

## Finescale Dace - *Phoxinus neogaeus*

Abundance: Extremely rare

Status: NSS2 (Ba)

NatureServe: G5 S2

Population Status: Imperiled because of greatly restricted distribution. Found in Niobrara River and some locations in the Belle Fourche watershed. Wyoming populations are isolated from the species' core range in North America.

Limiting Factor: Habitat: severe due to limited habitat in Wyoming.

Comment: NSS Ranks are reviewed and revised with each SWAP revision. No changes were made for this species in this revision.

### Introduction

Finescale dace distribution extends throughout Canada and from Minnesota to Maine in the United States. Disjunct populations also exist in areas of South Dakota, Nebraska, and Wyoming. In Wyoming they are found in the Redwater and Niobrara River drainages. Recent surveys found finescale dace throughout the mainstem Niobrara River and in Hemler Reservoir in the Redwater drainage (McGree et al. 2010; Moan et al. 2010). Throughout their distribution, finescale dace freely hybridize with northern redbelly dace. The population in the Niobrara River headwaters of Wyoming is believed to be the only genetically pure population at the southern extent of their distribution (Isaak et al. 2003).

Finescale dace reach maturity by age two and generally spawn in April or May depending on water temperature. Spawning occurs over silt substrate, usually in depressions under logs or other cover. No nesting occurs and no parental care is given. Female fecundity can range from 400 to 3,000 eggs depending on body size (Isaak et al. 2003).

Finescale dace have flexible feeding habits, eating a variety of zooplankton, aquatic insects, and plant material (Litvak and Hansell 1990). In Wyoming, finescale dace were found with brassy minnow, creek chub, fathead minnow, Iowa darter, longnose dace, pearl dace, plains topminnow, central stoneroller, and white sucker (Bear and Barrineau 2007; Moan et al. 2010).

### Habitat

In streams, finescale dace are said to prefer slow or stagnant water with abundant vegetation or other cover. They are intolerant of water temperatures greater than 77 °F and are frequently found in the absence of large predators (Isaak et al. 2003). In Wyoming, they were found at sites with clear, slow moving or stagnant water with dense aquatic vegetation, predominantly silt substrate, and water depths greater than 1.0 ft. (Moan et al. 2010).

### Problems

- h Restricted population, making them susceptible to extirpation from disease and habitat alterations.
- h Introduced nonnative predators.
- h Hemler reservoir population was found to contain the parasite *Clinostomum complanatum* commonly referred to as "yellow grub disease." This parasite can rob the fish of nutrients and increase stress levels resulting in decreased fitness (Mitchum 1995).
- h Dewatering of reservoirs and loss of beaver ponds have greatly reduced suitable finescale dace habitat in the Black Hills National Forest.

### Conservation Actions

- h Investigate the re-establishment of finescale dace into waters they were historically found (e.g. Montana Lake).
- h Investigate finescale dace behavior and habitat utilization within Wyoming.
- h Continue to exclude stocking of non-native fish in the mainstem Niobrara River.
- h Encourage beaver activity to rebuild ponds that provided suitable finescale dace habitat in the Black Hills National Forest.

#### Monitoring/Research

Evaluate the need and design for a monitoring plan. Existing data suggest annual or biannual, single event presence/absence sampling of finescale dace populations at the Nebraska border to facilitate the assessment of population trends.

Coordinate with Nebraska Game and Parks Commission and National Parks Service to monitor and assess impacts from northern pike and other invasive fish.

#### Recent Developments

Two prairie stream surveys (2004 and 2008) were conducted on the Niobrara River to develop a baseline understanding of its fish assemblage (Bear and Barrineau 2007, Moan et al. 2010). Finescale dace were found at similar sampling locations during each survey and were found at new locations throughout the mainstem Niobrara River.

Surveys conducted in the Niobrara River drainage during 2015 detected finescale dace at multiple locations including McMaster Reservoir and marshy areas with little flow near the state line. They currently coexist with non-native northern pike near the state line; however, it is unknown how long the pike have been present there or what long-term effect they will have on SGCN fishes in the Lower Niobrara River.

Surveys conducted in the Belle Fourche drainage in 2015 failed to detect finescale dace in several areas they had previously been present (Bill Bradshaw, WGFD, unpublished data). They were still present in Hemler Reservoir and a beaver pond upstream, but were not found in Montana Lake - a historical stronghold for the species that had been completely dewatered in recent years. Additionally, several beaver ponds in the Black Hills National Forest near Hemler Reservoir that had previously contained finescale dace were no longer present during the 2015 survey.

#### References

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SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: February 2016. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.