

## Redband Trout and the Endangered Species Act

RONALD RHEW\*<sup>1</sup>

U.S. Fish and Wildlife Service, 2600 SE 98<sup>th</sup> Avenue, Suite 100, Portland, Oregon 97266

*Abstract.*—Redband trout *Oncorhynchus mykiss* and the Endangered Species Act (ESA) have been linked since 1982, when the fish first appeared as a candidate species. Petitions to list populations of redband trout under the ESA were filed with the U.S. Fish and Wildlife Service (USFWS) in 1994, 1995, and 1997. USFWS found that the listing action requested in the first two petitions was not warranted; therefore, they received no further processing. Action on the 1997 petition to list redband trout in the Great Basin was held up for over 2 years because of a backlog that was created by a 1995 budget cut. It has since been reviewed, and a decision that listing was not warranted was issued in 2000. A series of budget and policy decisions in 1995 and 1996 resulted in changes to the procedures and categories used to assign a species to the status of candidate for listing as threatened or endangered under the ESA. Federal legislation in 1995 rescinded \$1.5 million in the USFWS budget that was to be used for listing activities and created a large backlog of pending listing actions. Subsequently in 1996, USFWS eliminated several categories under which a species could be assigned candidate status. The remaining category for candidate status is used for species that are judged to warrant listing as threatened or endangered, but the listing is precluded by higher priority needs. Five populations of redband trout (four in Oregon) had been assigned to Category 2 status (insufficient information to proceed with a proposed rule) by USFWS in their published candidate lists from 1982 to 1994. When the policy was changed in 1996, 23 fish species in Oregon were dropped as candidates for listing, leaving bull trout *Salvelinus confluentus* as the sole fish species in Oregon remaining on the list. Since 1996, bull trout have been removed from the candidate list and listed as threatened. At present, no fish species in Oregon are on the candidate list. Although USFWS no longer maintains an extensive list of candidate species, it continues to promote actions for nonlisted species.

Although the specific taxonomy and phylogenetic relationships among various forms of rainbow trout *Oncorhynchus mykiss* have not been resolved, rainbow trout from coastal river systems have been recognized as having significant differences from rainbow trout inhabiting rivers east of the Cascade Mountains that are commonly known as redband trout (Currens et al. 1990; Behnke 1992; Currens 1997). Redband trout are considered to be a more primitive form of rainbow trout than the coastal populations, and therefore evolutionarily intermediate between an ancestral “cutthroat-like” species and the coastal rainbow trout. In general, redband trout possess characteristics that are closer to cutthroat trout than to rainbow trout, such as presence of a faint orange cutthroat mark under the jaw; presence of vestigial basibranchial teeth in some fish; pronounced white or yellow tips on dorsal, anal, and pelvic fins; higher scale counts; fewer pyloric caecae; and elliptical rather than rounded parr marks (Behnke 1992).

The U.S. Fish and Wildlife Service (USFWS) administers the Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. 1531 *et seq.*) for freshwater fish species, subspecies, and populations. Policy changes in 1996 affected the method used to identify species as candidates for listing under the ESA, and the manner used to process petitions to list species. These policy changes affected the status of redband trout under the ESA and the processing of petitions to list redband trout.

### Listing Process and Candidate Species

USFWS must take several steps to process petitions requesting that a species be added or removed from the list of threatened or endangered species under the ESA. First, USFWS must publish a 90-day finding indicating whether or not a petition presents substantial information that the petition action is warranted, such as decline in abundance or distribution, and loss of or threats to habitat. If the petition is found to have substantial information, USFWS will continue to process the petition, following a prescribed order based on assigned priority for listing actions, and will publish a 12-month finding that the listing is warranted or not warranted. If the petition cannot be processed immediately because listing action is precluded by other higher priority actions, the species is assigned candidate status. Further action on the possible species listing will occur after other higher priority listing actions are processed. If the petition is found to have insufficient evidence that a listing may be warranted, no further action is taken.

Section 4 of the ESA identifies the process and factors to be considered when evaluating species for listing or a change in their listing status. In addition to other information about the status of a species, a substantial finding for a petitioned action must also show that the taxonomic unit requested for listing meets the requirements of a distinct vertebrate population segment (DPS) as defined by USFWS policy (Federal Register 1996a). This policy relies on three elements to determine the validity of a potential DPS: discreteness, significance, and conservation status. A population segment meets the criteria for discreteness if it satisfies either of two conditions: (1) it is markedly separated from other populations of the same taxon as a consequence of

\* E-mail: ron\_rhow@fws.gov

<sup>1</sup> Present address: U.S. Fish and Wildlife Service, Columbia River Fisheries Program Office, 1211 SE Cardinal Court, Suite 100, Vancouver, Washington 98683

physical, physiological, ecological, or behavioral factors; or (2) it is delimited by international governmental boundaries within which differences in control of exploitation, habitat management, conservation status, or adequate regulatory mechanisms exist. After a population is determined to be discrete, evidence of its significance is evaluated, which may consider, but is not limited to, the following: (1) persistence in an ecological setting that is unusual or unique for the taxon, (2) loss of the population would result in a significant gap in the range of the taxon, (3) representative of the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or (4) marked genetic difference from other populations of the species. If the population meets the identified criteria, it must then be evaluated for status as threatened or endangered under the ESA.

Prior to 1996, the definition of a candidate species was any species being considered by the Departments of Interior or Commerce for listing as an endangered or threatened species under the ESA, but which had not been the subject of a proposed rule (Federal Register 1982). Several categories were contained within the candidate status. Category 1 candidates were species for which USFWS had on file sufficient information indicating that the species warranted listing under the ESA, but that its listing was precluded by the need to process higher priority listing actions (warranted but precluded). Category 2 candidates were species for which USFWS had information indicating that the species may be in need of the protections of the ESA, but did not have sufficient information to proceed with a proposed rule to list. Category 3 was basically a classification that removed species from candidate status for one of three reasons. Category 3a species were those believed to have gone extinct. Category 3b species were those that had undergone taxonomic revision and were no longer believed to be taxonomically distinct. Category 3c species were those that had been found to be more abundant than previously believed, or were not presently subjected to threats sufficient to warrant their listing.

### Redband Trout Petitions

USFWS has received three petitions for listing populations of redband trout. The first petition, received in April 1994, requested listing of the Kootenai River redband trout (Federal Register 1995a). The second petition, received in April 1995, requested listing of desert redband trout above Brownlee Dam and below Shoshone Falls on the Snake River (Federal Register 1995b). USFWS found that the requested listings were not warranted because insufficient information was provided to demonstrate that these redband trout populations represented distinct population segments and were therefore a listable entity. The 90-day finding on the second petition stated that USFWS accepted the taxonomic system proposed by Behnke (1992) and recognized redband trout east of the Cascade Mountains as *O. m. gairdneri*. This con-

trasted to previous designations by the USFWS, which identified redband trout east of the Cascade Mountains as *O. m. gibbsi*, and did not include the state of Washington as part of the identified range.

A third petition, received in September 1997, requested listing of the Great Basin redband trout in southern Oregon, northern California, and northwest Nevada. The petition was evaluated for possible emergency listing action and was then put on hold because of the backlog in processing listing actions that was created by passage of Public Law 104-6 (*see below*). The petition was subsequently reviewed in 1998–1999 and a finding that listing was not warranted was issued in 2000 (Federal Register 2000a). In the 90-day finding for Great Basin redband trout (Federal Register 1998b), USFWS also initiated study of the distribution and abundance of interior redband trout, with a range defined as east of the crest of the Cascade Mountains in the Columbia/Snake, Klamath, and Sacramento River systems. In a press release following the 12-month finding on Great Basin redband trout, USFWS anticipated that the review would be completed in 2 to 4 years.

### Budget and Policy Decisions of 1995 and 1996

The U.S. Congress passed Public Law 104-6 in April 1995, which, among other things, rescinded \$1.5 million from the USFWS budget for listing activities and prohibited use of remaining funds for processing final listing determinations for species or critical habitat. At the time of this moratorium, USFWS had proposed rules to list 243 species and had identified 182 species as candidates waiting further processing. Additionally, USFWS continued to receive petitions for listing actions. Therefore, the moratorium created a backlog of listing actions that awaited processing after funding was restored in April 1996. On 16 May 1996, USFWS published final guidance on restarting listing actions that included a five-tier procedure for setting priorities: (1) prepare and process emergency listings; (2) continue to prepare and process outstanding proposed rules based on their listing priority; (3) prepare and process new proposed rules for species facing high magnitude threats and screen petitions for emergency action; (4) prepare and process new proposed listings for species facing moderate or low-magnitude threats, final decisions on proposed reclassifications and delistings, and administrative findings for petitions; and (5) prepare and process critical habitat determinations and new proposed reclassifications or delistings (Federal Register 1996c). The first priority in the latest listing priorities published by USFWS (Federal Register 1999b) remains the processing of emergency listings, and the other three priorities (in order) are to process final decisions on proposed listings, resolve the conservation status of candidate species, and process 90-day or 12-month administrative findings on petitions. Actions on critical habitat designations were no longer given priority with the other listing actions and were to be conducted under a separate budget item.

At the same time that USFWS was dealing with the backlog of listing actions, it initiated a change in the way it listed species as candidates for listing. The policy change was initiated because USFWS felt that the Category 2 list added to “confusion about the conservation status of these taxa” (Federal Register 1996b). In addition, USFWS stated that the need for a species of concern list was “beyond implementation of the Endangered Species Act”, that using the old Category 2 list as a species of concern list was “inappropriate”, and that lists maintained by other governmental and non-governmental entities had “vastly superior information” than that maintained by USFWS (Federal Register 1996d). Under the revised policy of 1996, USFWS limited candidate status to those species for which it has sufficient information to list as endangered or threatened, but issuing proposed rules for listing is precluded by other listing activity. Therefore, the candidate status is now analogous to the previous definition of a Category 1 candidate (warranted but precluded). All other species were removed from the candidate list, and Categories 2 and 3a–3c were eliminated (Federal Register 1996b).

#### Effects of Policy Change on Candidate Species

Redband trout first received candidate status in the Animal Candidate Notice of Review (NOR) of 1982, when they were assigned Category 2 status (Federal Register 1982). The range of redband trout was listed as California, Oregon, Idaho, and Nevada. In the 1991 NOR, four specific populations of redband trout were identified as candidates: (1) Catlow Valley, Oregon; (2) Goose Lake, Oregon and California; (3) McCloud River, California; and (4) Warner Valley, Oregon (Federal Register 1991). In addition, all other redband trout populations that had been identified in the 1982 review were given candidate status under the label of “interior redband trout” and their range was changed from the 1982 review by adding Montana and omitting California. All redband trout in the 1991 review were assigned Category 2 status. No other redband trout populations were added or removed from candidate status through the 1994 review (Federal Register 1994). Because the 1996 change in USFWS policy for identifying candidate species eliminated all but those in Category 1, all Oregon redband trout populations on the candidate list prior to 1996 were removed. Within the identified range of redband trout, the only population identified as a candidate species in the revised 1996 policy was the McCloud River redband trout (Federal Register 1996b). These fish were later removed in 2000 because a Conservation Agreement was believed to have reduced the threats to these fish (Federal Register 2000b).

USFWS listed 24 candidate fish species in Oregon prior to the 1996 policy change (Table 1). After the policy change, the bull trout *Salvelinus confluentus* was the only candidate species in Oregon, but it has since been removed from the candidate list and was listed as threatened in 1998 (Federal Register 1998a). Two Oregon fish species appeared in the

TABLE 1.—Oregon fishes identified as candidate species in 1994.

| Common name                 | Scientific name                       |
|-----------------------------|---------------------------------------|
| Green sturgeon              | <i>Acipenser medirostris</i>          |
| Jenny Creek sucker          | <i>Catostomus rimiculus</i> ssp.      |
| Goose Lake sucker           | <i>C. occidentalis lacusanserinus</i> |
| Klamath largescale sucker   | <i>C. snyderi</i>                     |
| Malheur mottled sculpin     | <i>Cottus bairdii</i> ssp.            |
| Margined sculpin            | <i>C. marginatus</i>                  |
| Slender sculpin             | <i>C. tenuis</i>                      |
| Alvord chub                 | <i>Gila alvordensis</i>               |
| Catlow tui chub             | <i>G. bicolor</i> ssp.                |
| Summer Basin tui chub       | <i>G. bicolor</i> ssp.                |
| Sheldon tui chub            | <i>G. bicolor eury soma</i>           |
| XL Spring tui chub          | <i>G. bicolor oregonensis</i>         |
| River lamprey               | <i>Lampetra ayresi</i>                |
| Goose Lake lamprey          | <i>L. tridentata</i> ssp.             |
| Pacific lamprey             | <i>L. tridentata</i>                  |
| Pit roach                   | <i>Lavinia symmetricus mitrulus</i>   |
| Westslope cutthroat trout   | <i>Oncorhynchus clarkii lewisi</i>    |
| Catlow Valley redband trout | <i>O. mykiss</i> ssp.                 |
| Goose Lake redband trout    | <i>O. mykiss</i> ssp.                 |
| Warner Valley redband trout | <i>O. mykiss</i> ssp.                 |
| Interior redband trout      | <i>O. mykiss gibbsi</i> <sup>a</sup>  |
| Umpqua Oregon chub          | <i>Oregonichthys kalawatseti</i>      |
| Millicoma dace              | <i>Rhinichthys cataractae</i> ssp.    |
| Bull trout                  | <i>Salvelinus confluentus</i>         |

<sup>a</sup> Recognized by USFWS as *O. m. gairdneri* in 1995 per Behnke (1992)

USFWS 2002 NOR (Federal Register 2002a): coastal cutthroat trout *O. clarkii clarkii* (proposed threatened) and Dolly Varden *S. malma* (proposed threatened under a “similarity of appearance” provision because of their physical similarity to the listed bull trout). Coastal cutthroat trout were later withdrawn from proposed listing because it was more abundant than previously believed and because of reduced threats (Federal Register 2002b).

Species, subspecies, or populations that appeared on the former list of candidate species had been assigned a level of conservation importance by various agencies (especially at the federal level). For example, the U.S. Forest Service (USFS) maintains a list of sensitive species that is used to evaluate compliance of USFS actions with the National Forest Management Act (NFMA, 16 USC 1600 *et seq.*). This list was originally drawn from the USFWS candidate list of Category 1 and 2 species. Among other things, USFS policy requires that national forests be managed in a manner that provides for a diversity of plant and animal communities. With the elimination of multiple candidate species categories, questions were raised about the effect this would have on lists of taxa maintained by federal agencies. In response to this issue, USFWS stated that many federal agencies such as USFS, Bureau of Land Management, and Department of Defense were working with The Nature Conservancy’s Heritage Program to evaluate all the species and subspecies appearing on their sensitive species lists (Federal Register 1996d). The Heritage Program ranks species and subspecies on the basis of rarity, such as number of extant populations. USFWS also stated that efforts such as these should

result in a “more comprehensive list” than their previous list of candidate species. The State of Oregon also maintains a list of sensitive vertebrates through the Oregon Natural Heritage Program at Oregon State University, which may be sufficient to maintain conservation focus on the species, subspecies, and populations that formerly were listed on the USFWS candidate list. However, funding at the state level remains uncertain and may jeopardize the comprehensive focus of the program.

Another issue raised with changes in the candidate policy was the value of the Category 2 list as a tool in land use planning for identifying species at risk. USFWS responded that these types of purposes were far broader than the purposes of the ESA, and that numerous other federal laws such as NFMA and the Federal Land Management Planning Act have broad mandates to protect biodiversity.

A policy was developed by USFWS and National Marine Fisheries Service for conservation agreements that recognize the benefit of providing early conservation efforts for “proposed and candidate species, and species likely to become either proposed or candidate species in the near future” (Federal Register 1999a). In addition, a policy was developed to evaluate conservation efforts when making listing decisions based on the certainty of implementation and effectiveness of such efforts (Federal Register 2003). These two policies are intended to promote early conservation efforts and to provide guidance on evaluating how effective these efforts will be to conserve species.

Several conservation agreements have been completed for species of concern including the Colorado River cutthroat trout *O. clarkii pleuriticus*, the McCloud redband trout, and the Catlow Valley redband trout and tui chub *Gila bicolor* ssp. Although these conservation agreements are relatively young and have yet to be tested by factors such as prolonged drought and water shortages or changes in land ownership, it is hoped that they will promote the continued recognition and support for the conservation of species of concern by the public, land management agencies, and regulatory agencies. If so, there should be few effects from the lack of a USFWS species watch list.

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