

## Information Memorandum for the Secretary/Director

**Date:** October 08, 2020

**From:** Gary Frazer, Assistant Director, Ecological Services

**Telephone #:** 202-208-4646

**Subject:** Proposed Critical Habitat for the Pearl Darter

### I. Introduction

We are proposing to designate 517 river miles in two units in 13 counties in Mississippi as critical habitat for the pearl darter (*Percina aurora*), a fish species from the Pascagoula River Drainage and Pearl River System in Mississippi and Louisiana. We listed the species as threatened on September 20, 2017 (82 FR 43885).

### II. Background

#### *Previous Federal Actions*

We proposed to list the pearl darter as threatened on September 21, 2016 and published a final listing rule on September 20, 2017 (82 FR 43885). At that time, we concluded that critical habitat was not determinable.

#### *Species Biology, Photo, and Range Map*



FIGURE 1. Pearl Darter. Credit: M. Wagner, MS Department of Wildlife, Fisheries, and Parks.

The pearl darter (Figure 1) is a small fish (2 to 2.5 inches long) found in pools or deep runs of flowing streams and rivers. It is a benthic (bottom dwelling) species generally found over sand, gravel, or bedrock substrata in slow to moderate currents. This species was historically known from the Pearl River system of Mississippi and Louisiana; however, there have been no records from the Pearl River drainage in over 40 years and this population is now considered extirpated. Pearl darters continue to survive within 487 mi of connected river and stream channels within the Pascagoula River drainage (Figure 2).

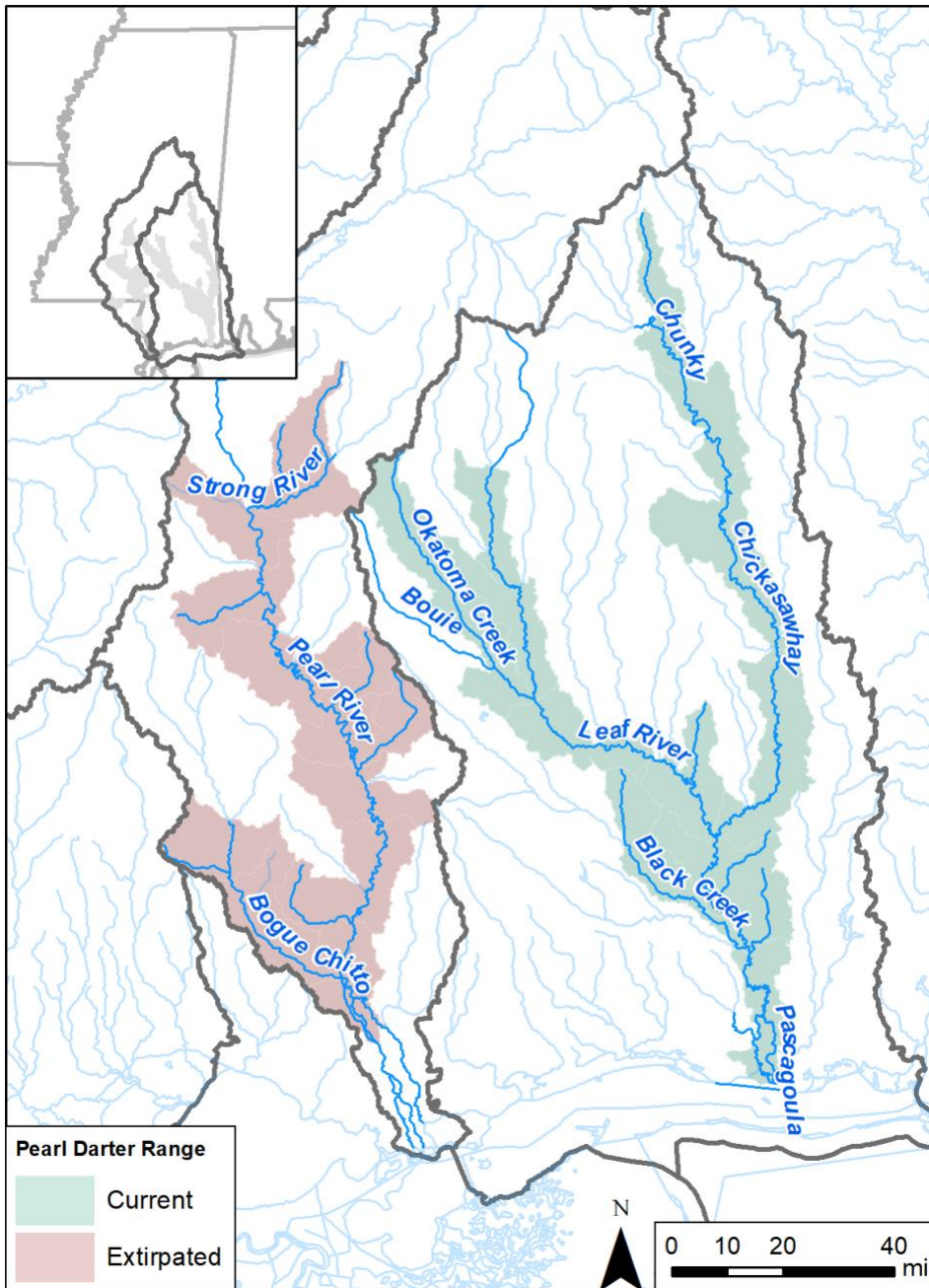


FIGURE 2. Pearl Darter Historical Distribution.

#### *Key Drivers of Species Status*

Threats to the pearl darter surviving in the Pascagoula River drainage include geomorphic instability and associated channel erosion, degradation, and excessive sedimentation, and water quality degradation from point and non-point sources. Because of its limited distribution and small population size, the darter is also vulnerable to random threats such as spills and weather events (e.g., drought, floods). This species has been extirpated from the Pearl River watershed and is confined today to the Pascagoula River basin where the species' small population size,

scattered locations, and low genetic (allelic) diversity increase its vulnerability to extirpation from catastrophic events.

#### *Data Sources*

Information used in the development of the proposed critical habitat designation includes:

1. Published and unpublished reports of survey data describing habitats and ecology of the pearl darter to identify physical and biological features essential to the species survival.
2. Unpublished data of all known site collections of pearl darter from 1950 to present from Mississippi Department of Wildlife, Fisheries, and Parks, Museum of Natural Science (MDWFP).
3. Current collections and occurrences (from 1994 to 2019) were used to determine areas occupied at the time of listing.

#### *Critical Habitat*

We have determined that the following physical or biological features are essential to the conservation of the pearl darter:

1. Unobstructed and stable stream and river channels with:
  - A. Connected sequences of channel runs and bends associated with pools and scour holes; and
  - B. Bottom substrates consisting of fine and coarse sand, gravel, bedrock, silt, clay, organic matter, and woody debris.
2. A natural hydrologic flow regime necessary to maintain instream habitats and connectivity.
3. Water quality conditions meeting current State criteria, including cool to warm water temperatures, high dissolved oxygen, slightly acidic to basic pH, and low levels of pollutants and nutrients, necessary to maintain natural physiological processes for normal behavior, growth, and viability of all life stages of the species.
4. Presence of a prey base of small aquatic macroinvertebrates, including midges, crustaceans, mayflies, caddisflies, and zooplankton.

We are proposing to designate critical habitat in areas within the geographical area occupied by the species at the time of listing. We identified areas with recent occurrence records within the Pascagoula River drainage that we deemed suitable habitat and have the physical or biological features identified for the pearl darter. However, due to its lack of population redundancy, compounded by natural rarity and cryptic habitats, it will be difficult, if not impossible, to conserve the pearl darter within the occupied area alone. Therefore, we are also proposing to designate a specific area outside of the geographical area currently occupied by the species because we have determined that a designation limited to occupied areas would be inadequate to ensure the conservation of the species. For the unoccupied area, we have determined that it is reasonably certain that it will contribute to the conservation of the species. It also contains one or more of the physical or biological features that are essential to the conservation of the species, as demonstrated by a resurgence of other benthic fish species (madtoms and darters) with similar habitat needs that declined significantly in population size throughout the Pearl River drainage concurrent with the extirpation of the pearl darter. Therefore, we are reasonably certain that the designation of unoccupied habitat will contribute to the conservation of the pearl darter, and this proposed designation complies with the 2019 revised critical habitat criteria.

We are proposing to designate approximately 517 river mi in two units in Mississippi within Clarke, Covington, Forrest, George, Greene, Lauderdale, Jackson, Jones, Newton, Perry, Simpson, Stone, and Wayne Counties, Mississippi as critical habitat for the pearl darter. Unit 1 (Pascagoula River Unit) is 487 river mi of occupied critical habitat and Unit 2 (Strong River Unit) is 30 river mi of unoccupied critical habitat (Figure 3). Table 1 shows the occupancy of the units, the land ownership, and approximate areas of the proposed designated areas for the pearl darter.

Within Unit 1 (Pascagoula River Unit), the proposed designation pearl darter overlaps with the Gulf sturgeon (79% listed range and 67% critical habitat) and yellow blotched map turtle (80% listed range). Within Unit 2 (Strong River Unit), the proposed designation overlaps with Gulf sturgeon (100% listed range) and ringed map turtle (59% listed range).

**TABLE 1. Proposed critical habitat units for pearl darter.**

[Unit length estimates include only stream channels within the ordinary high-water line.]

UNIT	Occupancy	RIPARIAN LAND OWNERSHIP				Total mi (km)
		Federal mi (km)	State mi (km)	County mi (km)	Private mi (km)	
1. Pascagoula River Drainage	Occupied	45 (72) *	76 (122) *		373 (600)	487 (783) *
2. Strong River	Unoccupied			0.4 (0.6)	30 (48.4)	30 (49)
<b>Total km (mi)</b>		45 (72) *	76 (122) *	0.4 (0.6)	403 (648.4)	517 (832) *

\* 7 mi (11 km) of Pearl Darter Critical Habitat stream miles shared between state and federal lands.

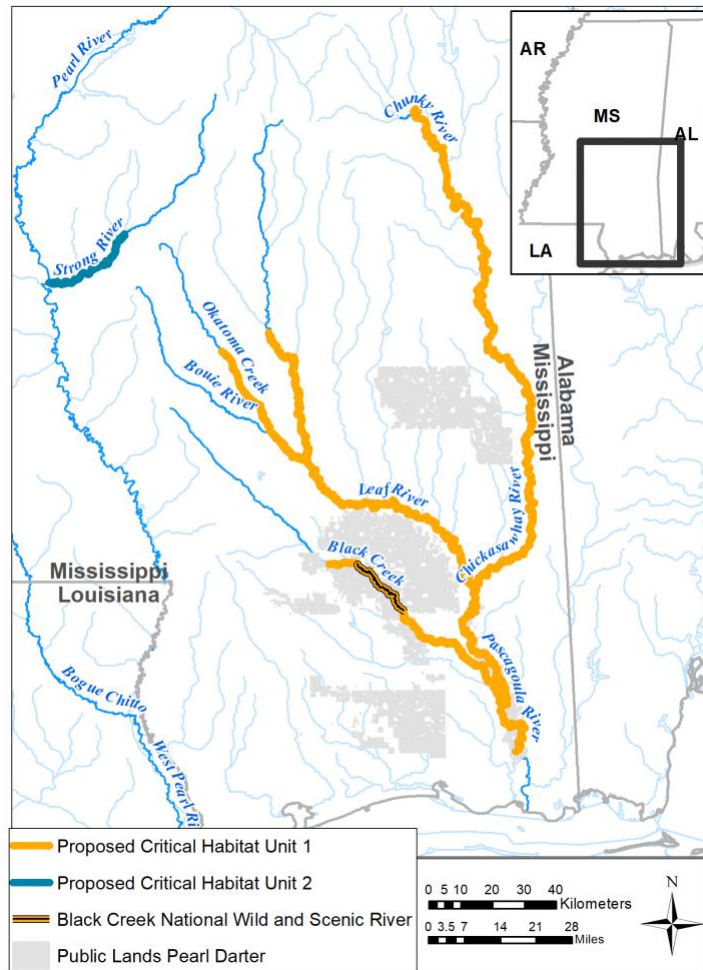


FIGURE 3. Map of Proposed Critical Habitat for Pearl Darter.

### *Conservation Efforts*

The MDWFP has provided pearl darter broodstock to Private John Allen National Fish Hatchery (NFH) for hatchery propagation trials. The NFH has successfully propagated, reared, and maintained viable pearl darter propagules in the hatchery.

The Strong River is the northern most (headwater) historical spawning site for the darter in the Pearl River drainage and maintains connectivity with all historical downstream collection sites. Foraging, spawning, and recruitment habitats in the Strong River are accessible and conducive to stocking and monitoring a rare fish species. Both MDWFP and Service personnel have coordinated and collaborated with private landowners in the Strong River regularly in fish sampling and monitoring. There are coordinated efforts (communication and working relationship) between the Service, MDWFP, and the private landowner, especially since the listing of the species. The landowner has expressed interest in reestablishing the species on her property and her willingness to work with the Service on these efforts. There is no expected change in how this landowner will manage her lands. We are reasonably certain that this unit will contribute to the conservation of the pearl darter based on the documented cooperation of the landowner and our successful propagation efforts with this species at the Private John Allen NFH.

### *Draft Economic Analysis (DEA)*

Draft screening analysis for the pearl darter proposed designation was completed by Industrial Economics, Inc. (IEC) on July 13, 2020. The DEA found that economic cost of implementing the rule will likely be limited to additional administrative effort to consider adverse modification of pearl darter habitat during Section 7 consultations.

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The information below this line is for informational and outreach purposes only and has not been used as the basis for any potential Agency decision.

### **III. Positions of Interested Parties**

**State Agency:** We have been working for more than two decades with biologists from MDWFP to determine the range and status of the pearl darter. The MDWFP conducts routine sampling in both drainages, maintains a collection database for the pearl darter and other species, and has also provided live specimens to the NFH for propagation studies. The MDWFP is aware that we will propose critical habitat for the pearl darter but has not been informed of the specific areas. MDWFP has expressed neither support nor opposition to a proposed designation.

**Federal Agencies:** We notified all Federal agencies that may have actions or authorities within the Pearl and Pascagoula river drainages that some river and stream channel segments were under consideration for designation as critical habitat for the pearl darter. We requested that these agencies characterize and describe probable impacts that might result from the proposed designation. The U.S. Forest Service in Mississippi responded that they do not anticipate conducting activities that are likely to adversely affect the pearl darter or its habitat in the Desoto National Forest, or any change in consultation frequency or outcomes. The U.S. Army Corps of Engineer (Corps) Mobile District response noted that the frequency of consultations for permits may increase slightly in the Pascagoula River drainage, depending on activities that may affect

designated critical habitat. The Corps Vicksburg District responded that while the frequency of consultations for permits may increase in the Pearl River drainage basin with critical habitat designation, potential impacts to species and habitats are typically cost-effectively mitigated through permit best management practice requirements following programmatic or informal consultation. No other Federal agency responses were received.

**Tribal Lands:** There are no Tribal lands within or near the proposed designation.

#### **IV. Potential Issues/Conflicts**

No potential issues have been identified.

#### **V. Communications and Outreach**

Outreach Lead: South Atlantic-Gulf and Mississippi-Basin Regions

Affected States: Mississippi

Media POC: Phil Kloer, 404-679-7299

Congressional: The Mississippi Ecological Services Field Office will provide advanced notifications to appropriate Congressional District Offices; HQ-CLA will distribute press releases to congressional offices in Washington.

State Contacts: The Mississippi Ecological Services Field Office will provide advanced notification to the governor and to the Director of the Mississippi Department of Wildlife, Fisheries, and Parks.