

# FISH ONLY

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## Notations Used

E	Endangered
T	Threatened
SC	Special Concern
N	None (location records maintained by DNR, in most cases)
N (X)	None, and probably extirpated from Minnesota (location records maintained by DNR, in most cases)
--	None (location records <i>not</i> yet maintained by DNR)
*	Change in scientific name accompanies change in status

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## CHANGE IN STATUS; STATUS SHEET PROVIDED

<u>Common Name</u>	<u>Scientific Name</u>	<u>Current Status</u>	<u>Proposed Status</u>
Skipjack Herring	<i>Alosa chrysochloris</i>	SC	E
* Crystal Darter	<i>Ammocrypta asprella</i>	SC	E
American Eel	<i>Anguilla rostrata</i>	--	SC
Redside Dace	<i>Clinostomus elongatus</i>	N	SC
Nipigon Cisco	<i>Coregonus nipigon</i>	--	SC
Lake Chub	<i>Couesius plumbeus</i>	--	SC
* Gravel Chub	<i>Erimystax x-punctata</i>	SC	T
Bluntnose Darter	<i>Etheostoma chlorosoma</i>	N	SC
Plains Topminnow	<i>Fundulus sciadicus</i>	SC	T
Mississippi Silvery Minnow	<i>Hybognathus nuchalis</i>	--	SC
Black Buffalo	<i>Ictiobus niger</i>	SC	T
Warmouth	<i>Lepomis gulosus</i>	--	SC
Longear Sunfish	<i>Lepomis peltastes</i>	--	SC
Redfin Shiner	<i>Lythrurus umbratilis</i>	--	SC
Black Redhorse	<i>Moxostoma duquesnei</i>	N	SC
* Pallid Shiner	<i>Notropis amnis</i>	SC	E
Pugnose Shiner	<i>Notropis anogenus</i>	SC	T
Slender Madtom	<i>Noturus exilis</i>	SC	E
Suckermouth Minnow	<i>Phenacobius mirabilis</i>	--	SC
Flathead Chub	<i>Platygobio gracilis</i>	--	SC
Pygmy Whitefish	<i>Prosopium coulterii</i>	--	SC

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EXTRACTED FROM

Proposed Amendment of Minnesota Rules, Chapter 6134: Endangered and Threatened Species  
Statement of Need and Reasonableness: August 10, 2012

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Alosa chrysochloris*

COMMON NAME: Skipjack Herring

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Endangered

**BASIS FOR PROPOSED MINNESOTA STATUS:** Skipjack Herring inhabit large rivers in deep, clear, fast-flowing areas over sand or gravel substrate. Skipjack Herring were abundant in the early part of the twentieth century in the Mississippi River as far north as Minneapolis, and both adults and juveniles were once common in Lake Pepin, indicating successful reproduction in Minnesota waters. They reached Big Stone Lake in the Minnesota River and Taylors Falls in the St. Croix River. However, dam construction along the Mississippi River, beginning with the Keokuk dam in southeastern Iowa completed in 1913, blocked the Skipjack Herring's pre-spawning migration route to the upper sectors of the river. Consequently, populations declined dramatically, and this species was not reported in Minnesota for decades and was considered extirpated. However, during prolonged high water years in 1986 and 1993, Skipjack Herring were collected in Lake Pepin for the first time since 1928. Because of its rediscovery in the state and the documented evidence of successful spawning both years, the Skipjack Herring was listed as a Special Concern species in Minnesota in 1996.

Since this time, Skipjack Herring rarely have been documented in the state. The Minnesota DNR's County Biological Survey conducted extensive surveys for rare fish species on the Mississippi River from 2006-2008, and while the Skipjack Herring was a targeted species, none were found. Single specimens were incidentally sampled by commercial seines in 2001 and 2008 on Lake Pepin and during netting surveys on the Mississippi River north of Winona in 2002 and 2011. High water levels in two of those years may have contributed to the ability of the species to negotiate the dams on the Mississippi River and reach Lake Pepin. However, young-of-the-year have not been collected during any of these subsequent years, suggesting that reproduction is not occurring. The main threats to Skipjack Herring populations in Minnesota are physical barriers that impede upstream migration on the Upper Mississippi River. It is known that lock and dam structures hinder migration of Skipjack Herring during the early spring. Therefore, management actions such as the construction of fish passage facilities will be necessary on Mississippi River dams between Minneapolis and Keokuk, Iowa, and on dams on the Minnesota River to its source at Big Stone Lake in order for the recovery of this species in Minnesota waters. While further research into the species' life history and ecological requirements is needed, it is needed and reasonable to reclassify the Skipjack Herring as Endangered in Minnesota.

### SELECTED REFERENCES:

- Becker, G. C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Eddy, S., and J. C. Underhill. 1974. Northern fishes, with special reference to the Upper Mississippi Valley. Third edition. University of Minnesota Press, Minneapolis, Minnesota. 414 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Hatch, J. T., K. P. Schmidt, D. P. Siems, J. C. Underhill, R. A. Bellig, and R. A. Baker. 2003. A new distributional checklist of Minnesota fishes, with comments on historical occurrence. *Journal of the Minnesota Academy of Science* 67:1-17.
- Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. < <http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.

## SPECIES STATUS SHEET

OLD SCIENTIFIC NAME: *Ammocrypta asprella*

NEW SCIENTIFIC NAME: *Crystallaria asprella*

COMMON NAME: Crystal Darter

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Endangered

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Crystal Darter is a rare, slender fish that occurs in large clear-water streams with clean sand and gravel bottoms, and moderate to swift currents. This species reaches the northern limit of its range in the Mississippi River drainage in southeastern Minnesota and has become extirpated in numerous states within its formerly large historic range. The Crystal Darter was listed as a Special Concern species in 1984 because it was considered the rarest and least known of Minnesota's darters, and more information on its distribution and abundance in the state was needed to better assess its status.

A number of targeted collection efforts have been conducted since its listing in 1984 that confirm this species as rare in Minnesota. Today, Crystal Darters are only known to occur in small numbers at six sites in the Zumbro River, one site in the Root River, three sites in the lower St. Croix River, and 18 sites in the Mississippi River from just north of Redwing to the state's southern border. Stream surveys in the 1990s and early 2000s occasionally sampled one or two specimens per site, but few new location records were obtained as a result of these efforts. Between 2006 and 2008, the Minnesota DNR extensively surveyed 192 river miles of the Mississippi River from the tailwaters of the Coon Rapids Dam (Pool A) to the Minnesota-Iowa border (Pool 9) and only documented two individuals in the navigation channel at Pool 5. Minnesota DNR biologists have observed and photographed Crystal Darters a number of times at night using scuba gear in the St. Croix River downstream of Taylors Falls, which appears to be the last stronghold for this species in the state.

The Crystal Darter is particularly sensitive to siltation, requiring clear, fast-flowing rivers. Population declines have occurred across much of the species range from activities such as channelization, dredging, and impoundments that have altered stream velocities and resulted in sediment loading. Dams have also impacted the species by reducing the amount of suitable habitat and isolating populations, thereby making them vulnerable to extirpation from single destructive events. Crystal Darters can be difficult to detect using conventional fish survey methods because they are often found in deep water during the day (2-5 meters) and will burrow into the substrate to await passing prey. Therefore, while targeted surveys using a bottom trawl have been employed in sampling Crystal Darters, techniques that allow for effective surveying of deep, fast flowing stream segments need to be developed. In addition, long-term population monitoring and identification of habitat guilds is needed to assess trends and guide management decisions for this rare species. Given its limited abundance, fragmented distribution, habitat sensitivity, and vulnerability to extirpation, Endangered status is needed and reasonable at this time.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Hatch, J.T. 1997. Resource utilization and life history of the Crystal Darter, *Crystallaria asprella* (Jordan), in the lower Mississippi River, Minnesota. Final report submitted to the Nongame Wildlife Program, Minnesota Department of Natural Resources. 27 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Schmidt, K.P. 1991. Stream survey results for the Slender Madtom (*Noturus exilis*), Crystal Darter (*Ammocrypta asprella*) and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources. 12 pp.+ appendices.
- Schmidt, K.P. 1995. The distribution and sampling gear vulnerability of the Crystal Darter (*Crystallaria asprella*) in Minnesota. Final report submitted to the Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources. 21 pp.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.

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EXTRACTED FROM

Proposed Amendment of Minnesota Rules, Chapter 6134: Endangered and Threatened Species  
Statement of Need and Reasonableness: August 10, 2012

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Anguilla rostrata*

COMMON NAME: American Eel

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** American Eels are a catadromous species of fish, where females spend most of their life cycle in freshwater, but migrate to the mid-Atlantic Ocean to spawn. They are typically found in large rivers and lower reaches of large tributaries in muddy or rocky bottoms, though young adults called elvers must migrate through a variety of stream sizes, substrates, and current flows to reach upstream freshwater habitats. Male eels typically remain in coastal waters near the mouth of the Mississippi. In Minnesota, American Eels are mainly found in three river systems: the Mississippi River upstream to St. Cloud, the Minnesota River to Granite Falls, and the St. Croix River to Taylors Falls. They are generally sampled in large boulders or log jams that provide crevice habitats, and are often found in tailwater reaches of dams.

American Eels have never been abundant in the state and are difficult to sample using standardized sampling gear. However, anecdotal reports suggest this species has become far less common over the past several decades. Despite extensive survey efforts by the Minnesota DNR County Biological Survey, very few individuals have been sampled in recent years, and they are not caught as frequently as they once were. The main threats to American Eel populations in Minnesota are physical barriers that impede upstream migration, which result in fragmentation and loss of available habitat. Individuals must traverse a distance of 2,900 miles after hatching and navigate upstream through a series of 18 locks and dams on the Upper Mississippi River to reach Minnesota waters. In other parts of their range, American Eels may also be impacted by commercial harvest, parasites, pollution, and changes in oceanic conditions. Because of habitat modification, unique life history characteristics, and apparent population declines, it is needed and reasonable to designate the American Eel as a species of Special Concern in Minnesota.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Ickes, B.S., M.C. Bowler, A.D. Bartels, D.J. Kirby, S. DeLain, J.H. Chick, V.A. Barko, K.S. Irons, and M.A. Pegg. 2005. Multiyear synthesis of the fish component from 1993 to 2002 for the Long Term Resource Monitoring Program. U.S. Geological Survey, Upper Midwest Environmental Sciences Center, La Crosse, WI. LTRMP 2005-T005. 60 pp.
- MacGregor, R., J.M. Casselman, W.A. Allen, T. Haxton, J.M. Dettmers, A. Mathers, S. LaPan, T.C. Pratt, P. Thompson, M. Stanfield, L. Marcogliese, and J.-D. Dutil. 2009. Natural Heritage, Anthropogenic Impacts, and Biopolitical Issues Related to the Status and Sustainable Management of American Eel: A Retrospective Analysis and Management Perspective at the Population Level. *American Fisheries Society Symposium* 69:713–740.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 26 May 2009.
- Phillips, G.L., and P.A. Cochran. American Eel, *Anguilla rostrata* (Lesueur). *In: Fishes of Minnesota*. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Clinostomus elongatus*

COMMON NAME: Redside Dace

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

BASIS FOR PROPOSED MINNESOTA STATUS: Redside Dace have a widespread, but disjunct distribution in Ontario, Canada, eastern United States, and parts of the Midwest including the Southeast Driftless Area of Minnesota. These fish are most abundant in clear, spring-fed, coldwater streams that are characterized by limestone slabs or gravel substrate. They typically are found in pools with slow-to-moderate current and overhanging vegetation, and they spawn in riffles or shallow, flowing pools. In Minnesota, Redside Dace are restricted to the lower Mississippi drainage in perennial headwater reaches of the Cannon, Zumbro, and Root rivers, where they are found consistently during surveys but in low numbers. These fish are also found in the Cedar River, where they are considered extremely rare.

Redside Dace are reportedly decreasing across much of their range, and the unique life history and habitat requirements of Redside Dace make them inherently sensitive to habitat modification and degradation. While they can tolerate some turbidity, their preferred stream habitat is under increasing pressure from human activities such as farming and residential development. Redside Dace are aerial insect feeders, and they rely on overhanging riparian vegetation as a main source of their food. Riparian buffer zones are needed to protect bank vegetation, and to reduce siltation from stream bank erosion and runoff. In addition, non-native brown trout may potentially threaten the persistence of Redside Dace in some headwater reaches of streams by preying upon and competing with these minnows for food. Further research is needed on the life history, habitat preferences, and abundance of this species in Minnesota. Until this is accomplished, Special Concern status is needed and reasonable.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Berendzen, P.B., J.F. Dugan, and J.J. Feltz. 2005. Establishing conservation units and population genetic parameters of fishes of greatest conservation need distributed in southeast Minnesota. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 44pp.
- Hatch, J.T., and K.P. Schmidt. Redside Dace, *Clinostomus elongatus* (Kirtland). In: Fishes of Minnesota. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- Lyons, J., P.A. Cochran and D. Fago. 2000. *Wisconsin Fishes 2000: Status and Distribution*. University of Wisconsin Sea Grant Institution, Madison, WI. 87 pp.
- Minnesota Department of Natural Resources. 2006. Tomorrow's habitat for the wild and rare: An action plan for Minnesota wildlife, comprehensive wildlife conservation strategy. Division of Ecological Services, Minnesota Department of Natural Resources. 297 pp. + appendices.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 27 May 2009.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Coregonus nipigon*

COMMON NAME: Nipigon Cisco

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** In 2003, the taxonomy within the genus *Coregonus* was revised to recognize *Coregonus nipigon* as a distinct species. The Nipigon Cisco is a coldwater fish that is apparently restricted worldwide to large, deep oligotrophic lakes in far northeastern Minnesota, southern Ontario, and southern Manitoba. In Minnesota, this species is only known from 3 lakes in Cook County and 4 lakes in St. Louis County. The Nipigon Cisco can be distinguished morphologically from other *Coregonus* species such as the Shortjaw Cisco by the presence of black pigmented fins and a high gill raker count. The amount of suitable habitat is limited in the state, as surveys have reported Nipigon Cisco at water depths as shallow as 40 feet with most records from 60-90ft depths. Currently, very little is known about the life history or status of this deep lake species. Potential threats to the Nipigon Cisco include competition with smelt and the recent introduction of non-native plankton. Given the globally-restricted range of this species and its specialized habitat needs, further research into its ecology, distribution, and abundance in Minnesota is warranted. Therefore, Special Concern status for the Nipigon Cisco is needed and reasonable.

### SELECTED REFERENCES:

- Etnier, D. A., and C. E. Skelton. 2003. Analysis of three cisco forms (*Coregonus*, Salmonidae) from Lake Saganaga and adjacent lakes near the Minnesota/Ontario border. *Copeia* 2003:739-749.
- Minnesota Department of Natural Resources. 2006. Tomorrow's habitat for the wild and rare: An action plan for Minnesota wildlife, comprehensive wildlife conservation strategy. Division of Ecological Services, Minnesota Department of Natural Resources. 297 pp. + appendices.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 29 May 2009.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Couesius plumbeus*

COMMON NAME: Lake Chub

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Lake Chub is a glacial relict that has the northern-most distribution of any North American minnow. In Minnesota, this species occurred historically in Lake Superior and the Lake Superior watershed as far south as Duluth. Although the Lake Superior population is secure, inland populations have drastically declined and are now restricted to Cook County within the Brule and Pigeon River systems. Lake Chubs are typically found in the shallow water of lakes in the south and rivers in the northern part of their range that have gravel or rocky bottoms. However, while targeted surveys for this species have not been completed, the known extant inland populations of Lake Chubs in Minnesota occur in stream rather than in lake habitat. These inland populations are morphologically distinct and physically isolated from the Lake Superior populations, and therefore research is needed to assess whether inland forms are in fact genetically different. Given the range reduction of inland populations in Minnesota and their vulnerability to local extirpation, it is needed and reasonable to designate the Lake Chub as a species of Special Concern. This status will highlight the need for targeted survey work to determine the current distribution and abundance of this species in the state.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Hatch, J.T., and K.P. Schmidt. Lake Chub, *Couesius plumbeus* (Greene). *In: Fishes of Minnesota*. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- Hatch, J.T., K.P. Schmidt, D.P. Siems, J.C. Underhill, R.A. Bellig, and R.A. Baker. 2003. A new distributional checklist of Minnesota fishes, with comments on historical occurrence. *Journal of the Minnesota Academy of Science* 67:1-17.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 29 May 2009.
- Underhill, J.C. 1989. The distribution of Minnesota fishes and late Pleistocene glaciation. *Journal of the Minnesota Academy of Science* 55:32-37.

## SPECIES STATUS SHEET

OLD SCIENTIFIC NAME: *Erimystax x-punctata*

NEW SCIENTIFIC NAME: *Erimystax x-punctatus*

COMMON NAME: Gravel Chub

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Threatened

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Gravel Chub is a slender minnow that is sporadically distributed in the central and eastern United States. It inhabits riffle and run areas of large creeks and small rivers in clear to slightly turbid waters characterized by fine or pea-sized limestone gravel substrate. The Gravel Chub is declining rangewide and has been extirpated from some portions of the northern part of its range. It is presumed to reach its current northern range limit in Minnesota, where it is restricted to two rivers in the Mississippi River drainage in the southeastern part of the state: the Upper Iowa River and the Root River. Because of its limited distribution and the fragile nature of its preferred habitat, the Gravel Chub was listed as a Special Concern species in Minnesota in 1984.

Despite improved sampling techniques and increased effort since listing in 1984, the Gravel Chub remains a rare species in the state. Targeted surveys by the Minnesota DNR between 1992-2000 and by the Minnesota Pollution Control Agency in 2004 recorded spotty occurrences of this species in the Root River in Fillmore and Olmsted counties, and in a few mile reach in the Upper Iowa River in Fillmore County downstream of the Lidtke Mill Dam. Gravel Chubs are absent upstream of this dam in Mower County, although apparently suitable habitat exists on this stretch of the Upper Iowa River.

In addition to its highly restricted distribution and low abundance, this species is threatened by the degradation of its specialized stream habitat. Because Gravel Chubs require permanent flow and silt-free riffles, sediment loading in streams of the lower Mississippi River drainage in Minnesota and the continued interference with flow regimes puts this species at great risk. Dams, channelization, and dredging increase siltation, physically alter habitat conditions, and isolate populations by blocking the movement of fish. These fragmented populations are susceptible to the loss of genetic diversity and to local extirpation from natural or catastrophic events such as a toxic chemical spill. Given its limited range, specific habitat requirements, and sensitivity to habitat modification, it is needed and reasonable to list the Gravel Chub as a Threatened species in Minnesota.

### SELECTED REFERENCES:

- Eddy, S., and J.C. Underhill. 1974. Northern fishes, with special reference to the Upper Mississippi Valley. Third edition. University of Minnesota Press, Minneapolis, Minnesota. 414 pp.
- Harris, J.L. 1986. Systematics, distribution, and biology of fishes currently allocated to *Erimystax* (Jordan), a subgenus of *Hypbopsis* (Cyprinidae). Ph.D. Dissertation, University of Tennessee, Knoxville, Tennessee. 335 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.
- Schmidt, K.P. 2000. Stream survey results for the Gravel Chub (*Erimystax x-punctatus*), Slender Madtom (*Noturus exilis*), and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Minnesota Department of Natural Resources. 14 pp. + figures.



## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Etheostoma chlorosoma*

COMMON NAME: Bluntnose Darter

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Bluntnose Darter is a small, slender darter that is found in the Mississippi River and its larger tributaries, and reaches its northern distribution in southeastern Minnesota. This species occurs in quiet waters, sluggish streams where the bottom is sand and organic debris, and in the sloughs and backwaters of larger rivers. Prior to 1984, the only validated specimens of Bluntnose Darter from Minnesota were two collected in 1944 from isolated ponds of the Mississippi River at the Iowa border. Additional specimens were reported to be taken in 1945 from Pine Creek and the Root River in Houston County, but they could not be verified. When the Bluntnose Darter was designated as a species of Special Concern in 1984, it was hoped that further investigations would identify extant populations of the species in Minnesota. Over the next ten years, several extensive surveys failed to find this species in Minnesota waters. Subsequently, this species was removed from Special Concern status in 1996 and considered extirpated from the state.

Since delisting in 1996, the Bluntnose Darter has been rediscovered in Minnesota at two new locations. In 1997, a single specimen was caught in Pine Creek near La Crescent in Houston County. In 2001, another specimen was collected from the Mississippi River near the city of Winona. More information is needed on the distribution and abundance of this species in Minnesota to assess its current status. Until this is accomplished, Special Concern status is needed and reasonable.

### SELECTED REFERENCES:

Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.

Coffin, B. and L. Pfannmuller, editors. 1988. Minnesota's endangered flora and fauna. Univ. of Minnesota Press. Minneapolis. 473 pp.

Gilbert, C. R. 1981. *Etheostoma chlorosomum* (Hay) Bluntnose darter. p. 634 in D. S. Lee et al. Atlas of North American freshwater fishes. N. C. Mus. Nat. Hist., Raleigh. 854 pp.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 03 August 2009.

Schmidt, K.P. 1991. Stream survey results for the slender madtom (*Noturus exilis*), crystal darter (*Etheostoma chlorosomum*), and bluntnose darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Unpubl. Final Report to the Minnesota DNR, Nongame Wildlife Program. 11pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Fundulus sciadicus*

COMMON NAME: Plains Topminnow

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Threatened

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Plains Topminnow has both declined and been extirpated from portions of its North American range. In Minnesota, it is restricted to the Rock River system in Pipestone, Nobles, and Rock counties in small prairie streams that are tributary to the Missouri River. The Plains Topminnow is found in spring-fed pools and backwaters of clear to moderately turbid creeks and rivers that have sandy or rocky bottoms and a heavy growth of aquatic plants. As of the mid-1980s, this minnow was not well surveyed in Minnesota and had only been reported from Kanaranzi Creek and the Rock River proper. Given its limited distribution and abundance in the state, the Plains Topminnow was listed as a Special Concern species in 1984.

Since this time, extensive survey efforts have confirmed that the Plains Topminnow is one of the rarest inhabitants of Minnesota's southwestern prairie streams. Fish surveys conducted and supported by the Minnesota DNR in the 1990s and 2000s increased the known number of locations of this species in the state to approximately 25 and the known number of rivers and tributaries to eight, all of which are within the Rock River system. While it is associated with similar habitat as the Topeka Shiner, it is far less common within Minnesota, and is rarely sampled in abundant numbers where it occurs. Water quality throughout the Plains Topminnow's range in southwestern Minnesota has been degraded by nutrient and pesticide runoff, heavy sediment loading, highway construction, urban development, and dewatering and construction of impoundments. In addition, the potential stocking of non-native Mosquitofish could jeopardize the viability of remaining populations. These cold-water fish have been introduced into stream habitat in other parts of the Plains Topminnow's range to serve as mosquito larvae control agents, and these cold-tolerant fish compete with and appear to be displacing Plains Topminnows. Given its specialized habitat requirements, sensitivity to stream degradation, limited distribution, and rarity despite extensive survey effort, it is needed and reasonable to reclassify the Plains Topminnow to Threatened status in Minnesota.

### SELECTED REFERENCES:

Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.

Hatch, J.T., K.P. Schmidt, D.P. Siems, J.C. Underhill, R.A. Bellig, and R.A. Baker. 2003. A new distributional checklist of Minnesota fishes, with comments on historical occurrence. *Journal of the Minnesota Academy of Science* 67:1-17.

Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.

Pflieger, W.L. 1997. The fishes of Missouri. Revised edition. Missouri Department of Conservation, Jefferson City. 372 pp.

Whitmore, S. 1997. Aquatic nuisance species in Region 6 of the Fish and Wildlife Service. U.S. Fish and Wildlife Service, Great Plains Fish and Wildlife Management Assistance Office, Pierre, SD.

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EXTRACTED FROM

Proposed Amendment of Minnesota Rules, Chapter 6134: Endangered and Threatened Species  
Statement of Need and Reasonableness: August 10, 2012

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Hybognathus nuchalis*

COMMON NAME: Mississippi Silvery Minnow

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Mississippi Silvery Minnow is distributed along the Mississippi River basin and Gulf Coast drainages of the United States, and is found at the northern extent of its continental range in Minnesota. It is often found in schools along side channel borders (and sometimes main channel borders) of medium to large rivers where it feeds on algae and other organic matter. Most known records of this minnow in the state occur in the Mississippi River.

Populations of Mississippi Silvery Minnows are in decline and have suffered a substantial range reduction since the establishment of Mississippi River dams. In the 1940s, surveys by the Upper Mississippi River Conservation Commission documented the distribution of the Mississippi Silvery Minnow between Pools 3 and 9, including samples from Pool 4 where it was very abundant. Since then, this species has not been reported between Pools 3-5A of the Mississippi River, and it has rarely been sampled in Pools 6, 7, and 9. Between 2006 and 2008, the Minnesota DNR extensively surveyed 192 river miles of the Mississippi River from the tailwaters of the Coon Rapids Dam (Pool A) to the Minnesota-Iowa border (Pool 9) and only caught a total of three individuals: two in Pool 6 and one in Pool 9. Due to the range contraction of this species in Minnesota, its occurrence in a highly impacted ecosystem (the Mississippi River), and the lack of recent observations despite intensive search efforts, Special Concern status for the Mississippi Silvery Minnow is needed and reasonable.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Hatch, J.T., and K.P. Schmidt. Mississippi Silvery Minnow, *Hybognathus nuchalis* (Agassiz). In: Fishes of Minnesota. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 29 May 2009.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Ictiobus niger*

COMMON NAME: Black Buffalo

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Threatened

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Black Buffalo is a rare fish that is found in sloughs, impoundments, and both fast- and slow-flowing portions of large rivers. Although the Black Buffalo was known historically in Minnesota from the Mississippi River as far north as Lake Pepin, there were no verified records in the state before 1983. However, this species has since been verified as a part of Minnesota's fish fauna. In the 1990s, specimens were collected from Pools 4, 7, and 8 of the Mississippi River and from the lower portions of the Cottonwood River, a tributary of the Minnesota River. Because of its rarity in the state and the vulnerability of its habitat to degradation, the Black Buffalo was listed as a Special Concern species in Minnesota in 1996.

Since 1996, the Black Buffalo has been identified from approximately fifteen locations on the Minnesota and Mississippi rivers; however, a majority of these records consist of only one or two individuals per site, and only adults have been observed. Minnesota DNR biologists conducted extensive, targeted surveys for Black Buffalo in the Mississippi River from 2006-2008, and small numbers of adults were sampled in Pools A, 1, 2, 4, 5, 6, and 9. Therefore, while the Black Buffalo appears to be relatively widespread in the Mississippi River, it occurs in low abundance, and surveys have not consistently documented its presence at a number of previously-known locations.

The Black Buffalo is sensitive to habitat degradation and sediment load, and therefore alteration of river habitat throughout its known range is a continuing threat. Activities impacting habitat of this large river species include the hydrologic alteration of streams and their watersheds, the continuing decline in habitat conditions on the Mississippi River associated with its management as a navigation channel, non-point and point source water pollution, and sedimentation. Dams, channelization, and dredging increase siltation, physically alter habitat conditions, and hamper the movement of fish. In addition, biologists in Minnesota and Wisconsin are seeing evidence of hybridization of Black Buffalo with Smallmouth and Bigmouth Buffalo, which can threaten the species' genetic integrity and potentially lead to extinction of natural populations. For these reasons, it is needed and reasonable to designate the Black Buffalo as a Threatened species in Minnesota.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Hatch, J.T., K.P. Schmidt, D.P. Siems, J.C. Underhill, R.A. Bellig, and R.A. Baker. 2003. A new distributional checklist of Minnesota fishes, with comments on historical occurrence. *Journal of the Minnesota Academy of Science* 67:1-17.
- Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.
- Phillips, G.L., and J.C. Underhill. 1971. Distribution and variation of the Catostomidae in Minnesota. *Occasional Papers of the Bell Museum of Natural History* 10:1-45.
- Pitlo, J., Jr., A. Van Vooren, and J. Rasmussen. 1995. Distribution and relative abundance of Upper Mississippi River fishes. Upper Mississippi River Conservation Committee, Rock Island, Illinois. 20 pp.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.

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EXTRACTED FROM

Proposed Amendment of Minnesota Rules, Chapter 6134: Endangered and Threatened Species  
Statement of Need and Reasonableness: August 10, 2012

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Lepomis gulosus*

COMMON NAME: Warmouth

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Warmouth is a species of sunfish that occurs near the northern periphery of its range in Minnesota in lakes and backwater areas of rivers with dense vegetation. Historically, it was found in the Mississippi River drainage in southeastern Minnesota including the Mississippi River mainstem from Wabasha downstream to the Iowa border. Currently, known populations of Warmouth are restricted to the Mississippi River and several lakes within the floodplain downstream of Winona (Pools 5A-9), the mouth of the Root River, and an introduced population in Big Ole and East lakes in Itasca County. While the introduced population appears secure, Warmouth in the Mississippi River are sporadically distributed and not abundant. From 2006-2008, Minnesota DNR biologists conducted extensive rare fish surveys in the Mississippi River between the Coon Rapids dam and the Iowa border, and only a total of eight Warmouth were collected: five individuals in Pools 5A and three individuals in Pool 9. However, because these sunfish are difficult to detect using standardized sampling techniques and preferred habitats are difficult to access, additional targeted sampling efforts using trapnets is needed to adequately survey for this species. The amount of suitable habitat is limited due to issues with sediment load filling in backwater areas on the Mississippi River, and remaining populations are vulnerable to further deterioration in quality and quantity of these vegetated backwater habitats. Given that this species is uncommon in Minnesota and occurs in a highly impacted ecosystem (the Mississippi River) where its distribution and abundance has contracted, Special Concern status is needed and reasonable.

### SELECTED REFERENCES:

- COSEWIC 2005. COSEWIC assessment and update status report on the warmouth *Lepomis gulosus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 16 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- McInerny, M.C. Warmouth, *Lepomis gulosus* (Cuvier). In: Fishes of Minnesota. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.
- Underhill, J.C. 1989. The distribution of Minnesota fishes and late Pleistocene glaciation. Journal of the Minnesota Academy of Science 55:32-37.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Lepomis peltastes*

COMMON NAME: Northern Longear Sunfish

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Northern Longear Sunfish is a small, colorful fish that occurs in parts of central and eastern North America, and has an extremely spotty distribution mostly in the northern third of the state. Unlike its southern counterpart (the Central Longear Sunfish) that lives in streams of varying degrees of water quality, the Northern Longear Sunfish is typically associated in Minnesota with lakes that have high water quality, substrates that are a firm mixture of sand, marl, and silt, and stretches of relatively undisturbed shoreline with emergent vegetation that also contain extensive shallows of submerged vegetation; males set up their nests in these vegetated in-shore shallows. Lakes with good water quality and undisturbed shoreline but that contain essentially only clean sand bottoms (i.e., are lacking the carpets of submerged vegetation) generally do not appear to support this species.

In 2006 and 2007, extensive, targeted surveys were conducted for Northern Longear Sunfish in one river and 119 lakes in the Red River, Mississippi River, and Lake of the Woods drainages, and specimens were found in 22 lakes as well as the one river sampled. Of these, 11 serve as confirmation of previously known locations and 12 are new state distributional records. The Northern Longear Sunfish is vulnerable to habitat modification and deterioration in water quality, which may occur as a result of shoreline development, sedimentation, turbidity, removal of riparian vegetation, and installation of sand blankets to create swimming beaches. In fact, population declines and extirpations have been detected in lakes where shoreline habitat has been significantly modified. More surveys are needed to establish the geographic range and abundance of this species in Minnesota. However, given its specialized habitat requirements, sensitivity to water quality, and scattered distribution in the state, it is needed and reasonable to classify the Northern Longear Sunfish as a special of Special Concern at this time.

### SELECTED REFERENCES:

Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.

Ceas, P., J. Porterfield, and K. Schmidt. 2008. Distribution, abundance and genetic diversity of the longear sunfish (*Lepomis megalotis*) in Minnesota, with determination of important populations. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 25 pp. + appendices.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <<http://www.natureserve.org/explorer>>. Accessed 07 August 2009.

Schmidt, K., and N. Proulx. 2009. Status and critical habitat of special concern and rare fish species in lakes within 7 counties in Minnesota. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 16 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Lythrurus umbratilis*

COMMON NAME: Redfin Shiner

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Redfin Shiner is a fairly widespread North American minnow that inhabits headwater to mid-headwater reaches of perennial streams with rubble substrate. Near the northern edge of its continental range, it occurs in the Zumbro, Root, and Cedar River systems in southeastern Minnesota. Past records indicate that the Redfin Shiner was once quite common in tributaries of the Zumbro and Cedar rivers and also historically occurred in the Upper Iowa River; however, no specimens have been documented from this stream in Minnesota since 1966. Survey data suggest a definite decline in both distribution and abundance of Redfin Shiners, with recent collections of only one or two individuals per site except when sampling during spawning. In 1991, 1998 and 1999, the Minnesota DNR conducted extensive surveys of southeastern streams and only collected two individuals at one location in the Cedar River and a single individual on the North Branch of the Root River. While they can tolerate some turbidity, their preferred stream habitat is under increasing pressure from human activities such as farming and residential development. Because of their reduced distribution and abundance in the state as well as the potential for further negative impacts to their stream habitat, it is needed and reasonable to designate the Redfin Shiner as a species of Special Concern in Minnesota.

### SELECTED REFERENCES:

Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.

Eddy, S., and J.C. Underhill. 1974. Northern fishes, with special reference to the Upper Mississippi Valley. Third edition. University of Minnesota Press, Minneapolis, Minnesota. 414 pp.

Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.

Schmidt, K.P. 1991. Stream survey results for the Slender Madtom (*Noturus exilis*), Crystal Darter (*Ammocrypta asprella*) and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources. 12 pp.+ appendices.

Schmidt, K.P. 2000. Stream survey results for the Gravel Chub (*Erimystax x-punctatus*), Slender Madtom (*Noturus exilis*), and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Minnesota Department of Natural Resources. 14 pp + figures.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Moxostoma duquesnei*

COMMON NAME: Black Redhorse

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Black Redhorse is an inhabitant of small to medium-sized perennial streams with clear water and gravel substrate. This species occurs on the periphery of its continental range in southeastern Minnesota where it is restricted to the Zumbro, Root, and Upper Iowa River drainages. It was designated as a species of Special Concern in 1984 to reflect concern about its limited distribution within the state. At that time, it was known to occur at only six sites in the Zumbro and Root River drainages. However, due to its discovery at 18 additional sites over the next decade, the Black Redhorse was removed from Special Concern status in 1996.

Since delisting in 1996, extensive, targeted collection efforts confirm the Black Redhorse as a rare species in Minnesota. Stream surveys conducted by the Minnesota DNR and Minnesota Pollution Control Agency between 1998-2004 recorded sporadic occurrences of this species at several new and previously known locations on the Zumbro, Root, and Upper Iowa River systems; however, a majority of these records consist of only a few adults per site, and individuals were absent at many sampling locations. The Black Redhorse is a sensitive species that requires clear riffles with uninterrupted flow for spawning, and therefore it is vulnerable to impacts from agricultural runoff and other activities that result in the deterioration of water or habitat quality. Based on its restricted range, low abundance, and the small number of site occurrences despite significant survey effort, it is needed and reasonable to classify the Black Redhorse as a species of Special Concern in Minnesota.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Coffin, B. and L. Pfannmuller, editors. 1988. Minnesota's endangered flora and fauna. Univ. of Minnesota Press. Minneapolis. 473 pp.
- Phillips, G.L. Black Redhorse, *Moxostoma duquesnei* (Lesueur). In: Fishes of Minnesota. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- Schmidt, K.P. 1993. Stream survey results for the gravel chub (*Erimystax x-punctatus*) and black redhorse (*Moxostoma duquesnei*) in southeastern Minnesota. Unpubl. Final Report to the Minnesota DNR, Nongame Wildlife Program. 9pp.
- Schmidt, K.P. 2000. Stream survey results for the Gravel Chub (*Erimystax x-punctatus*), Slender Madtom (*Noturus exilis*), and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Minnesota Department of Natural Resources. 14 pp + figures.



## SPECIES STATUS SHEET

OLD SCIENTIFIC NAME: *Notropis amnis*

NEW SCIENTIFIC NAME: *Hybopsis amnis*

COMMON NAME: Pallid Shiner

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Endangered

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Pallid Shiner is a rare species that reaches its northern distribution limit in the Mississippi River drainage of Minnesota and Wisconsin. This species inhabits large- and medium-sized rivers, and occasionally streams, often at the downstream ends of sand and gravel bars, and rarely enters the mouths of smaller tributary streams. It appears to avoid heavily silted habitats, but has been collected over substrates ranging from mud to sand, gravel, and rocks. It seems to prefer slow-moving waters, but has also been found in habitats with moderate to swift currents. The range of the Pallid Shiner in Minnesota appears to have shrunk since 1930. Two specimens were collected from the St. Croix River north of Taylors Falls in the early 1900s, but subsequent intensive collecting failed to reveal additional specimens in this drainage. While historical records documented this species in the Mississippi River as far north as Pool 2, as of the 1980s, recent records indicated that this species had become restricted to the Mississippi River channel south of Lake Pepin. Given its rarity in the state, the Pallid Shiner was listed as a Special Concern species in Minnesota in 1984.

Today, the Pallid Shiner is barely hanging on in Minnesota and is considered one of the rarest fish in the state. This large river minnow was sporadically caught in Pool 8 on the Mississippi River in the 1990s, but since this time has only been reported from the area once in 2005. In 2002, it was reported from Pool 3 of the Mississippi River, marking the first time it had been recorded that far north since the late 1940s. However, these two records are the last reports of the Pallid Shiner in Minnesota. Despite extensive, targeted surveys by the Minnesota DNR from 2006-2008, no individuals were sampled at any of 403 sites on the Mississippi River from the Coon Rapids dam (Pool A) to the Iowa border (Pool 9). In addition to the high level of decline in both distribution and abundance, the known range of the Pallid Shiner is limited to a heavily used portion of the Mississippi River, making remaining populations extremely vulnerable to impacts from human activities. For these reasons, reclassification from Special Concern to Endangered status is needed and reasonable.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Eddy, S., and J.C. Underhill. 1974. Northern fishes, with special reference to the Upper Mississippi Valley. Third edition. University of Minnesota Press, Minneapolis, Minnesota. 414 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Kwak, T.J. 1991. Ecological characteristics of a northern population of the Pallid Shiner. Transactions of the American Fisheries Society 120:106-115.
- Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Notropis anogenus*

COMMON NAME: Pugnose Shiner

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Threatened

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Pugnose Shiner is a small minnow that is rare throughout its range in the Upper Mississippi River, Red River, and Great Lakes basins. Minnesota serves as the center of abundance for this species, but extirpations have occurred at many of its historical locations in the state. Records are known from across the central portion of Minnesota, but collections of more than 10 individuals are rare. Becker (1983) believed this species to be in serious trouble throughout its range, as it is extremely intolerant to turbidity and siltation. The loss of shoreline vegetation and an increase in turbidity in lakes and streams are linked to its demise in other states, and both of these phenomena have occurred at many of the historic Minnesota sites. For these reasons, the Pugnose Shiner was listed as a Special Concern species in Minnesota in 1996.

The Minnesota DNR's County Biological Survey recorded Pugnose Shiners in numerous locations across the central portions of the state in surveys from 1997-2008. However, these minnows are sampled in low abundance (<10 individuals) in most locations where they occur, and are often absent in apparently suitable habitat. Pugnose Shiners prefer clear, glacial lakes and streams with an abundance of submerged vegetation. They live in low velocity habitats over sand, mud, or gravel substrates, and are commonly found in pondweed (*Potamogeton* spp.), water milfoil (*Myriophyllum* spp.), elodea (*Elodea* spp.), eelgrass (*Verbasicum blattaria*), coontail (*Ceratophyllum* spp.), bulrush (*Scirpus* spp.), muskgrass (*Chara* spp.), and filamentous algae. The presence of rooted aquatic plants seems more important to this species than substrate type.

The Pugnose Shiner is vulnerable to the removal of shoreline and littoral vegetation from lakes, increases in eutrophication from nutrient enrichment, increases in water turbidity, and possibly the invasion of Eurasian water milfoil (*Myriophyllum spicatum*). The destruction of habitat may have isolated populations of this species and caused its entire range to be discontinuous. Additional losses of Minnesota's populations would significantly impact the global security of this species. While targeted survey efforts for Pugnose Shiners have been completed and this species is confirmed rare in Minnesota, research on the life history, genetics, and the determination of specific habitat impacts and stressors is also needed. Due to concerns about habitat loss, low abundance, and history of extirpations, reclassification from Special Concern to Threatened status is reasonable and needed.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin. 1052 pp.
- Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.
- Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 01 July 2009.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of special concern and rare fish species in lakes within 7 counties in Minnesota. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 16 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Noturus exilis*

COMMON NAME: Slender Madtom

CURRENT MINNESOTA STATUS: Special Concern

PROPOSED MINNESOTA STATUS: Endangered

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Slender Madtom is a small catfish that reaches its known northern range limit in Minnesota, where it is restricted to a seven-mile reach of Otter Creek in extreme southwestern Mower County. It is found in riffles of small- to medium-sized permanent, spring-fed creeks with moderate to swift currents, and its preferred bottom substrates include limestone slabs, rubble, or gravel interspersed with sand. The Slender Madtom usually stays near or under sheltering rocks in riffles at depths of less than 12 inches, or sometimes under the cover of leaf litter in pools. The first verifiable record of this species in the state was based on three specimens collected from Otter Creek in Mower County in 1954, and attempts to collect additional specimens over the next several decades were unsuccessful. Consequently, the Slender Madtom was listed as a Special Concern species in Minnesota in 1984.

Since this time, the Slender Madtom has only been documented at a total of four locations on Otter Creek and has not been found anywhere else in the Cedar Creek watershed. Stream surveys in 1985 and 1990 failed to discover additional Slender Madtom records in Minnesota, although the species was documented two miles south of the Minnesota-Iowa border. A 1991 survey collected two additional specimens from Otter Creek approximately 5 miles upstream from the original 1954 site location. Then, in 2008, the Minnesota DNR's County Biological Survey collected a single individual at the original site location and a total of seven individuals at two new sites nearby. Despite additional surveys, no other records exist for the Slender Madtom in Minnesota.

Populations across the Slender Madtom's range have declined since the late 1970s. Causes for decline may include siltation and turbidity in farming areas, and the dewatering of habitats by hydropower operations. Predation and intraspecific and interspecific competition may also affect the survivorship of Slender Madtoms. Moreover, because this species is only known from a few locations within a highly localized area of Minnesota, a single catastrophic event such as a toxic chemical spill could result in the extirpation of remaining populations of Slender Madtoms in the state. Due to similarity in appearance, the waters of Dodge, Freeborn, and Mower counties were closed to the commercial harvest of tadpole madtoms and stonecats in 2007, except by special permit, to protect the Slender Madtom. Given its rarity, specialized habitat requirements, and restriction to one minor watershed in the southeastern part of the state, it is needed and reasonable to list the Slender Madtom as Endangered at this time. Additional research needs for this species in Minnesota include life history studies, genetic analysis, identification of habitat guilds, and the determination of specific habitat impacts and stressors.

### SELECTED REFERENCES:

Eddy, S., and J.C. Underhill. 1974. Northern fishes, with special reference to the Upper Mississippi Valley. Third edition. University of Minnesota Press, Minneapolis, Minnesota. 414 pp.

Hatch, J.T., G.L. Phillips, and K.P. Schmidt. In preparation. The fishes of Minnesota.

Lyons, J., P.A. Cochran, and D. Fago. 2000. Wisconsin fishes 2000: status and distribution. University of Wisconsin Sea Grant Institute, Madison, Wisconsin. 87 pp.

Minnesota Department of Natural Resources, Division of Ecological Resources. 2008. Rare species guide: an online encyclopedia of Minnesota's rare native plants and animals [Web Application]. Minnesota Dept. of Natural Resources, St. Paul, Minnesota. <<http://www.dnr.state.mn.us/rsg>>. Accessed 02 July 2009.

Schmidt, K.P. 1991. Stream survey results for the Slender Madtom (*Noturus exilis*), Crystal Darter (*Ammocrypta asprella*) and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources. 12 pp.+ appendices.

Vives, S. P. 1987. Aspects of the life history of the Slender Madtom, *Noturus exilis*, in northeastern Oklahoma (Pisces: Ictaluridae). American Midland Naturalist 117:167-176.

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EXTRACTED FROM

Proposed Amendment of Minnesota Rules, Chapter 6134: Endangered and Threatened Species  
Statement of Need and Reasonableness: August 10, 2012

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Phenacobius mirabilis*

COMMON NAME: Suckermouth Minnow

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Suckermouth Minnow is slender fish that inhabits riffle areas of sandy streams with little vegetation and feeds on aquatic insects and other bottom-dwelling invertebrates. In Minnesota, its range is limited to the lower Mississippi River drainage in the southeastern part of the state where its overall distribution and abundance in the state has declined from historical records. The Suckermouth Minnow once occurred in the Cannon, Zumbro, Root, and Upper Iowa river systems as well as in the Mississippi River proper. However, extensive surveys conducted in the 1990s and 2000s indicate that this species is likely extirpated from the Mississippi River (last reported in 1955) and is now absent from a number of previously-known locations in the Cannon, Zumbro, and Root River systems. Single specimens were collected from the Little Cedar River in 1998 and 2004, marking the first reports of Suckermouth Minnows from this stream in Minnesota. The Suckermouth Minnow is often found in turbid water and is considered a pioneer species that can readily colonize recently disturbed habitat, yet it is apparently disappearing from a number of historical locations in river systems that have been highly impacted by human activity. Further research into the causes for this species' apparent decline and determination of specific habitat impacts is needed. However, given its reduced range and low abundance, Special Concern status is needed and reasonable at this time.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Hatch, J.T., and K.P. Schmidt. Suckermouth Minnow, *Phenacobius mirabilis* (Girard). In: Fishes of Minnesota. J.T. Hatch, G.L. Phillips, and K.P. Schmidt, editors. In preparation.
- Schmidt, K.P. 2000. Stream survey results for the Gravel Chub (*Erimystax x-punctatus*), Slender Madtom (*Noturus exilis*), and Bluntnose Darter (*Etheostoma chlorosomum*) in southeastern Minnesota. Final report submitted to the Minnesota Department of Natural Resources. 14 pp + figures.
- Schmidt, K., and N. Proulx. 2009. Status and critical habitat of rare fish species in the Mississippi River from the Coon Rapids Dam to the Iowa border. Final report submitted to the State Wildlife Grants Program, Minnesota Department of Natural Resources. 29 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Platygobio gracilis*

COMMON NAME: Flathead Chub

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Flathead Chub is a large, silvery minnow that inhabits turbid, flowing waters of large rivers in the Northwest Territories and Great Plains of the United States. Minnesota lies near the northeastern periphery of its range, and its occurrence in the state is documented from only a single specimen collected from the Red River of the North near Climax in Polk County in 1984. While it is uncertain whether the Flathead Chub is a native species to the state or was introduced into the Red River, populations are known from Lake Winnipeg and the lower Red River in southern Manitoba just across the Minnesota-Canada border. Because frequent, wide lateral flooding of the Red River could connect southern Manitoba populations with Minnesota, it is highly plausible that this minnow has extended its range southward into Minnesota waters. Further survey work is needed to attempt to relocate this species in Minnesota and clarify its distribution. Until more field data are available, a status of Special Concern is needed and reasonable.

### SELECTED REFERENCES:

- Goldstein, R.M., J.C. Stauffer, P.R. Larson, and D.L. Lorenz. 1996. Relation of physical and chemical characteristics of streams to fish communities in the Red River of the North basin, Minnesota and North Dakota, 1993-95. USGS Water Res. Invest. Rep. 96-4427.
- Pflieger, W.L. 1997. The fishes of Missouri. Revised edition. Missouri Department of Conservation, Jefferson City. 372 pp.
- Renard, P.A., S.R. Hanson, and J.W. Enblom. 1985. Biological survey of the Red River of the North. Special publication number 142. Minnesota Department of Natural Resources, Division of Fish and Wildlife, Ecological Services Section, St. Paul.
- Stewart, K.W., and D.A. Watkinson. 2004. The freshwater fishes of Manitoba. University of Manitoba Press, Winnipeg, Manitoba. 276 pp.

## SPECIES STATUS SHEET

SCIENTIFIC NAME: *Prosopium coulterii*

COMMON NAME: Pygmy Whitefish

CURRENT MINNESOTA STATUS: None

PROPOSED MINNESOTA STATUS: Special Concern

**BASIS FOR PROPOSED MINNESOTA STATUS:** The Pygmy Whitefish is a tiny coldwater fish that inhabits deepwater areas of deep lakes. This species is only known from Lake Superior in Minnesota and has a highly disjunct North American distribution, with the closest population to Lake Superior located 1,000 miles to the west in western Montana and southwestern Alberta. The Pygmy Whitefish was first discovered in Lake Superior in the 1950s using a small mesh bottom trawl, and subsequent sampling found it to be widely distributed from the Apostle Islands to Whitefish Bay and Isle Royale. It has occasionally been collected in Minnesota, but it is difficult to sample because individuals typically occur in water depths of 60-220 feet. Currently, very little is known about the life history or status of this deep lake species in Minnesota. Given its specialized habitat needs and restricted range in the state, it is reasonable that the Pygmy Whitefish be designated as a species of Special Concern. This status will highlight the need for further research into its ecology, distribution, and abundance in Minnesota.

### SELECTED REFERENCES:

- Becker, G.C. 1983. The fishes of Wisconsin. University of Wisconsin Press, Madison. 1052 pp.
- Dryer, W.R. 1966. Bathymetric distribution of fish in the Apostle Islands Region, Lake Superior. Transactions of the American Fisheries Society 84: 248-259.
- Eschmeyer, P.H., and R.M. Bailey. 1955. The pygmy whitefish, *Coregonus coulteri*, in Lake Superior. Transactions of the American Fisheries Society 84: 161-199.
- Mackay, W.C. 2000. Status of the pygmy whitefish (*Prosopium coulterii*) in Alberta. Alberta Environment, Fisheries and Wildlife Management Division, and Alberta Conservation Association. Alberta Wildlife Status Report No. 27, Edmonton, AB. 16 pp.
- Page, L. M., and B. M. Burr. 1991. A field guide to freshwater fishes: North America north of Mexico. Houghton Mifflin Company, Boston, Massachusetts. 432 pp.
- Scott, W.B., and E.J. Crossman. 1973. Freshwater fishes of Canada. Fisheries Research Board of Canada Bulletin 184. 966 pp.