The possession of a population-specific haplotype is, therefore, not unique to the mountain whitefish in the Big Lost River. In addition, the genetic divergence of mountain whitefish in the Big Lost River is not necessarily greater than that observed in other populations. For example, based on the data of Campbell and Kofzkay (2006, Figure 3, p. 8) and Miller (2006, Figure 16, pp. 130-157), the divergence among haplotypes between fish in the Big Lost River and other populations in the Upper Snake River is approximately three times less than the degree of divergence observed among individual mountain whitefish collected from a single population in the Boise River.

In our review of the best available information regarding the degree of genetic divergence of mountain whitefish in the Big Lost River relative to other populations of whitefish, we have determined that many – if not most – populations of mountain whitefish sampled by Campbell and Kozfkay (2006, p. 6) and Miller (2006, pp. 51-63) can be said to be genetically different relative to other populations of the species. Most mitochondrial DNA haplotypes occur in only one population and are not shared between populations, clearly indicating the lack of gene flow among most populations (Campbell and Kofzkay 2006, Table 1, p. 6; Miller 2006, Table 3, pp. 51-56, and Table 4, pp. 57-63). In addition, substantially greater mitochondrial DNA nucleotide diversity exists among individual fish within some populations of mountain whitefish, than exists between mountain whitefish in the Big Lost River and other populations in the Upper Snake River (Campbell and Kofzkay 2006, Figure 3, p. 8; Miller 2006, Figure 16, pp. 130-157). Genetic analyses by both Whiteley *et al.* (2006, pp. 2775-2776) and Miller (2006, p. 30) determined that mountain whitefish in the Big Lost River cluster within the Upper Snake genetic subgroup of *Prosopium williamsoni*. Based on the best available scientific information, we conclude the evidence is not sufficient to support recognition of the mountain whitefish in the Big Lost River as a separate species or subspecies based on the genetic characteristics of the population relative to all other populations of the species *P. williamsoni*.

As we noted earlier, in evaluating whether an entity may potentially represent a heretofore unrecognized species or subspecies, it is important to consider multiple lines of evidence. Haig *et al.* (2006, p. 8) argue that higher levels of confidence can be obtained in classifications based on the concurrence of multiple morphological, molecular, ecological, behavioral, and physiological characters. We therefore considered whether any other characteristics of mountain whitefish in the Big Lost River offer any credible support for the argument that they may be a separate species or subspecies.

The information available to us suggests mountain whitefish in the Big Lost River may exhibit differences in coloration or morphology. This suggestion is based on the personal observations of two researchers, Andrew Whiteley and Bart Gamett. Dr. Whiteley suggested that mountain whitefish from the Big Lost River may differ in color and form, possibly having shorter heads and a different body shape, but stated that these traits have not been quantified and were based only on his personal observations (A. Whiteley 2007a, pers. comm.). Mr. Gamett (2009b, pp. 8-9) also noted that mountain whitefish from the Big Lost River can be readily distinguished from specimens of mountain whitefish found in other drainages (e.g., Pahsimeroi River) based on color; however, this has not been formally described, and is based on personal opinion. Gamett (2009b, p. 9) noted that further research is needed to address this question.

Although mountain whitefish in the Big Lost River may possibly look different, we have no evidence before us to suggest that any differences in color or morphology that may exist are anything other than natural phenotypic variation that is often observed in different populations of fish. Natural variation in characteristics such as body shape in fish is commonly attributable to environmental factors, such as water temperature during development (e.g., Barlow 1961, pp. 105-106). Additionally, many fish exhibit a considerable degree of intraspecific (within the species) variation in morphology, which has been experimentally demonstrated to be the result of phenotypic plasticity in response to the environment, rather than a heritable response to selection (e.g., Mittelbach *et al.* 1999, pp. 111, 126). Head depth is a common plastic trait in fish related to diet (e.g., Day *et al.* 1994, pp. 1723, 1730). We have no information to suggest that any apparent differences in morphology or coloration of the mountain whitefish in the Big Lost River, which have never been quantified or formally described, are in any way biologically meaningful such that they might represent possible differentiation to the degree that subspecies or species recognition might be warranted—that is, whether they might possibly be associated with some fitness advantage or adaptation specific to this population, as opposed to simple local variation in phenotypic traits.

It has been suggested that the mountain whitefish in the Big Lost River are more genetically divergent than currently recognized species of *Prosopium* endemic to Bear Lake (Whiteley 2007b, pers. comm.). In her examination of the three species of *Prosopium* endemic to Bear Lake (*P. abyssicola*, *P. gemmifer*, and *P. spilonotus*), Miller (2006, pp. 31-32) found the mitochondrial DNA data failed to break into discrete clades of their respective species, possibly indicative of ongoing adaptive radiation (i.e., they are still undergoing the process of speciation), ongoing hybridization, or other factors. In this case, although the genetic information does not provide a clear distinction between these three groups, other multiple lines of evidence potentially support the taxonomic distinction between these species, including differences in spawning times, scale counts, and morphology (Miller 2006 and references therein, pp. 2-3, 34). Miller notes that although the three Bear Lake species are not genetically differentiable, the "morphological, ecological, and behavioral differences are real" (Miller 2006, p. 32). However, she also points out that this lack of congruence with the genetic information does raise some questions regarding the current classification of these species (Miller 2006, p. 35), further reinforcing the point that stronger taxonomic distinctions can be made based on multiple lines of consistent supporting evidence.

By contrast, although mountain whitefish in the Big Lost River may show a greater degree of genetic differentiation from other groups than that observed in the Bear Lake *Prosopium*, we note that any potentially corroborating morphological, ecological, behavioral, or physiological characteristics that might serve as supporting evidence of meaningful phenotypic divergence, such as that used in identifying the three species of Bear Lake *Prosopium*, are lacking for mountain whitefish in the Big Lost River. Most populations of mountain whitefish exhibit a high degree of geographical genetic differentiation throughout their range (Campbell and Kofzkay 2006, Figure 3, p. 8; Whiteley *et al.* 2006, p. 2781), and several of them show a greater degree of genetic differentiation than that exhibited between the three species of Bear Lake *Prosopium* (Miller 2006, Figure 16, pp. 130-157). However, in the absence of any reliable corresponding evidence indicative of local adaptation or phenotypic divergence, we believe there is insufficient support for the recognition of any such population as a new species or subspecies based on this genetic information. Thus we do not find the greater genetic divergence observed in mountain whitefish in the Big Lost River relative to that observed between the Bear Lake *Prosopium* persuasive evidence that mountain whitefish in the Big Lost River should be considered a species or subspecies.

In summary, mountain whitefish occurring in the Big Lost River are not currently recognized by the relevant taxonomic authorities as a species or subspecies (Nelson *et al.* 2004, p. 86; ITIS 2009; NatureServe 2009), and our evaluation of the best available scientific and commercial data does not indicate that mountain whitefish in the Big Lost River represent a distinct species or subspecies relative to other populations of *Prosopium williamsoni*. Available evidence indicates there is a high degree of genetic structuring between many populations of mountain whitefish, and particularly those in the Upper Snake, as is frequently observed between populations of other freshwater salmonids (Allendorf and Waples 1996, p. 257; Miller 2006, p. 25; Whiteley *et al.* 2006, pp. 2781, 2783). Modern molecular techniques allow virtually every population to be distinguished from one another, and almost every population of mountain whitefish surveyed had at least one unique haplotype. Thus every population of mountain whitefish sampled so far could be considered genetically "distinct," including the mountain whitefish in the Big Lost River. As explained above, however, the genetic data before us do not indicate that the mountain whitefish in the Big Lost River are biologically unique or unusual compared to other populations of the species, so as to warrant consideration as a separate species or subspecies.

Furthermore, in reviewing all available information, we found no substantiated evidence of ecological, morphological, physiological, behavioral, or other characteristics that would indicate any adaptive divergence or patterns of adaptation have taken place in mountain whitefish occurring in the Big Lost River, and that might be considered additional evidence of a potentially distinct species or subspecies. We therefore conclude, based on all of the best available scientific and commercial data, that consideration of mountain whitefish in the Big Lost River as a separate species or subspecies is not warranted at this time.

Evaluation of Mountain Whitefish in the Big Lost River as a Distinct Population Segment

To interpret and implement the distinct vertebrate population segment (DPS) provisions of the Act and Congressional guidance, we, in conjunction with the National Marine Fisheries Service (now the National Oceanic and Atmospheric Administration—Fisheries), published the Policy Regarding the Recognition of Distinct Vertebrate Population Segments (DPS Policy) in the **Federal Register** on February 7, 1996 (61 FR 4722). Under the DPS policy, two basic elements are considered in the decision regarding the establishment of a population of a vertebrate species as a possible DPS. We must first determine whether the population qualifies as a DPS; this requires a finding that the population is both: (1) Discrete in relation to the remainder of the species to which it belongs; and (2) biologically and ecologically significant to the species to which it belongs. If the population meets the first two criteria under the DPS policy, we then proceed to the third element in the process, which is to evaluate the population segment's conservation status in relation to the Act's standards for listing as an endangered or threatened species. These three elements are applied similarly for additions to or removals from the Federal Lists of Endangered and Threatened Wildlife and Plants.

In accordance with our DPS Policy, we detail our analysis of whether a vertebrate population segment under consideration for listing may qualify as a DPS. As described above, we first evaluate the population segment's discreteness from the remainder of the species to which it belongs. Under the DPS policy, a population segment of a vertebrate taxon may be considered discrete if it satisfies either one of the following conditions:

(1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation.

(2) It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

If we determine that a vertebrate population segment is discrete under one or more of the conditions described in the Service's DPS policy, we then consider its biological and ecological significance to the larger taxon to which it belongs, in light of Congressional guidance (see Senate Report 151, 96th Congress, 1st Session) that the authority to list DPSes be used "sparingly" while encouraging the conservation of genetic diversity. In making this determination, we consider available scientific evidence of the discrete population segment's importance to the taxon to which it belongs. Since precise circumstances are likely to vary considerably from case to case, the DPS policy does not describe all the classes of information that might be used in determining the biological and ecological importance of a discrete population. However, the DPS policy describes four possible classes of information that provide evidence of a population segment's biological and ecological importance to the taxon to which it belongs. As specified in the DPS policy (61 FR 4722), this consideration of the population segment's significance may include, but is not limited to, the following:

(1) Persistence of the discrete population segment in an ecological setting unusual or unique to the taxon;

(2) Evidence that loss of the discrete population segment would result in a significant gap in the range of a taxon;

(3) Evidence that the discrete population segment represents the only

surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; or

(4) Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

A population segment needs to satisfy only one of these conditions to be considered significant. Furthermore, other information may be used as appropriate to provide evidence for significance.

Discreteness

Our DPS policy states that a population segment of a vertebrate species may be considered discrete if it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. We find that mountain whitefish in the Big Lost River are discrete, since they occur in a closed basin lacking a surface connection to any major river system, and are therefore physically separated from the remainder of the populations in the taxon. We therefore conclude that mountain whitefish in the Big Lost River satisfy the discreteness criterion of the DPS policy.

Significance

Having determined that mountain whitefish in the Big Lost River meet the discreteness criterion, our DPS policy directs us to next consider available scientific evidence of the biological and ecological importance of this discrete population to the remainder of the species to which it belongs. In this case, we evaluate the biological and ecological significance of the mountain whitefish in the Big Lost River relative to mountain whitefish throughout the remainder of their range in the western United States and Canada. A discrete population is considered significant under the DPS policy if it meets one of four of the elements identified in the policy under significance, or can otherwise be reasonably justified as being significant. Here we evaluate the four potential factors suggested by our DPS policy in evaluating significance.

(1) Persistence of the Discrete Population Segment in an Ecological Setting Unusual or Unique to the Taxon

Mountain whitefish in the Big Lost River are found in a closed surface drainage basin. However, as noted earlier, mountain whitefish also occur in isolated populations in sink drainages in the Bonneville Basin in Utah and the Lahontan Basin in California and Nevada. In addition, mountain whitefish also occur in other geographically isolated settings, such as above barrier waterfalls (e.g., Big Wood River, Bull River, Thutade Lake, Henry's Fork; Whiteley *et al.* 2006, pp. 2780-2781) or above saltwater barriers to dispersal, as on the Olympic Peninsula (Whiteley *et al.* 2006, p. 2781). Therefore, the mere fact that these mountain whitefish occupy a physically isolated drainage is not in and of itself unique, unusual, or significant to the species as a whole. Although we acknowledge that Miller (2006, p. 29) describes the Big Lost River as the most unique drainage of the upper Snake River subbasin due to its geological history, we note that this reference is comparing the drainage only within the context of the subbasin in which it occurs, and not to the entire range of mountain whitefish. Miller (2006, p. 2) points out that members of the genus *Prosopium* in western North America "occupy discrete drainage basins most of which have complex geological histories." Residence in a discrete drainage basin with a complex geological history therefore appears to be a general characteristic of the genus.

We have no information indicating that the geological history of the Big Lost River drainage, even if considered unique or unusual, has in any way contributed to a unique or unusual ecological setting, such that the whitefish occurring therein are biologically or ecologically significant to the species as a whole. As noted above, there are other populations of mountain whitefish in closed "sink" drainages within the range of the species. We have no information indicating that the Big Lost River drainage is ecologically unusual or unique in any other way (for example, in terms of unique or unusual prey species, community composition, water chemistry, pathogens, or substrate), apart from its geographic setting, that may serve as an indicator of the biological or ecological importance of the population of mountain whitefish found there in relation to the species as a whole. The one exception is a suggestion that the Big Lost River may be ecologically unusual because historically it lacked other large fish species, such as trout; we discuss this suggestion below.

Gamett (2009b, p. 8) suggests that the Big Lost River may be unusual due to the fact that other than mountain whitefish, the only other large fish native to the river are sculpin, and all other mountain whitefish have evolved in the presence of other large fish such as trout and suckers. He states that all other fish species, including several species of trout, were not introduced into the Big Lost River until the arrival of the first permanent settlers in the late 1800s (Gamett 2009a, pp. 1, 8). We carefully considered the potential ecological or biological significance of this information. If there were some evidence that in the absence of trout or other large fish, mountain whitefish in the Big Lost River had somehow become specialized or otherwise adapted to this particular ecological condition in a way that set them apart from the remainder of the species, this may be of potential biological or ecological importance. There is no information to suggest that mountain whitefish in the Big Lost River became specialized or adapted in this manner. Several species of trout were introduced to the Big Lost River more than 100 years ago, with no apparent effect—behavioral, morphological, or otherwise—on the mountain whitefish population. Mountain whitefish in the Big Lost River have shown none of the responses typical of a native species responding to an unfamiliar invasive species, such as niche displacement or competitive exclusion (Mooney and Cleland 2001, pp. 5446-5451).

We found no information to suggest that mountain whitefish in the Big Lost River had become so specialized following their isolation from the remainder of the taxon that they are now incapable of coexisting with trout. Studies have shown no evidence of competition between nonnative fish and mountain whitefish, and it is considered unlikely that competition has negatively affected mountain whitefish in the Big Lost River, since declines in this mountain whitefish population were only reported relatively recently, and were not observed subsequent to the introduction of trout over 100 years ago (IDFG 2007a, p. 22). Therefore, although the information that mountain whitefish in the Big Lost River were isolated from trout and other potentially predatory or competitive fishes up until approximately 100 years ago is possibly of some biological interest, we have no evidence that it represents any ecological significance of the setting, or has resulted in any unique or unusual adaptations or trait shifts in the mountain whitefish, such that the population of mountain whitefish in the Big Lost River would be considered biologically or ecologically significant to the species throughout its range.

On the basis of an evaluation of the best available scientific information, we have determined that the Big Lost River does not represent an ecological setting that is unusual or unique for mountain whitefish relative to the taxon's range in western North America. Other populations of mountain whitefish occur in closed drainage basins within the range of the species and other populations of mountain whitefish occur in settings that are physically or geographically isolated (and therefore reproductively isolated) from the remainder of the taxon. Although mountain whitefish may have lived in the Big Lost River since the estimated time of their physical isolation some 10,000 years ago in the absence of trout and other large fish, we have no evidence that this past ecological condition is of any biological or ecological significance. There is no evidence that the introduction of multiple species of trout to the Big Lost River over 100 years ago had any effect on the mountain whitefish population, suggesting that their previous absence had not altered the mountain whitefish's behavior or ecology in any biologically significant ways, or resulted in any locally adapted traits. None of the information available to us indicates that the setting of the Big Lost River is unique or unusual in any other aspect of its ecology; we have no information suggesting the Big Lost River is unusual or unique in any of its ecological characteristics such as water chemistry, temperature, substrate, pathogens, or prey species utilized. We conclude that mountain whitefish occurring in the Big Lost River do not occupy an unusual or unique ecological setting such as to be biologically or ecologically significant to the remainder of the taxon to which they belong. We therefore conclude that mountain whitefish in the Big Lost River do not meet the significance criterion of the DPS policy based on this factor.

(2) Evidence That Loss of the Discrete Population Segment Would Result in a Significant Gap in the Range of a Taxon

Mountain whitefish are found throughout mountainous areas of western North America in the United States and Canada. They are considered common and widely distributed throughout the upper Snake and Missouri rivers to the east and northeast, the lower Snake and Columbia rivers to the west and northwest, and the Bonneville and Lahontan basins to the south and southwest. In southern Idaho alone, the population of mountain whitefish is estimated to be 4.7 ± 1.8 million, based on a study of 119,453 km (74,225 mi) of stream surveys (Meyer *et al.* 2009, p. 760). The population of mountain whitefish in the Big Lost River is estimated to be 12,639 adults, occupying 135 km (83 mi) of stream (Garren *et al.* 2009, p. 6). The fraction of the population and its range represented by the mountain whitefish in the Big Lost River is very small when considered relative to the remainder of the species' range in southern Idaho. When compared to the range of mountain whitefish throughout western North America, we find that the gap in the range that would result from the loss of the single population of mountain whitefish in the Big Lost River of Idaho would not be significant, because it is so very small. We therefore conclude that mountain whitefish in the Big Lost River do not meet the significance criterion of the DPS policy based on this factor.

(3) Evidence That the Discrete Population Segment Represents the Only Surviving Natural Occurrence of a Taxon That May Be More Abundant Elsewhere as an Introduced Population Outside Its Historical Range

This criterion does not apply to mountain whitefish in the Big Lost River because it is not a population segment representing the only surviving natural occurrence of the taxon that may be more abundant elsewhere as an introduced population outside its historical range. We therefore conclude that mountain whitefish in the Big Lost River do not meet the significance criterion of the DPS policy based on this factor.

(4) Evidence That the Discrete Population Segment Differs Markedly from Other Populations of the Species in Its Genetic Characteristics

We evaluated information available to us regarding the genetic characteristics of mountain whitefish in the Big Lost River in our evaluation of this population as a potentially separate species or subspecies (see "*Evaluation of Mountain Whitefish in the Big Lost River as a Species or Subspecies*" above). Our conclusions from this evaluation apply here as well, and we include the above discussion under this factor by reference, although under the DPS policy we measure the evidence against a slightly different standard (potential biological and ecological significance to the species as a whole, as reflected by marked differences in its genetic characteristics). Our evaluation of the best available scientific information, as detailed above, does not support the contention that the genetic characteristics of mountain whitefish in the Big Lost River differ markedly from those of other populations relative to levels of divergence among other populations of mountain whitefish. On the contrary, the information indicates that the genetic distance observed between mountain whitefish in the Big Lost River and surrounding populations is less than that observed between other species or subspecies of salmonids to which it has been compared (Campbell and Kozfkay 2006, p. 7), and is also less than that observed between individual fish within some populations of mountain whitefish in other areas (Miller 2006, Figs. 15 and 16). As detailed above, the evidence indicates the degree of genetic differentiation between mountain whitefish in the Big Lost River and surrounding populations is no greater than that observed between many other populations of mountain whitefish throughout the range of the species (Campbell and Kofzkay 2006, Figure 3, p. 8; Miller 2006, pp. 27-35; Whiteley *et al.* 2006, p. 2781). When measuring this evidence against the DPS standard, we looked for evidence of marked differentiation of mountain whitefish in the Big Lost River when compared to other populations of mountain whitefish throughout the range of the species. We conclude the degree of genetic divergence observed in this population does not rise to the level of significance to the taxon as a whole.

As noted above, the most recent genetic work (Miller 2006, pp. 27-35; Whiteley *et al.* 2006, pp. 2780-2781) indicates there are several physically isolated populations of mountain whitefish that, as expected under a scenario of reduced gene flow, show some divergence from their presumed common populations of origin. Furthermore, the research demonstrates that most populations of mountain whitefish sampled have diverged to the point of possessing unique haplotypes, and other populations of mountain whitefish exhibit a greater degree of genetic divergence than observed in mountain whitefish from the Big Lost River (Campbell and Kozfkay 2006, p. 7). Mountain whitefish, in general, appear to exhibit a high degree of genetic structure between populations, as observed in many species of freshwater fishes (Gyllensten 1985, p. 691; Allendorf and Waples 1996, p. 257; Whiteley *et al.* 2006, p. 2783). More importantly, however, scientific information to indicate that the genetic divergence observed in these populations confers any fitness advantage or otherwise contributes to the biological or ecological importance of this population, in relation to the taxon as a whole, is lacking. Particularly when a population has gone through a presumed bottleneck, as evidenced by the lack of microsatellite DNA variation observed in mountain whitefish in the Big Lost River, the amount of genetic distance is expected to increase very quickly (Hedrick 1999, p. 315). Such increased distance does not, however, automatically confer biological significance in the absence of any indication of local adaptive differences.

The Service fully supports conserving the mountain whitefish as a component of the native biodiversity of the Big Lost River. However, whether mountain whitefish in the Big Lost River are deserving of conservation in the name of preserving native biodiversity is not the same question as whether the mountain whitefish found in the Big Lost River may qualify as a listable entity under the Act. Additionally, under the "significance" prong of the DPS policy, we are required to apply a different and specific set of criteria. We find that, based on the genetic information available and as detailed in our analysis in the section "*Evaluation of Mountain Whitefish in the Big Lost River as a Species or Subspecies*" above, mountain whitefish in the Big Lost River do not differ markedly from other populations of the species in their genetic characteristics such that they are biologically or ecologically significant to the species as a whole. Rather, all available information indicates the level of genetic differentiation is not unusual for mountain whitefish, when considered in the context of the species across its range. We acknowledge that mountain whitefish in the Big Lost River may be genetically distinguished from other nearby populations, but we do not consider this degree of divergence to be a marked level of differentiation, particularly in light of the fact that other populations of mountain whitefish, such as those in the Boise River (Campbell and Kofzkay 2006, Figure 3. p. 8) and Skokomish River (Miller 2006, Figure 15c, p. 118), show greater degrees of difference.

We conclude mountain whitefish, in general, exhibit a high degree of genetic structure, and the mountain whitefish in the Big Lost River are not any more different or significant to the taxon as a whole than any of several other populations of mountain whitefish throughout the species' range. The current genetic characteristics likely reflect a historical population bottleneck and the overall isolation of the population, and we have no supportable evidence of any corresponding phenotypic divergence that may be biologically meaningful or indicative of local adaptation, such that it should be considered biologically or ecologically significant to the taxon as a whole. With the additional consideration that the authority to list DPSes be used "sparingly," we conclude that mountain whitefish occurring in the Big Lost River do not meet the significance criterion of the DPS policy based on this factor, due to the number of populations rangewide that exhibit similar characteristics.

DPS Conclusion

Our DPS policy directs us to evaluate the significance of a discrete population in the context of its biological and ecological significance to the remainder of the species to which it belongs. Based on an analysis of the best available scientific and commercial data, we conclude that mountain whitefish in the Big Lost River are discrete due to their physical separation from the remainder of the taxon. Mountain whitefish in the Big Lost River do not, however, meet any of the four identified elements in the DPS policy for determining significance, and we have no information suggesting the population could otherwise be reasonably justified as being significant. Because the mountain whitefish occupying the Big Lost River fail to meet our significance criterion for a DPS under our policy, we conclude this discrete population is not significant to the taxon to which it belongs, and therefore does not qualify as a DPS under the Act.

Listable Entity Determination

We have determined that mountain whitefish occurring in the Big Lost River do not constitute a species or subspecies separate from the more widespread *Prosopium williamsoni*. Although the population is considered discrete, the available scientific evidence indicates this population is not biologically or ecologically significant to the species as a whole according to the criteria outlined in our 1996 DPS policy; consequently this population cannot be considered a DPS. We therefore find the mountain whitefish in the Big Lost River do not qualify as a listable entity (species, subspecies, or DPS) under section 3(16) of the Act. Because we found that the population segment does not meet the significance element and therefore does not qualify as a DPS under the Service's DPS policy, we will not proceed with an evaluation of the status of the population segment under the Act.

Significant Portion of the Range Analysis

The Act defines an endangered species as one "in danger of extinction throughout all or a significant portion of its range," and a threatened species as one "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Having determined that the mountain whitefish in the Big Lost River is not a listable entity (species, subspecies or DPS) under the Act, we next consider whether the mountain whitefish in the Big Lost River constitutes a significant portion of the species' range and, if so, whether it is in danger of extinction or is likely to become endangered in the foreseeable future. We consider a portion of a species' range to be significant if it is part of the current range of the species and is important to the conservation of the species because it contributes meaningfully to the representation, resiliency, or redundancy of the species. The contribution must be at a level such that its loss would result in a decrease in the ability of the species to persist.

The first step in determining whether a species is endangered or threatened in a significant portion of its range is to identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and endangered or threatened. To identify those portions that warrant further consideration, we determine whether there is substantial information indicating that: (1) The portions may be significant, and (2) the species may be in danger of extinction there or likely to become so within the foreseeable future. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the species' range that are not significant, such portions will not warrant further consideration.

If we identify any portions of a species' range that warrant further consideration, we then determine whether the species is endangered or threatened in these portions of its range. Depending on the biology of the species, its range, and the threats it faces, it may be more efficient in some cases for the Service to address the significance question first, and in others the status question first. Thus, if the Service determines that a portion of the range is not significant, the Service need not determine whether the species is endangered or threatened there; conversely, if the Service determines that the species is not endangered or threatened in a portion of its range, the Service need not determine if that portion is significant. However, if the

Service determines that both a portion of the range of a species is significant and the species is endangered or threatened there, the Service will specify that portion of the range as endangered or threatened under section 4(c)(1) of the Act.

The terms "resiliency," "redundancy," and "representation" are intended to be indicators of the conservation value of portions of the species' range. Resiliency of a species allows the species to recover from periodic disturbance. A species will likely be more resilient if large populations exist in high-quality habitat that is distributed throughout the range of the species in such a way as to capture the environmental variability within the range of the species. It is likely that the larger size of a population will help contribute to the viability of the species. Thus, a portion of the range of a species may make a meaningful contribution to the resiliency of the species if the area is relatively large and contains particularly high-quality habitat or if its location or characteristics make it less susceptible to certain threats than other portions of the range. When evaluating whether or how a portion of the range contributes to resiliency of the species, it may help to evaluate the historical value of the portion and how frequently the portion is used by the species. In addition, the portion may contribute to resiliency for other reasons—for instance, it may contain an important concentration of certain types of habitat that are necessary for the species to carry out its life-history functions, such as breeding, feeding, migration, dispersal, or wintering.

Redundancy of populations may be needed to provide a margin of safety for the species to withstand catastrophic events. This does not mean that any portion that provides redundancy is a significant portion of the range of a species. The idea is to conserve enough areas of the range such that random perturbations in the system act on only a few populations. Therefore, each area must be examined based on whether that area provides an increment of redundancy that is important to the conservation of the species.

Adequate representation insures that the species' adaptive capabilities are conserved. Specifically, the portion should be evaluated to see how it contributes to the genetic diversity of the species. The loss of genetically based diversity may substantially reduce the ability of the species to respond and adapt to future environmental changes. A peripheral population may contribute meaningfully to representation if there is evidence that it provides genetic diversity due to its location on the margin of the species' habitat requirements.

Applying the process described above, we first evaluated whether the population of mountain whitefish occurring in the Big Lost River constitutes a significant portion of the range of the species. As noted earlier, mountain whitefish are found throughout mountainous areas of western North America in Canada and the United States. In the United States, they are known to occur in the States of Washington, Oregon, Idaho, Wyoming, Montana, Colorado, Utah, Nevada, and California (NatureServe 2009). Mountain whitefish are relatively common and widespread in most river basins in Idaho (AFS 2007, p. 29), with stream size documented to be an important factor influencing both the distribution and abundance of mountain whitefish in the upper Snake River basin (Meyer *et al.* 2009, p. 762; Maret *et al.* 1997, p. 213). Within the State of Idaho, mountain whitefish are abundant where they occur. For example, during a recent survey of 2,043 study sites in Idaho across 119,453 km (74,225 mi) of stream in 21 major river drainages in the upper Snake River basin (excluding the Big Lost River), 767 sites in 11 of the 21 river drainages were documented to support mountain whitefish (Meyer *et al.* 2009, p. 760). From this survey the authors also estimated the abundance of mountain whitefish to be 4.7 ± 1.8 million in southern Idaho, occurring mostly in streams wider than 15 m (49 ft) (Meyer *et al.* 2009, p. 764). The current population of mountain whitefish in the Big Lost River is estimated to be 12,639 adults (Garren *et al.* 2009, p. 6) occurring in approximately 135 km (83 mi) of stream. The mountain whitefish population occurring in the Big Lost River thus represents less than 0.5 percent of the total estimated numbers of mountain whitefish in southern Idaho, and occupies approximately 0.1 percent of the stream miles of the survey. Extending this comparison to consider mountain whitefish in the Big Lost River relative to the taxon throughout its range in western North America, the fraction of the species' total population represented by mountain whitefish in the Big Lost River would be extremely small.

Although the majority of mountain whitefish occur in riverine environments, some populations are restricted to lakes or isolated sink basins. The fact that mountain whitefish in the Big Lost River are found in a geographically isolated drainage is not significant to the species as a whole, as other populations of mountain whitefish also occur in physically isolated settings throughout the range of the species, such as the Lahontan Basin in California and Nevada, and the Bonneville Basin in Utah. As described earlier in our DPS analysis, we could not find any information that the Big Lost river drainage is ecologically unusual, unique, or otherwise significant to the species as a whole in any way (for example, in terms of atypical prey species, water chemistry, or substrate). Based on the best available information we have on mountain whitefish, the population that occurs in the Big Lost River does not appear to exist in an unusual or unique ecological setting, or contain a large portion of the habitat or individuals relative to the taxon as a whole. Rather, the Big Lost River appears to constitute an extremely small portion of the species' overall habitat and number of individuals when compared to the Upper Snake River basin population of mountain whitefish, and even more so when compared to mountain whitefish rangewide throughout western North America. We thus do not consider mountain whitefish in the Big Lost River to provide an important component of resiliency to the species as a whole.

In terms of representation, mountain whitefish occurring in the Big Lost River are not recognized as a species or subspecies by the relevant taxonomic authorities, State of Idaho, and others (Nelson *et al.* 2004, p. 86; IDFG 2009; ITIS 2009; NatureServe 2009), and the best available information indicates that the genetic distance observed between mountain whitefish in the Big Lost River and surrounding populations is substantially less than that observed between other species or subspecies of salmonids (Campbell and Kozfkay 2006, p. 7). Likewise, as discussed above, information from the most current genetic assessments of mountain whitefish does not indicate this population is markedly different or unique in terms of its genetic characteristics, any more so than many other populations of mountain whitefish throughout the range of the species. The available evidence indicates that there is a high degree of genetic structuring between populations of mountain whitefish, as is frequently observed in populations of freshwater salmonids (Allendorf and Waples 1996, p. 257; Miller 2006, p. 25; Whiteley *et al.* 2006, p. 2783). The degree of genetic differentiation between mountain whitefish in the Big Lost River and surrounding populations is no greater than that observed between other populations of mountain whitefish (Campbell and Kozfkay 2006, Figure 3, p. 8; Miller 2006, pp. 22, 29-30; Whiteley *et al*. 2006, p. 2781). We thus do not consider mountain whitefish in the Big Lost River to make a significant contribution to the representation of the species as a whole.

Finally, mountain whitefish in the Big Lost River group with the major genetic assemblage of the Upper Snake River and are most genetically similar to that group. We find it unlikely, however, that mountain whitefish in the Big Lost River would provide any meaningful redundancy to the species if other populations of mountain whitefish in the Upper Snake River basin were to be extirpated by a catastrophic event. The Big Lost River is geographically separated from the Snake River and other streams. It is therefore unlikely that fish in the Big Lost River would be a significant source of mountain whitefish to recolonize streams within the Upper Snake River.

We have determined the mountain whitefish in the Big Lost River do not provide a meaningful contribution to the species as a whole with regard to redundancy, resiliency, and representation of mountain whitefish throughout their range in western North America. Based upon this determination, we find the mountain whitefish in the Big Lost River do not represent a significant portion of the species' range. Having reached this conclusion, we will not further evaluate the status of mountain whitefish in the Big Lost River as a significant portion of the range of the species.

Finding

After a thorough review of the best scientific and commercial information available, we find that listing the mountain whitefish in the Big Lost River of Idaho is not warranted. We have determined the mountain whitefish in the Big Lost River are not a species, subspecies, or DPS as defined by section 3(16) of the Act, and therefore are not eligible for listing. In addition, we have further determined the mountain whitefish in the Big Lost River do not represent a significant portion of the range of the species *Prosopium williamsoni*. We therefore find the mountain whitefish in the Big Lost River are not eligible for the protections of the Act. Consequently, we are not proceeding with an evaluation of the conservation status of mountain whitefish in the Big Lost River relative to the Act's standards for listing as endangered or threatened. This finding concludes our status review and constitutes our final response to the petition.

We strongly support ongoing conservation efforts to restore habitat for the mountain whitefish and other native species residing in the Big Lost River, and to monitor the status, trends, and threats to this native population of fish. We emphasize that our determination that mountain whitefish in the Big Lost River do not constitute a listable entity under the Act should in no way diminish the value of conserving this population as an important component of the natural community. We encourage all interested parties to assist with the management and conservation of mountain whitefish in the Big Lost River basin and to preserve all elements of native biodiversity in this ecosystem.

We request that you submit any new information concerning the status of, or threats to, the mountain whitefish in the Big Lost River basin to our Idaho Fish and Wildlife Office (see **ADDRESSES** section) whenever it becomes available. New information will help us monitor the mountain whitefish in the Big Lost River basin and encourage their conservation.

References Cited

A complete list of all references cited in this document is available on the Internet at *http://www.regulations.gov* and upon request from the Idaho Fish and Wildlife Office (see **ADDRESSES** section).

Authors

The primary authors of this document are staff members of the Idaho Fish and Wildlife Office of the U.S. Fish and Wildlife Service (see **ADDRESSES** section).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended

(16 U.S.C. 1531 *et seq.*).

Dated: March 9, 2010.

Daniel M. Ashe,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2010–7674 Filed 4–5–10; 8:45 am]

BILLING CODE 4310–55–S

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2010-0022]
[MO 92210-0-0008]

Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List a Stonefly (*Isoperla jewetti*) and a Mayfly (*Fallceon eatoni*) as Threatened or Endangered with Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 90–day petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 90–day finding on a petition to list a stonefly (*Isoperla jewetti*) and a mayfly (*Fallceon eatoni*) as threatened or endangered under the Endangered Species Act of 1973, as amended. Based on our review, we find that the petition does not present substantial information indicating that listing either of the species may be warranted at this time. However, we ask the public to submit to us any new information that becomes available concerning the status of, or threats to, the stonefly or the mayfly or their habitat at any time.

DATES: The finding announced in this document was made on April 6, 2010.

ADDRESSES: This finding is available on the Internet at *http://www.regulations.gov* at Docket No. FWS-R2-ES-2010-0022. Supporting documentation we used in preparing this finding is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Southwest Regional Ecological Services Office, 500 Gold Avenue SW, Albuquerque, NM 87102. Please submit any new information, materials, comments, or questions concerning this finding to the above address.

FOR FURTHER INFORMATION CONTACT: Nancy Gloman, Assistant Regional Director, Southwest Regional Ecological Services Office; telephone 505/248-6920; facsimile 505/248-6788. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(A) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), requires that we