

# Brassy Minnow

ASSESSING HABITAT QUALITY FOR PRIORITY WILDLIFE SPECIES IN COLORADO WETLANDS



## Species Distribution

### Range

Brassy minnows range from Canada south to Colorado and Utah and from Montana through northeast North America. In Colorado, they are found in the Lower South Platte River Basin and also in the backwaters of the Colorado River.

ILLUSTRATION BY ELLEN EDMONDSON AND HUGH CRISP



Brassy minnows (*Hybognathus hankinsoni*, Family Cyprinidae) are small native fish of the Colorado plains. They inhabit pools and channels within small streams.

## Species Description

### Identification

Adult brassy minnows are 2 ½–3 inches in length and are variously described in color, perhaps due to geographic differences or changes that occur through preservation of specimens. The majority of descriptions include a brassy color on the sides. The centers of their large eyes are even with the tips of their snouts.

### Preferred Habitats

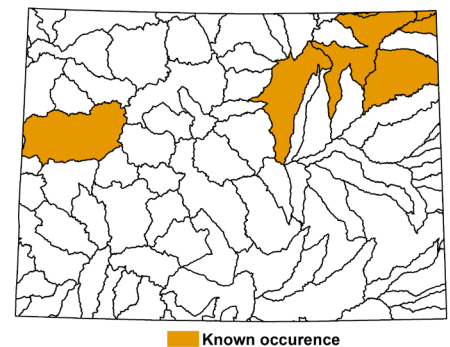
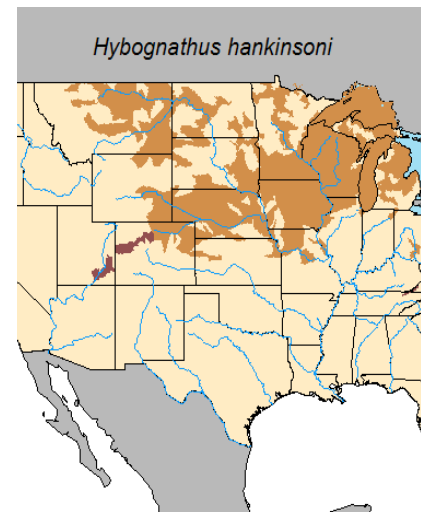
Brassy minnows occupy stream channels (particularly pools), back waters, and beaver ponds.

### Diet

The diet of brassy minnows consists primarily of plankton.

### Conservation Status

Brassy minnows occur in low numbers and are listed as a Tier 1 Species of Greatest Conservation Need (CPW 2015).



North America map used from US. Geologic Survey (<http://nas.er.usgs.gov>). Colorado map by HUC 8 watershed based on Woodling (1985), NDIS (2014), and Paul Foutz (pers. comm., CPW).

# Preferred Habitat Conditions

Dominant vegetation	abundant aquatic vegetation, especially submergent vegetation (plants growing fully underwater)
Landscape context	connectivity with other waters through the driest months
Morphology of stream	permanent (deep) pools and backwaters
Predatory fish	absence of large predatory fish
Substrate	organic sediment on top of gravel
Water depth (predominant)	deep enough to persist through dry periods
Woody debris	abundant

## Management Recommendations

This fact sheet contains easy-to-use guidelines for understanding habitat needs of Colorado Parks and Wildlife priority wetland-dependent wildlife. A number of practical steps can be taken to improve habitat for brassy minnows.

### Hydrology

- Manage conditions to create or maintain permanent pools.
- Increase spring flows.

### Vegetation

- Manage riparian vegetation to create root mass that prevents streambank erosion.
- Manage for conditions that favor submergent vegetation.
- Manage for conditions in riparian area that favor recruitment of native woody vegetation.

### Contamination

- Maintain native fish communities.
- Prevent invasion of exotic predators and competitors.
- Monitor streams for toxins and artificial hormones.

### Land Use / Other

- Encourage beaver where appropriate to create suitable pools.

### Conservation

- Identify suitable habitat for potential translocations.
- Relocate in suitable habitat.



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### Acknowledgements

Boyd Wright (Colorado Parks and Wildlife) reviewed an earlier version and provided input on preferred habitat conditions.

### Suggested Reading and Citations

CPW (Colorado Parks and Wildlife). 2015. State Wildlife Action Plan: A Strategy for Conserving Wildlife in Colorado. Denver, Colorado.

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Scheurer, J. A., K. D. Fausch, and Kevin Bestgen. 2003. Multiscale processes regulate brassy minnow persistence in a Great Plains river. *Transactions of the American Fisheries Society* 132: 840–855.

Schlosser, I. J. 1988. Predation rates and the behavioral response of adult brassy minnows (*Hybognathus hankinsoni*) to creek chub and smallmouth bass Predators. *Copeia* 1988: 691-698.

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# Habitat Scorecard for Brassy Minnows (v. Jan 2016)

*Assessment of habitat before and after restoration or management actions*

Project Name: \_\_\_\_\_ Date(s) of Assessment: \_\_\_\_\_

**Instructions:** Enter one value that best describes summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. If condition is outside range or is not described, enter a zero.

Key habitat variable and conditions		Value	Before	After
<b>Stream morphology/landscape</b>				
Permanent pools connected with other waters during driest time of summer		21.4		
Permanent pools with intermittent connection to other waters during driest time of summer		14.2		
Shallow or temporary pools with connection to other waters during driest time of summer		7.1		
<b>Dominant vegetation</b>				
Abundant aquatic vegetation, including submergent vegetation		20.2		
<b>Predatory fish</b>				
General absence of predatory fish		20.2		
<b>Predominant water depth during driest time of summer</b> Answer for <b>ONLY ONE</b> appropriate stream segment, below, using best option				
<b>Upstream reach of streams inhabited by brassy minnow</b>				
>15 inches		19.1		
>5 – 15 inches		12.8		
3 – 5 inches		6.4		
<b>Size of unvegetated patch on otherwise vegetated bar or island</b>				
>25 inches		19.1		
>15 – 25 inches		12.8		
5 – 15 inches		6.4		
<b>Downstream reach of streams inhabited by brassy minnow</b>				
>40 inches		19.1		
>15 – 40 inches		12.8		
10 – 15 inches		6.4		
<b>Woody debris</b>				
Ample woody debris in water to provide cover		19.1		
<b>Total (of 100 possible): add all numbers in before or after columns</b>				