Billing Code 4310-55-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2010-0084]

[MO 92210-0-0008-B2]

Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Spring Pygmy Sunfish as Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of petition finding and initiation of status review.

SUMMARY: We, the U.S. Fish and Wildlife Service, announce a 90-day finding on a petition to list the spring pygmy sunfish (*Elassoma alabamae*) as endangered under the Endangered Species Act of 1973, as amended (Act). Based on our review, we find that the petition and information currently available in our files presents substantial scientific

or commercial information indicating that listing this species may be warranted. Therefore, with the publication of this notice, we are initiating a review of the status of the species to determine if the petitioned action is warranted. To ensure this status review is comprehensive, we are requesting scientific and commercial data and other information regarding this species. Based on the status review, we will issue a 12-month finding on the petition, which will address whether the petitioned action is warranted, as provided in section 4(b)(3)(B) of the Act.

DATES: To allow us adequate time to conduct this review, we request that we receive information on or before **[**INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**]**. Please note that if you are using the Federal eRulemaking Portal (see **ADDRESSES** section, below), the deadline for submitting an electronic comment is 11:59 p.m. Eastern Time on this date. After **[**INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**]**, you must submit information directly to the Field Office (see **FOR FURTHER INFORMATION CONTACT** section below). Please note that we might not be able to address or incorporate information that we receive after the above requested date.

ADDRESSES: You may submit information by one of the following methods:

- *Federal eRulemaking Portal*: *http://www.regulations.gov*. In the box that reads "Enter Keyword or ID," enter the Docket number for this finding, which is **FWS-R4-ES-2010-0084**. Check the box that reads "Open for Comment/Submission," and then click the Search button. You should then see an icon that reads "Submit

a Comment." Please ensure that you have found the correct document before submitting your comment.

- *U.S. mail or hand-delivery*: Public Comments Processing, Attn: **FWS-R4-ES-2010-0084**; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA 22203.

We will not accept e-mail or faxes. We will post all information we receive on the Internet at *http://www.regulations.gov*. This generally means that we will post any personal information you provide us (see the **Request for Information** section below for more details).

FOR FURTHER INFORMATION CONTACT: Stephen Ricks, Field Supervisor, Mississippi Ecological Services Field Office, 6578 Dogwood View Parkway, Jackson, MS 39213; by telephone (601-321-1122); or by facsimile (601-965-4340). If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Request for Information

When we make a finding that a petition presents substantial information indicating that listing a species may be warranted, we are required to promptly review the status of the species (status review). For the status review to be complete and based on the best

available scientific and commercial information, we request information on the spring pygmy sunfish from governmental agencies, Native American Tribes, the scientific community, industry, and any other interested parties. We seek information on:

(1) The species' biology, range, and population trends, including:

(a) Habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) The factors that are the basis for making a listing/delisting/downlisting determination for a species under section 4(a) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq*.), which are:

(a) The present or threatened destruction, modification, or curtailment of its habitat or range;

(b) Overutilization for commercial, recreational, scientific, or educational purposes;

(c) Disease or predation;

(d) The inadequacy of existing regulatory mechanisms; or

(e) Other natural or manmade factors affecting its continued existence.

If, after the status review, we determine that listing the spring pygmy sunfish is warranted, we will propose critical habitat (see definition in section 3(5)(A) of the Act), under section 4 of the Act, to the maximum extent prudent and determinable at the time

we propose to list the species. Therefore, within the geographical range currently occupied by the spring pygmy sunfish, we request data and information on:

(1) What may constitute "physical or biological features essential to the conservation of the species";

(2) Where these features are currently found; and

(3) Whether any of these features may require special management considerations or protection.

In addition, we request data and information on "specific areas outside the geographical area occupied by the species" that are "essential to the conservation of the species." Please provide specific comments and information as to what, if any, critical habitat you think we should propose for designation if the species is proposed for listing, and why such habitat meets the requirements of section 4 of the Act.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made "solely on the basis of the best scientific and commercial data available."

You may submit your information concerning this status review by one of the methods listed in the **ADDRESSES** section. If you submit information via *http://www.regulations.gov*, your entire submission—including any personal identifying

information—will be posted on the website. If you submit a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this personal identifying information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov*.

Information and supporting documentation that we received and used in preparing this finding is available for you to review at *http://www.regulations.gov*, or you may make an appointment during normal business hours at the U.S. Fish and Wildlife Service, Mississippi Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Background

Section 4(b)(3)(A) of the Act (16 U.S.C. 1533(b)(3)(A)) requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. We are to base this finding on information provided in the petition, supporting information submitted with the petition, and information otherwise available in our files. To the maximum extent practicable, we are to make this finding within 90 days of our receipt of the petition and publish our notice of the finding promptly in the **Federal Register**.

Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is "that amount of

information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted" (50 CFR 424.14(b)). If we find that substantial scientific or commercial information was presented, we are required to promptly conduct a species status review, which we subsequently summarize in our 12-month finding.

The "substantial information" standard for a 90-day finding differs from the Act's "best scientific and commercial data" standard that applies to a status review to determine whether a petitioned action is warranted. A 90-day finding does not constitute a status review under the Act. In a 12-month finding, we will determine whether a petitioned action is warranted after we have completed a thorough status review of the species, which is conducted following a substantial 90-day finding. Because the Act's standards for 90-day and 12-month findings are different, as described above, a substantial 90-day finding does not mean that the 12-month finding will result in a warranted finding

Previous Federal Actions

On November 29, 1977, we proposed to list the spring pygmy sunfish as endangered and to designate critical habitat (42 FR 60765). We withdrew the critical habitat portion of the proposal on March 6, 1979 (44 FR 12382). We then proposed critical habitat again for the species on July 27, 1979 (44 FR 44418). On January 24, 1980, we withdrew the pending proposal to list the spring pygmy sunfish, along with the proposed critical habitat designation (effective November 29, 1979) (45 FR 5782).

The spring pygmy sunfish has been included in the following notices as a candidate species for listing: December 30, 1982 (47 FR 58454); September 18, 1985 (50

FR 37958); January 6, 1989 (54 FR 554); and November 15, 1994 (59 FR 58982).

On February 28, 1996 (61 FR 7457), the Service published a notice of review in the **Federal Register** that removed the spring pygmy sunfish from the proposed candidate list because of recent discoveries (particularly of the Pryor Springs population).

Petition History

On November 24, 2009, we received a petition dated November 24, 2009, from the Center for Biological Diversity (CBD) and Michael Sandel of the University of Alabama, requesting that we list the spring pygmy sunfish (*Elassoma alabamae*) as endangered under the Act. The petition clearly identified itself as such and included the requested identification information for the petitioners as required by 50 CFR 424.14(a). In a December 17, 2009, letter, we informed the petitioners that we had reviewed the information presented in the petition, and outlined the petition process and timelines. In July 2010, we received letters from the North American Native Fishes Association (NANFA) and Dr. Stallsmith (University of Alabama at Huntsville) requesting that we emergency list the species under section 4(b)(7) of the Act. Following review of the petition, the letters, and information in our files, we also determined that issuing an emergency regulation temporarily listing the species was not warranted. We notified NANFA and Dr. Stallsmith of our determination on July 21, 2010.

Species Information

The spring pygmy sunfish (*Elassoma alabamae)* was discovered in 1938 but was not described until 1993 (Mayden 1993, pp. 1–14). This species is the smallest member of the genus *Elassoma.* Males are normally smaller than females, and both sexes have 5 to 8 broad, dark vertical bars separated by light-colored, narrow bars. Males are very dark to black with iridescent blue green color on their sides, cheeks, and gill covers (Boschung and Mayden 2004, pp. 614–615).

The spring pygmy sunfish is a spring-associated fish, endemic to the Tennessee River drainage in the Eastern Highland Rim physiographic province and Dissected Tablelands (Curtis *et al.* 1913, p. 53) of Lauderdale and Limestone Counties in northern Alabama. The single remaining population of the spring pygmy sunfish currently occupies about 5 river miles (mi) (8.05 river kilometers (km)) of shallow, vegetated areas within four spring pools confluent with the upper Beaver Dam Spring Complex. These spring pools include Moss, Beaverdam, Thorsen, and Horton Springs, all in Limestone County, Alabama. The species is thought to be extirpated in Pryor Springs (also in Limestone County).

The spring pygmy sunfish was initially discovered in Cave Springs (Lauderdale County) in 1938, and extirpated about a year later due to inundation from the formation of Pickwick Reservoir. In 1941, the species was discovered in Pryor Springs (Limestone County). A series of geomorphic and contamination events over 30 years is believed to have attributed to the demise of the species in Pryor Springs and throughout the species' range (Boschung and Mayden 2004, pp. 614–615). There are few documented sampling efforts in Pryor Springs between 1966 and 1979. However, collection information from this time period indicates a declining and almost extinct population, nearing extirpation.

By 1984, an effort to re-establish the population of spring pygmy sunfish included transplanting the species from Moss Spring into Pryor Springs (Mettee *et al.* 1986, pp. 14–15). Reintroduction efforts continued in 1985 and 1987 (Mettee *et al.* 1986, pp. 6–7); however, by 2007, the species was believed extirpated from Pryor Springs due to impaired water quality and quantity problems, most likely attributable to agriculture (Sandel 2008, p. 2).

The preferred habitat for the spring pygmy sunfish is clear and colorless to slightly stained spring water, spring runs, and associated spring-fed wetlands (Warren 2004, pp. 184–185). Spring pool habitats are typically static, persisting without disturbance for long periods. The spring pygmy sunfish is highly localized within these spring pools, being found in the water column associated with patches of specific submergent vegetation. Spring pygmy sunfishes are generally found at water depths from 5 to 40 inches (in) (12.7 cm to 101.6 centimeters (cm)) and rarely in the upper 5 in (12.7 cm) of the water column. Spring pygmy sunfish abundance is correlated with specific water quantity and quality parameters (i.e., water flow velocity, turbidity, anoxic (lack of oxygen) substratum, and water temperatures) and certain associated species such as amphipods, isopods, spring salamanders, crayfish, and snails (Sandel, pers. comm., 2007). The spring pygmy sunfish has high fecundity and quickly populates areas of available habitat (Sandel, pers. obs., 2004 through 2009). Reproductively active adults occur from January to October. Spawning occurs in March and April, when water quality parameters are within a suitable range, such as a pH of 6.0 to 7.7 and water temperatures of 57.2 to 68 degrees Fahrenheit (°F) (14 to 20 degrees Celsius (°C)). Spring pygmy

sunfish produce about 65 eggs, and hatching occurs from April to September (Sandel, pers. obs., 2004 through 2009).

The species is most abundant at the spring emergence, and exhibits metapopulation (a group of spatially separated populations of the same species that have some interaction) structure by occupying all suitable spring habitats where there is flowing spring water. This suggests that the population in the Beaverdam Creek system is a single, structured, continuous group of breeding individuals, genetically identifiable with limited gene flow from each springhead subpopulation (Sandel 2008, pp. 15–16).

It is believed that migration between springheads is very important in maintaining genetic diversity of species within these small areas, although gene flow is limited. Even though individual subpopulations may be extirpated at times, due to drought or other ecological issues, the simultaneous loss of many subpopulations may cause extinction of the metapopulation.

We accept the characterization of the spring pygmy sunfish as a valid species based on the taxonomic characters distinguishing the species from other members of the *Elassoma* genus (Mayden 1993, p. 4).

Evaluation of Information for this Finding

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations at 50 CFR 424 set forth the procedures for adding a species to, or removing a species from, the Federal Lists of Endangered and Threatened Wildlife and Plants. A species may be

determined to be an endangered or a threatened species due to one or more of the five factors described in section 4(a)(1) of the Act:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

In making this 90-day finding, we evaluated whether information regarding threats to the spring pygmy sunfish, presented in the petition and available in our files, is substantial, thereby indicating that the petitioned action may be warranted. Our evaluation of this information is presented below.

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

Information Provided in the Petition

The petition states that decreased water quantity has degraded the spring pygmy sunfish's habitat (Warren *et al.* 2000; Warren 2004; Boschung and Mayden 2004) (cited in petition). Specifically, water from the aquifer of the Eastern Highland Rim located

within the Tennessee River Catchment containing the entire Beaverdam Creek watershed is being withdrawn daily by the city of Huntsville and adjacent rural residents at a volume of 40 million gallons per day (MGD) (Compiled from NAWQA 2001, 2009; Sandel, pers. com, 2007).

The petition states that this water withdrawal quantity is at least three times greater than the withdrawal volumes from the eight surrounding watersheds that remove at least 12 MGD. Groundwater extraction by agriculture from the springs (Thorsen Spring, Horton Spring, and Pryor Branch/Spring systems), with five diesel irrigation pumps operating simultaneously, withdraws 8,000 to 16,000 gallons per minute during drought conditions. In 2007, water from Thorsen Spring was extracted to a level that destroyed existing vegetation and decreased the abundance of the spring pygmy sunfish abundance by 99 percent (Sandel, pers. obs., 2004 through 2007). Chronic regional drought between 2000 and 2005 reduced rates of surface water flow and aquifer recharge. Desiccation of aquatic vegetation by water removal (pumping) within Thorsen, Horton, and Pryor Springs negatively impacted the vegetation of the spring pygmy sunfish's habitat (Jandebeur 1979; Mayden 1993; as cited in the petition).

The petition states that declining water quality is a major threat to the spring pygmy sunfish due to the use of fertilizers and other agricultural chemicals within the Beaverdam Creek watershed. According to the petition, the watershed contains about 14,016 acres (5672.28 ha) of row cropland that uses fertilizers and other chemicals, which is eventually transported at a runoff rate exceeding 25 MGD throughout the tributaries of the watershed.

The petition states that removal of aquatic and riparian vegetation due to herbicide application is a major threat to the spring pygmy sunfish. Herbicide application and other methods of aquatic vegetation removal within Thorsen Spring, Horton Spring, and Pryor Branch/Spring systems have impacted the species' habitat (Jandebeur 1979; Mayden 1993) (cited in petition).

Evaluation of Information Provided in the Petition and Available in Service Files

Data from our files support the petition's assertion that diminishing water quantity has the potential to be a significant threat to the spring pygmy sunfish. Increased urbanization within the entire Eastern Highland Rim topographic area (Woodside *et al*. 2001, p. 6) has increased water quantity usage throughout the Tennessee Valley Basin. Demand for water is correlated to projected population levels in Limestone and Lauderdale Counties. By 2015, the population in these counties is projected to increase dramatically (Roop 2010). Growing populations correspondingly increase demand for surface and ground water extraction within the Eastern Highland Rim. Currently about 40 percent of the public water supply for the City of Huntsville is withdrawn from the Tennessee River and 40 percent from groundwater (Hoos *et al.* 2001, p. 1; Kingsbury 2003, p. 2).

The information in our files regarding groundwater extraction for Lauderdale and Limestone Counties is limited to general watershed and county-level data (USGS 2009a; USGS 2009b; Hutson *et al.* 2005, pp. 1–2). The petition only estimates the potential of eight pumps operating simultaneously within the spring pygmy sunfish's sites.

Information in our files, along with field observations (Drennen, pers. obs., 2007 through 2009), supports the petition's claim that water is being withdrawn from spring pygmy sunfish habitat for irrigation. However, the specific water quantity removed from these sites and the impact that this removal has on the spring pygmy sunfish is not substantiated, and we do not have supporting information within our files.

Declining water quality information presented in the petition for the Eastern Highland Rim, in general, is supported by information found in our files. Specific site threats to the spring pygmy sunfish mentioned in the petition, such as excessive sediment, decreasing water clarity, decreasing spawning and feeding sites, reduction of light, and the use of fertilizers and pesticides, were identified by the petition as impacting the broad topographic region that includes the limited sites occupied by the spring pygmy sunfish. However, the significance of this general threat to the spring pygmy sunfish is unknown. Information in our files supports the petition's assertion that decreased water quality may be a threat to the spring pygmy sunfish.

Information in the petition and in our files indicates that, since 1945, various techniques for removing or limiting aquatic vegetation, such as herbicides, cattle grazing, and irrigation, have occurred within the spring systems and waterways throughout the habitat of the spring pygmy sunfish (Jandebeur 1979, pp. 4–8). The information in our files also supports the statement in the petition that manipulation and control of aquatic vegetation in the spring systems may be a threat to the spring pygmy sunfish.

In summary, we find that the information provided in the petition, as well as other information in our files, presents substantial information indicating that the petitioned action may be warranted due to the present or threatened destruction, modification, or

curtailment of the species' habitat or range, specifically because of declining water quantity and quality and loss of aquatic vegetation.

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

Information Provided in the Petition

The petition states that overutilization has not been implicated in the decline of this species because monthly surveys over the last 5 years for scientific evaluation were nonlethal. Previous lethal sampling of the spring pygmy sunfish within the various sites across the species' range for genetic work never constituted more than 10 percent of the total individuals collected per sampling event. The petition states that there is no evidence to suggest over-exploitation as a cause for the decline of the spring pygmy sunfish.

Evaluation of Information Provided in the Petition and Available in Service Files

There is no evidence provided by the petition, or within our files, to support threats under this factor. Therefore, we find that the information provided in the petition, as well as other information in our files, does not indicate or document that overutilization for commercial, recreational, scientific or educational purposes poses a threat to the species. However, we will evaluate all factors, including overutilization for

commercial, recreational, scientific, or educational purposes, when we conduct the status review.

C. Disease or Predation.

Information Provided in the Petition

The petition states that there is no evidence to suggest that disease is a cause for the decline of the spring pygmy sunfish. However, the petition does state that chain pickerel (*Esox nigra*) prey on the spring pygmy sunfish (Jandebeur 1997, cited in petition), and that other types of pygmy sunfish species in different localities have been found in the gut contents of piscivorous (fish-eating) fishes (Walsh and Burr 1984, cited in petition). The petition states that invasive species, such as predators like pirate perch (*Aphredoderus sayanus*) and grass pickerel (*Esox americanus*), and potential competitors such as the flier (*Centrarchus macropterus*) and bantam sunfish (*Lepomis symmetricus*), threaten the spring pygmy sunfish.

Evaluation of Information Provided in the Petition and Available in Service Files

The information in our files supports the assertion in the petition that disease is not a threat to the spring pygmy sunfish. Predation does pose a potential threat to the spring pygmy sunfish.

In summary, we find that neither the information in the petition, nor other information in our files, indicates that disease is a threat to the spring pygmy sunfish. However, we find that the information provided in the petition, as well as other information in our files, suggests that predation by natural or invasive species may pose a threat to the spring pygmy sunfish. We will evaluate all factors, including disease and predation, when we conduct the status review.

D. The Inadequacy of Existing Regulatory Mechanisms.

Information Provided in the Petition

The petition states that the spring pygmy sunfish is not formally recognized or protected at any government level. Current State and Federal laws and regulations involving alteration of wetlands; channelization; water withdrawal; pesticide use and other agriculture best management practices; and buffer zones to protect water quality and quantity within spring systems are available, but these do not prohibit destroying the spring pygmy sunfish or its habitat.

Evaluation of Information Provided in the Petition and Available in Service Files

The spring pygmy sunfish and its habitat are afforded some protection from water quality and habitat degradation under the Clean Water Act of 1977 (33 U.S.C. 1251 *et seq*.) and the Alabama Water Pollution Control Law (Code of Alabama, sections 22–22-1

et seq., and regulations promulgated thereunder by the Alabama Department of Environmental Management) (Maynard and Gale. 1995, pp. 20–28). While these laws have resulted in some improvement in water quality and stream habitat for aquatic life, including the spring pygmy sunfish, such as requiring landowners engaged in agricultural practices to have an erosion prevention component within their farm plan, they alone have not been fully adequate to protect this species due to inconsistent implementation, monitoring, and enforcement. Furthermore, habitat degradation is ongoing despite the protection afforded by these laws.

The State of Alabama maintains water-use classifications through issuance of National Pollutant Discharge Elimination System (NPDES) permits to industries, municipalities, and others that set maximum limits on certain pollutants or pollutant parameters. For water bodies on the Clean Water Act's Section 303(d) List of Impaired Water Bodies, States are required under the Clean Water Act to establish a Total Maximum Daily Load (TMDL) for the pollutants of concern that will bring water quality into the applicable standard. Many of the water bodies that do not meet Clean Water Act standards are within the occupied range of the spring pygmy sunfish (Alabama 2008 Section 303(d) List of Impaired Water Bodies).

The State of Alabama's water quality standards, adopted from the national standards set by the U.S. Environmental Protection Agency (USEPA), appear to be protective of the spring pygmy sunfish as long as discharges are within permitted limits and are enforced according to the provisions of the Clean Water Act. These water quality requirements were established with the intent to protect all aquatic resources within the

State of Alabama and are presumed to be protective of the spring pygmy sunfish. The Service is currently in consultation with the USEPA to evaluate the efficacy of criteria approved in USEPA's water quality standards for endangered and threatened species and their critical habitats as described in the Memorandum of Agreement our agencies signed in 2001 (66 FR 11201; February 22, 2001). Because the spring pygmy sunfish is not currently a federally listed species, it is not specifically considered in the ongoing consultation with USEPA.

Water extraction has also been identified as a potential threat to the species (see Factor A above). There are few, if any, State and Federal regulations pertaining to ground water extraction and protection of aquifer recharge areas.

In summary, the petition's claim that there are no existing regulatory mechanisms that protect the spring pygmy sunfish or its habitat from destruction is not supported by the information in our files. However, the information in our files indicates that degradation of habitat for this species is ongoing despite the protections afforded by these existing laws. Therefore, the information in the petition and in our files presents substantial information indicating that the petitioned action may be warranted due to the inadequacy of existing regulatory mechanisms, particularly those affording protection from habitat destruction or degradation.

E. Other Natural or Manmade Factors Affecting Its Continued Existence.

Information Provided in the Petition

The petition states that the Beaverdam Creek metapopulation is considered a single, semi-continuous group of subpopulations (Sandel, pers. comm., 2007; Sandel 2008, pp. 13–14), and that impediments to migration and gene flow between springheads are detrimental to maintaining genetic diversity in the species. Individuals from each site are genetically identifiable in a structured population, with limited, but regular, gene flow. The genetic viability of subpopulations is interdependent. Subpopulations may be naturally extirpated at times, and the simultaneous loss of many subpopulations may cause the metapopulation to become extinct. The petition states that inbreeding is a potential factor in the decline of the spring pygmy sunfish in Pryor Springs due to the reintroduction of too few individuals (Mettee *et al.* 1986; Sandel 2008) (as cited in petition).

The petition states that if Asian silver and bighead carps (*Hypopthalmichthys* spp.) are introduced or expand their range from their present locality in the lower Tennessee River and Wheeler Reservoir systems, they may disturb the Beaverdam Creek plankton ecosystem by consuming significant proportions of plankton. The petition also states that invasive plant species, such as floating Amazonian parrot feather (*Myriophyllum aquaticum*) and water hyacinth (*Eichhornia* sp.), and the submerged aquatic vegetation *Myriophyllum verticillatum* and *Ceratophyllum echinatum,* threaten the Beaverdam Creek ecosystem by competitively excluding native vegetation and storing important nutrients within their aerial stems and leaves, resulting in little nutrition or cover for the food base of the species (no reference cited in the petition).

Data from our files support the petition's assertion that impediments to migration and gene flow between springheads are detrimental to maintaining genetic diversity in the species, and therefore are may be a significant threat to the spring pygmy sunfish.

Mechanical fragmentation of the species' habitat into smaller, isolated subpopulations has transpired due to localized environmental degradation from agriculture, increased urbanization, and other anthropogenic disturbances of the spring systems throughout the watersheds of the Eastern Highland Rim (Sandel 2008, pp. 2–4, 13). This fragmentation of the spring pygmy sunfish's habitat has the potential to impose negative selective pressures on the species' populations, including genetic isolation; reduction of space for rearing, recruitment, and reproduction; reduction of adaptive capabilities and increased likelihood of local extinctions (Burkhead *et al.* 1997, pp. 397–399). Connectivity of these fragmented habitats as a whole allows improvement in water quality by flushing and diluting possible pollutants and in water quantity by linking the water bodies together. Connectivity also maintains flow between the existing occupied habitat and unoccupied habitat, which, in turn, allows for the potential of colonization of these unoccupied habitat areas when conditions become favorable for the species. In addition, the connectivity also maintains heterozygosity (genetic diversity), or gene flow between the populations of the species, and reduces inbreeding, thereby maintaining the integrity of the population (Hallerman 2003, pp. 363–364).

However, we find that the information provided in the petition and in our files does not support the claim that that Asian silver and bighead carps, or invasive plant species, pose a threat to the spring pygmy sunfish at this time.

In summary, we find the information provided in the petition, as well as other information in our files, concerning habitat fragmentation and its resulting effects on gene flow and potential demographic impacts within the population is substantial, indicating that the petitioned action may be warranted due to other natural or manmade factors affecting the spring pygmy sunfish's continued existence.

Finding

On the basis of our review under section 4(b)(3)(A) of the Act, we have determined that the petition presents substantial scientific or commercial information indicating that listing the spring pygmy sunfish throughout its entire range may be warranted. This finding is based on information provided under Factors A, C, D and E. In considering what factors might constitute threats, we must look beyond the mere exposure of the species to the factor to determine whether the species responds to the factor in a way that causes actual impacts to the species. If there is exposure to a factor, but no response, or only a positive response, that factor is not a threat. If there is exposure and the species responds negatively, the factor may be a threat and we then attempt to determine how significant a threat it is. If the threat is significant, it may drive or contribute to the risk of extinction of the species such that the species may warrant listing as endangered or threatened as those terms are defined by the Act. This does not necessarily require empirical proof of a threat. The combination of exposure and some corroborating evidence of how the species is likely impacted could suffice. The mere identification of factors that could impact a species negatively may not be sufficient to

compel a finding that listing may be warranted. The information should contain evidence sufficient to suggest that these factors may be operative threats that act on the species to the point that the species may meet the definition of endangered or threatened under the Act.

Because we have found that the petition presents substantial information indicating that listing the may be warranted, we are initiating a status review to determine whether listing the spring pygmy sunfish under the Act is warranted.

References Cited

A complete list of references cited is available on the Internet at *http://www.regulations.gov* and upon request from the Mississippi Ecological Services Field Office, 6578 Dogwood View Parkway, Jackson, MS 39213.

Authors

The primary author of this notice is Daniel J. Drennen of the Mississippi Ecological Services Field Office, Jackson, MS (see **FOR FURTHER INFORMATION CONTACT**).

Authority:

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

Date: __March 16, 2011_____

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Rowan W. Gould

Director, U.S. Fish and Wildlife Service

~~**[Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition to List the Spring Pygmy Sunfish as Endangered]**~~

~~[FR Doc. 2011-7691 Filed 03/31/2011 at 8:45 am; Publication Date: 04/01/2011]~~