

us monitor and encourage the conservation of this species.

**DATES:** The finding announced in this document was made on March 3, 2003. Although further listing action will not result from this finding, we request that you submit new information for this species concerning status or threats whenever it becomes available.

**ADDRESSES:** You may send data, information, or questions concerning this finding to the Supervisor, Upper Columbia Fish and Wildlife Office, U.S. Fish and Wildlife Service, 11103 E. Montgomery Drive, Spokane, WA 99206. This 12-month finding, supporting data, and comments are available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Scott Deeds at the above address (telephone 509/893-8007). Information regarding this finding is available in alternate formats upon request.

#### **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 seeking to revise the List of Threatened and Endangered Species that contains substantial scientific or commercial information that listing may be warranted, we make a finding within 12 months of the date of receipt on whether the petitioned action is (a) not warranted, (b) warranted, or (c) warranted but precluded by other pending proposals. Such 12-month findings are to be published promptly in the **Federal Register**.

We have made a 12-month finding on a petition to list the lower Kootenai River burbot (*Lota lota*). The petition, dated February 2, 2000, was submitted by American Wildlands and the Idaho Conservation League and was received on February 7, 2000. The petition requests the emergency listing of Kootenai River burbot in Idaho as endangered and designation of critical habitat concurrent with the listing. On September 28, 2001, we published a 90-day finding for lower Kootenai River burbot in the **Federal Register** (66 FR 49608). We found that the petition presented substantial information indicating that listing may be warranted. This 12-month finding is made in accordance with a judicially approved stipulated settlement agreement that requires us to complete a finding by March 1, 2003 (*American Wildlands and Idaho Conservation League v. Badgley, Williams, and Norton*, Case No.

CV 02-00118BR). This notice constitutes the 12-month finding for the February 7, 2000, petition.

Burbot, also referred to as eelpout, layer, or ling, are a cold-water, bottom-dwelling fish species and are the only freshwater member of the otherwise marine cod family (Gadidae). Burbot are extremely elongate or eel-like. Back body coloration is with marbled and ranges from dark olive to brown, contrasting with brown or black. The sides of the body are lighter than the back, and the belly is yellowish white (Simpson and Wallace 1982). Burbot have a distinguishing single slender barbel on the chin. Burbot may reach 1 meter (39.4 inches) in length, can weigh up to about 8 kilograms (17.6 pounds), and have a life expectancy up to 20 years (McPhail and Paragamian 2000).

Most information suggests that river-spawning burbot prefer low-velocity areas in main channels or in side channels behind deposition bars, with the preferred substrate consisting of fine gravel, sand, and even fine silt (Fabricius 1954 in McPhail and Paragamian 2000; McPhail and Paragamian 2000). Spawning is also known to occur in small tributary streams and is generally believed to take place at night (Simpson and Wallace 1982; McPhail and Paragamian 2000).

Female burbot are larger than males and, depending on their size, may produce between 50,000 and 1,500,000 eggs each per spawn (Simpson and Wallace 1982). Burbot are known to occur as annual or alternating year spawners (Arndt and Hutchinson 2000; Evenson 2000). Male burbot typically reach sexual maturity in 3 to 4 years, with females maturing in 4 to 5 years (Bonar *et al.* 1997; Arndt and Hutchinson 2000; Evenson 2000). During spawning, burbot typically collect in a large mass referred to as a spawning ball, with one or more females in the center surrounded by many males (Simpson and Wallace 1982; McPhail and Paragamian 2000). There is no site preparation during spawning, and eggs are broadcast into the water column well above the substrate. The eggs are semibuoyant and eventually settle into cracks in the substrate. Newly hatched burbot drift passively in open water until they develop the ability to swim (McPhail and Paragamian 2000). Young burbot initially select shoreline areas among rocks and debris for feeding and habitat security.

Burbot prefer cold water and, during summer months, move to the hypolimnion (lower zone of a thermally stratified lake) areas of lakes or deep water pools of large rivers (Simpson and Wallace 1982). Feeding is mostly done

at night, with adult burbot feeding almost exclusively on a fish diet. Young burbot feed on aquatic organisms such as insects, amphipods, snails, and small fish (Simpson and Wallace 1982). Burbot are most active in the winter, during which some populations move great distances to spawn, and are rather sedentary during the non-spawning seasons.

The geographic range of burbot is circumpolar and extends in an almost continuous distribution from the British Isles eastward across Europe and Asia to the Bering Strait (Berg 1949 in McPhail and Paragamian 2000). On the North America side of the Bering Strait, burbot range eastward from the Seward Peninsula in Alaska (McPhail and Lindsey 1970 in McPhail and Paragamian 2000) to New Brunswick on the Atlantic coast (Scott and Crossman 1973).

Burbot were first described in Europe by Linnaeus in 1758 (American Fisheries Society 1991). Burbot in North America, known as *Lota lacustris* (Walbaum), were originally considered to be a separate species from those in Europe, known as *Lota lota* (Linnaeus) (McPhail and Paragamian 2000). Gunther (1862 in McPhail and Paragamian 2000) later reduced all burbot to a single widespread species. Hubbs and Shultz (1941 in McPhail and Paragamian 2000), then argued on the basis of morphological differences, that at least three subspecies existed: *Lota lota lota* in Europe and most of Siberia; *Lota lota lacustris* (also referred to as *Lota lota maculosa*) in eastern North America; and a new subspecies, *Lota lota leptura*, in northwestern North America and eastern Siberia. Pivnicka (1970 in Van Houdt and Volckaert in draft 2002) performed additional morphological analyses of European burbot populations and determined these were apparently the same as the *Lota lota maculosa* form in North America. Pivnicka, therefore, concluded that burbot include two distinct forms: *Lota lota lota*, which occurs from the Volga River system throughout Siberia and Alaska to the Mackenzie River system in Canada, and the populations in the Elbe and Danube River, which lived peripherally to this subspecies; and *Lota lota maculosa*, which occurs in southernmost Canada, the United States, and western Europe. However, many recent authors have not used this subspecies designation and only recognize burbot to the species level (McPhail and Paragamian 2000).

Most species whose preglacial ranges were fragmented by glaciation show geographic patterns in morphology that suggest survival in multiple refugia