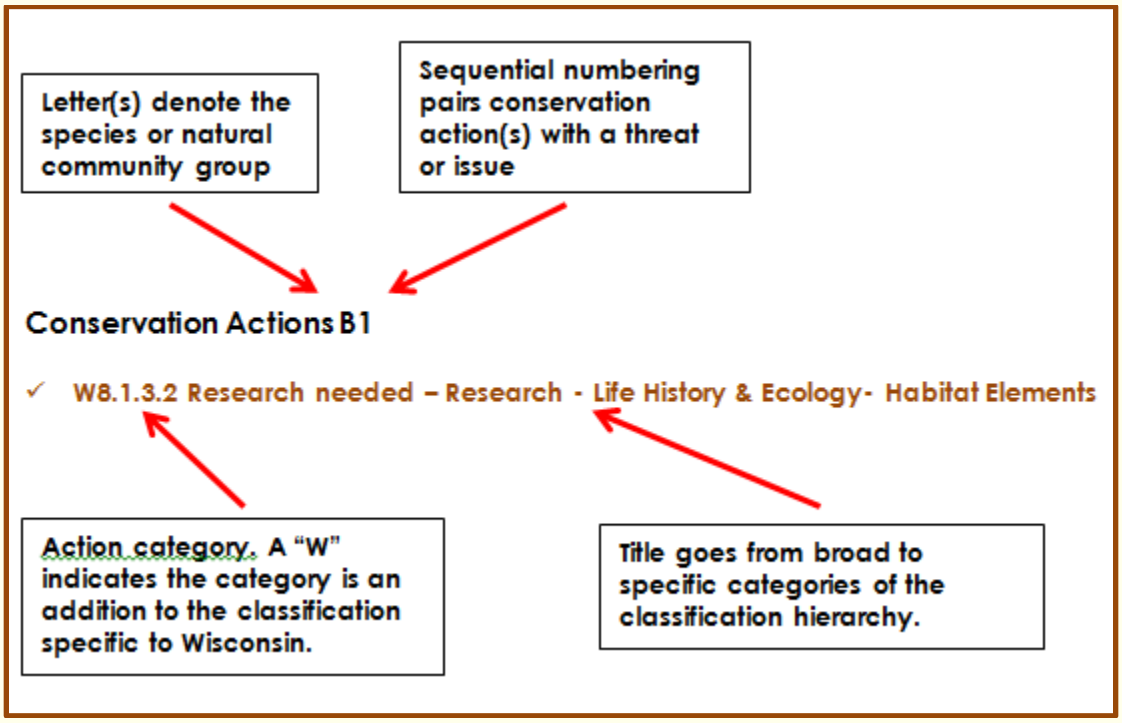
Threats/Issues and Conservation Actions for Fish Species of Greatest Conservation Need

This is a summary of threats or issues affecting the conservation of fish SGCN and actions that can be implemented at the source, or to address the effects of the source on the species or its habitat. Distinguishing the source of the impact from the effects or the changes that occur to the species and its habitat is important because the two typically need a different approach and set of conservation actions. Multiple sources of impact may have the same or similar effects on species or habitat. Similar effects may be addressed collectively by a single action or suite of actions.

Conservation actions applicable to all or most fish SGCN are organized according to categories in the Conservation Actions Classification based on the Open Standards threats and actions classification[1]. If the threat/issue and its associated conservation action(s) apply to one or a few species they are identified as such. Conservation actions overlapping in content or scope may be grouped under a single code. Coding and identification for each action category are explained further below.



More about how threats and issues or conservation actions were developed, opportunities to provide input on this topic, and how this information can be used to make conservation decisions can be found on the Conservation Actions and

[1] See the following website for the classifications. http://cmp-openstandards.org/tools/threats-and-actions-taxonomies/ (Search Terms: open standards conservation threats actions). The conservation actions classification is provided in Appendix 2.1.

Effectiveness Monitoring page or in Sections 2 and 3.3 of the Wisconsin Wildlife Action Plan.

Threat/Issue F1

The most frequently cited issue category for fish SGCN is water quality alteration, which can be divided into three subcategories of nutrient loads, sediments and to a lesser extent chemical pesticides/herbicides. All three categories enter aquatic systems via point and non-point sources from certain agricultural practices and development within the watershed. The agricultural practice sources tend to predominate in the southern half of the state. Development areas affecting SGCN fish tend to be more dominant in the northern part of the state and along the Great Lakes.

Conservation Action F1

✓W2.4 Land/water management- Comprehensive Management
✓5.4.4 Law & policy- Compliance and enforcement- Scale unspecified
The most commonly cited action categories to address sources of pollution are comprehensive management to protect, preserve and restore aquatic habitat on private and public lands; compliance with water quality regulations and standards; rigorous application of industry or sector standards or practices (e.g., agricultural best management practices); and integrated pest management that relies on biological or natural method of pest control rather than chemical methods.

Threat/Issue F2

Residential and commercial development in the form of shoreline alteration and development. Loss or destruction or riparian and floodplain vegetation is another commonly cited category of threat facing fish SGCN. This is particularly noted in inland and Great Lakes natural communities.

Conservation Actions F2

✓2.3 Land/water management- Habitat & natural process restoration (Aquatic, Wetland, and Terrestrial (upland))
✓W5.2.3 Law & policy- Policies and regulations- Local
Conservation actions to address this issue are focused on two primary areas. The first of these is raising awareness and education of landowners to preserve and restore riparian and floodplain habitat. Landowner and community associations are core groups that can successfully implement actions in this category. The second category is policies and regulations that maintain, encourage and support protection of these natural communities. Local policy and regulations are relatively more effective in this respect because they can more readily target aquatic systems that provide SGCN habitat.

Threat/Issue F3

Natural system modification in aquatic habitats occurs through hydrologic control and infrastructure, including the many lock and dam structures for commercial navigation along the Mississippi River and water management along the Wisconsin River. These modifications alter water flow and depth that affect habitat for SGCN fish. Tributaries to these rivers and other river aquatic systems are also affected by water level management throughout the state.

Conservation Actions F3

✓2.3 Land/water management- Habitat & natural process restoration (Aquatic, Wetland)
✓W2.4 Land/water management- Comprehensive management
Some of the important actions that address hydrologic modifications to SGCN fish habitat include continued evaluation and implementation of the Mississippi River Habitat Enhancement and Rehabilitation Program projects and to carefully anticipate beneficial and detrimental impacts to SGCNs when planning and carrying out drawdown projects. Restoration projects on the Mississippi River are largely aimed at mitigating the impacts of impoundment and navigation, including the rebuilding of lost islands (themselves former high points within the floodplain), removal of sediment from backwater lakes to increase habitat complexity and preserve fish habitats, protection of islands, marshes and shorelines from wind- and wave-driven erosion, and similar actions to promote the water quality, habitat and wildlife of the river ecosystem. Connectivity of habitats is also a consideration in restoration projects.

Threat/Issue F4

Aquatic invasive species (e.g. several species of carp, non-native invertebrates and aquatic plants) compete with native species and degrade habitat for fish Species of Greatest Conservation Need in Wisconsin.

Conservation Actions F4

✓2.2 Land/water management- Invasive/problematic species control
✓4. Education & awareness
✓8.2 Research needed- Research- Conservation planning
Wisconsin's invasive species law (NR40) sets the stage for many related actions that include education and awareness as well as development and implementation of best management practices among recreational users and the commercial fishing, navigation, and aquatic species trade to prevent and control aquatic invasive species. Many conservation actions to address this issue have already been established and

can be expanded and implemented throughout the state by conservation organizations, state and local agencies and other entities.

Threat/Issue F5

Lack of information is identified as a threat primarily in the areas of 1) inventory and monitoring; 2) conservation planning for preservation and restoration projects in aquatic habitats for not only fish, but aquatic invertebrates and plants; and 3) understanding the relationship between changing climate (especially water temperature and variable flow/depth) and appropriate habitat management actions. There is little long term monitoring of rare fish populations in our state. Much of what we currently know is incidental to fisheries inventories.

Conservation Actions F5

✓8.1.2 Research needed- Research- Population size, distribution & past trends
✓7.2 External capacity building- Alliance and partnership development
✓8.2.2 Research needed- Conservation planning- Area-based Management Plan
Collection of rare fish data may be incorporated into monitoring programs for game species. Opportunities for combined or expanded objectives are underutilized. Conduct large-scale conservation planning efforts with private and public stakeholders in the upper Mississippi River, Wisconsin River and their large river tributaries, including adjacent floodplain. Identify aquatic conservation opportunity areas that target assemblages of aquatic species, including fish, aquatic insects, mussels, etc. Criteria for identifying these areas should incorporate climate change adaption and other large-scale environmental changes, as well as shifting land use patterns and pressures.

Threat/Issue F6

Water quality alteration, commercial and residential development, agricultural development.

Conservation Actions F6

✓2.3 Land/water management-Habitat & natural process restoration
Restore appropriate habitat in the lower Wolf, Mississippi and lower Wisconsin Rivers for shoal chub. Restore Ozark minnow habitat in the watersheds and tributaries of the Platte River. Restore habitat for the longear sunfish in the rivers and lakes where they occur, with emphasis on improving water clarity.