

Brassy Minnow - *Hybognathus hankinsoni*

Abundance: Rare

Status: NSS4 (Bc)

NatureServe: G5 S5

Population Status: Vulnerable due to declining populations and decreasing distribution. Appear to be declining throughout range in Wyoming and surrounding states.

Limiting Factor: Habitat: vulnerable with increases in habitat loss likely.

Comment: Recent surveys suggest that the distribution of this species is more restricted than previously thought.

Introduction

The range of the brassy minnow includes the Missouri and upper Mississippi river drainages, extending from eastern Wyoming and Montana across the northern states to Ontario and New York and south to Kansas and Missouri (Baxter and Stone 1995). In Wyoming, this species is most common in the southeast (Moan et al. 2010; Niobrara, North Platte, and South Platte drainages), where water is less turbid (Baxter and Stone 1995). However, brassy minnow have been found in the Cheyenne (Barrineau et al. 2007; McGree et al. 2010), Little Missouri (Patton 1997), and Powder (Fleischer 1978; Davis 2008) river drainages and may be present in the Belle Fourche River drainage (Simon 1951; Mueller and Rockett 1966). Brassy minnow look similar to other *Hybognathus* spp. in Wyoming, and may be distinguished by dissection or, in the field, by eye position and diameter (Scheurer et al. 2003). To ensure proper identification of field-collected *Hybognathus* specimens, subsets are positively identified by Colorado State University's Larval Fish Laboratory. Because brassy minnow prefer small, clear streams with low velocity, larger eyes and a more upturned ventral profile could be advantageous (Scheurer et al. 2003). The spawning of brassy minnow involves male courtship behaviors and takes place in and over vegetation (Baxter and Stone 1995; Pflieger 1997). Females expel somewhat adhesive eggs (Baxter and Stone 1995) and may spawn during a single period of the summer (Scheurer et al. 2003). The diet of this species is almost strictly herbivorous; algae and organic material are the primary food items (Baxter and Simon 1995; Pflieger 1997). Brassy minnow are known to move large distances for survival and reproduction (Scheurer et al. 2003), so retaining stream flow and connectivity is critical to their persistence. Additional investigation into the life-history and habitat requirements of brassy minnow is needed.

Habitat

Brassy minnow prefer clear water and weedy ponds and streams (Baxter and Stone 1995; Pflieger 1997). They are typically found in slow runs or pools with mud bottoms (Baxter and Stone 1995) and often are associated with the fathead minnow (*Pimephales promelas*) and other shiner species (Pflieger 1997).

Problems

- h Natural and human-caused habitat degradation occurring in drainages within the range of this species may have detrimental effects on populations.
- h Brassy minnow populations in southeast Wyoming may be in decline, as changes in relative abundance were seen between past surveys (Bear and Barrineau 2007; Moan et al. 2010).

Conservation Actions

- h Continue efforts to educate landowners and the public about the importance of native fish and their habitats, including the development of a prairie stream conservation brochure.

Monitoring/Research

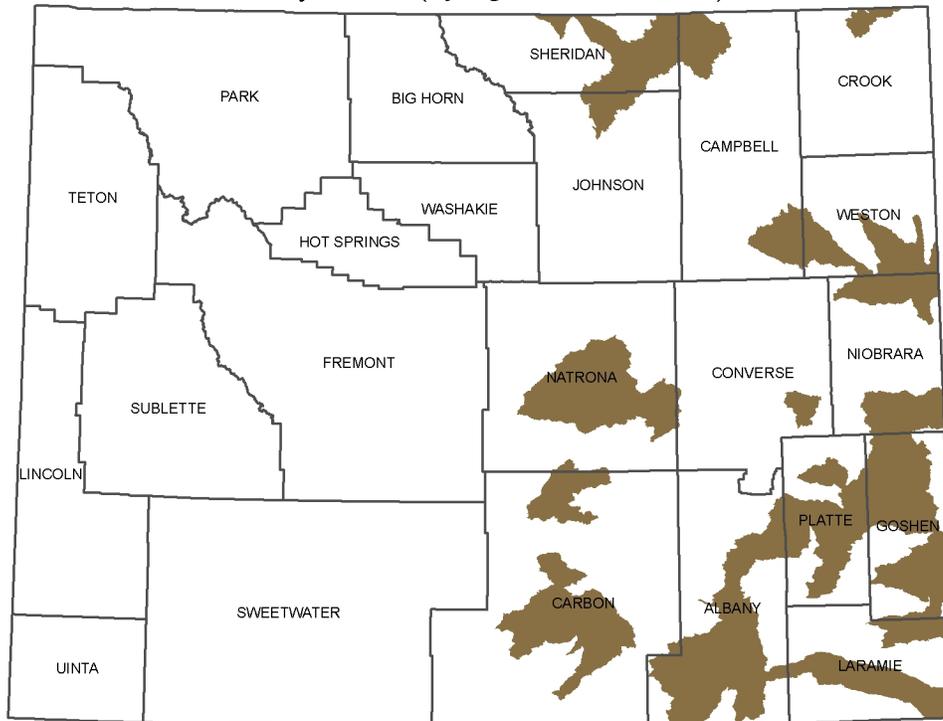
Revisit selected sites in the range of the brassy minnow sampled by Patton (1997), Barrineau et al. (2007), Bear and Barrineau (2007), McGree et al. (2010), and Moan et al. (2010) to continue monitoring species presence/absence and distribution.

Recent Developments

Prairie stream surveys were completed in 2004-2005 (Barrineau et al. 2007; Bear and Barrineau 2007) and 2008-2009 (McGree et al. 2010; Moan et al. 2010) to assess the distribution of this species in eastern Wyoming and to identify conservation actions.

References

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SOURCE: Digital maps of ranges for Wyoming Species of Greatest Conservation Need: April 2010. Wyoming Game and Fish Department. Note that brown indicates the current known range of the species.