



Project Work Benefitting Native Fish & Aquatic Systems

Brad Parsons | Fisheries Section Manager

Agenda

- Fisheries management 101
- Where we've been successful
- Looking forward
 - Where we need to learn more
 - What else we're thinking about

Fisheries management 101: people, fish, habitat

- Regulations and stocking – ensure sustainable recreational use
- Monitoring and research – builds understanding of aquatic ecosystems to support long-term conservation for society's benefit
- Habitat – accomplished through integrated information gathering, adaptive strategies, ecosystem-based principles, and collaboration between governments and others to manage, protect, and restore
- Climate/system change is the big unknown
 - E.g., warming water, shifting thermoclines, shifting phenology



Where
we've been
successful



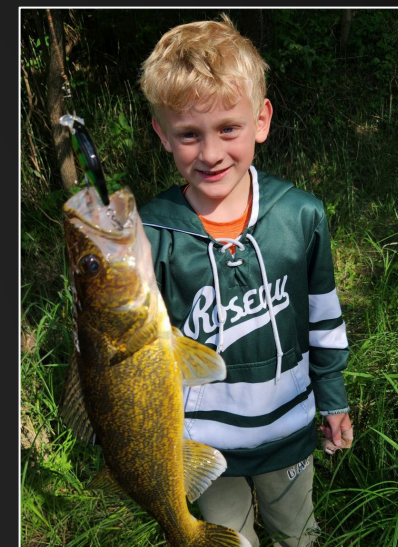
Connectivity projects

- **What it is:** enhanced fishing and ecological function by restoring natural connections between lake and river habitats
- **Benefits:** restored spawning migrations & habitat | restored seasonal movement (foraging, overwintering, etc.) | improved river fish populations (species range & abundance) | improved winterkill recovery in shallow lake chains
- **Approaches:** dam removal or modification | culvert replacement



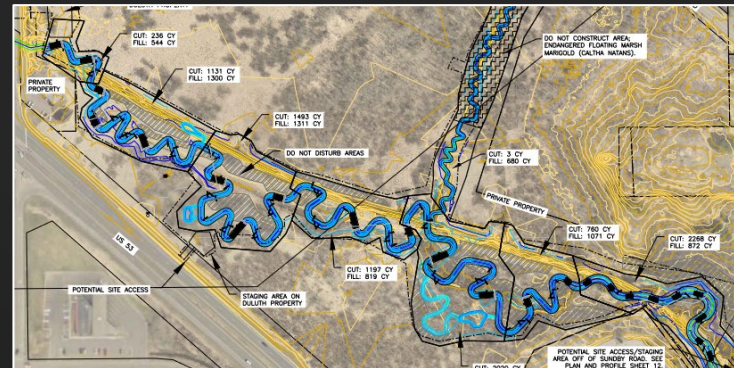
Connectivity projects – success stories

- **Red River lake sturgeon:** critical migratory pathways between lake and river habitat restore sturgeon to their native range
- **Restored sport fish range:** barriers halt/weaken sport fish populations in the waters above | connectivity projects restore species range/strengthen populations
- **Red River Basin smallmouth bass:** projects improve availability of sport fish across basin rivers and streams | fishable populations are now in multiple new rivers/reaches



- **What it is:** stream design that provides habitat for all life stages of fish | allows sediment/water transport | has appropriate dimension/pattern/profile for valley type & existing boundary conditions
- **Approach:** supported by trout stream easement acquisition allowing public access

Stream restoration



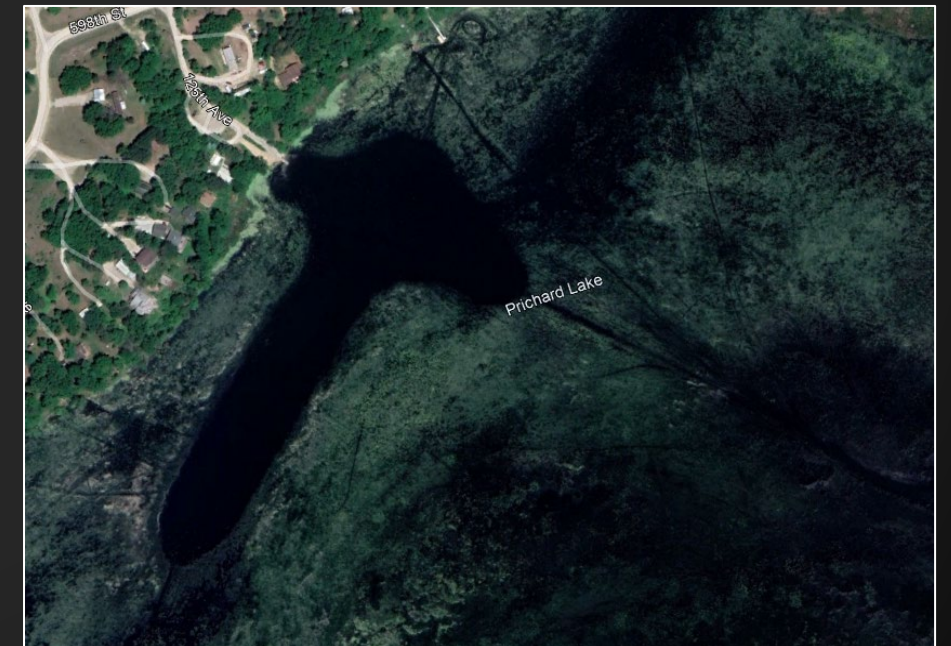
Easement acquisition

- **What it is:** protecting forested watersheds from development to maintain habitat for cold water fish in a changing climate
- **Benefits:** anglers, lake users, fish populations
- **Project highlight:** Kabekona Lake, Hubbard County recently reached 75% protection threshold with OHF & partner funding



Large river backwater restoration

- **What it is:** restoring habitat/ecosystem function caused by the impacts of lock and dam system and commercial navigation (sedimentation/loss of sediment transport)
- **Benefits:** improved fisheries | beneficial use of dredged material for restoration of other key river habitats (e.g., floodplain forest, prairie restoration)
- **Challenges:** dynamic river system (site selection must support long-term viability) | substantial state/federal coordination | substantial cost to “move the needle” | limited funded for long-term management
- **Project highlights:** Weaver Bottoms/Pritchards LSOHC (backwater and prairie restoration), Brewer Lake Inlet (flow modification), numerous federal projects (Upper Mississippi River Restoration program)



Watershed health

- **What it is:** improve water quality parameters through addressing runoff, leading to dramatic water clarity improvement & resurgence in native submergent aquatic vegetation
- **Benefits:** fewer algal blooms | strong fishery (natural reproducing walleye, northern pike, yellow perch) | builds local support
- **Challenges:** affects recreation (leisure boating, wave runners)
- **Project highlight:** Decreased cattle feedlot runoff reaching Lake Shaokotan (1,000 acres)



Flipping lakes to clear water state

- **What it is:** drawdowns are a shallow lake restoration technique to improve water/habitat quality for wetland-dependent wildlife & balanced fishery
- **Approach:** outlet structures/pumps to lower water levels | can be combined with stocking top predator fishes (northern pike) to provide additional control of nuisance fish populations
- **Benefits:** encourages winterkill of undesirable species | stimulates vegetation | promotes flips to clear water state | effective but requires repeated management
- **Other techniques:**
 - Walleye fry stocking to suppress fathead minnow
 - Watershed nutrient reduction efforts



Looking
forward



Localized interventions

- Common carp and other fish removal work
- Artificial spawning reefs
- Lake treatments that don't account for watershed sources (e.g., alum treatments)
- Dredging
- Mechanized fish passage
- Limited/small-scale natural shoreline acquisition



What else we're thinking about

- Continuing challenges
 - Environmental: land use, riparian conversion, runoff, sediment, connectivity, invasives, changing fish communities due to climate, etc.
 - Recreational and other social issues: vegetation, etc.
- Emerging opportunities
 - Public outreach on stewardship (e.g., shoreline)
 - Technology to understand fish and habitat (e.g., sonar)



Thank You!

Brad Parsons

bradford.parsons@state.mn.us

651-259-5229