

## 2018 Coaster Brook Trout Project

### Purpose Statement

Lake Superior Area and MNDNR has formed great relationships with anglers over the past two years through the Steelhead Genetics Project. We would now like to utilize those relationships with anglers to expand our knowledge of a Lake Superior native fish, the Coaster Brook Trout! Coaster surveys have been completed by MNDNR Fisheries every 5 years since 1997, and a survey will be completed in fall of 2018 (see 2017 Lake Superior Management Plan). Samples collected during these surveys found that Minnesota Brook Trout are genetically distinct from other Brook Trout strains in Lake Superior (Burnham-Curtis 2000), and that hatchery strains can be distinguished from wild strains (Miller et al. 2016).

In 2018, DNR staff will collect fin clips for ongoing genetic monitoring and to determine the genetic contribution from coaster hatchery strains and Splake (Brook Trout X Lake Trout hatchery hybrid), which is a growing concern among Lake Superior management agencies (Ferringa et al. 2016). Our genetic evaluations will meet multiple objectives defined in the MNDNR Lake Superior Management Plan for Coaster Brook Trout, help monitor impacts of various stocking strategies by other agencies, and support research by other agencies on coaster Brook Trout in Lake Superior.

*Why get anglers involved?* Previous DNR Coaster Brook Trout surveys have highlighted sampling biases whereas sampling was only possible under certain river conditions and most streams were sporadically sampled one or two times in the fall spawning season – and no other times of the year (Tillma 1997; Pranckus and Ostazeski 2003; Ward 2007; Ward 2008; Blankenheim 2013). When multiple EF assessments were completed the same fall on one stream, abundance estimates were often very different and previously sampled Brook Trout were often not recaptured (known from a fin clip applied in first sampling effort), which likely indicated movement out of the stream or mortality among sampling events. Most North Shore streams have areas that cannot be sampled safely and efficiently with backpack electrofishing gear (i.e., below a large barrier falls), and these areas are the most likely places where large coaster Brook Trout would reside. Few large-sized (>18 inches) coaster Brook Trout were captured in previous MNDNR fall electrofishing assessments, and the biggest fish captured were mostly hatchery origin (Miller et al. 2016). Anecdotal reports and pictures provided by North Shore anglers indicate that large Brook Trout (maybe hatchery origin?), are captured by anglers in the areas previously described throughout the year (N. Peterson, MNDNR, pers. comm.). Some question whether large Brook Trout are present during DNR fall electrofishing assessments but are not collected due to inadequate sampling frequencies or efficiencies with sampling gear limitations. If so, incorporating alternative sampling methods (e.g., angling) could help to better index coaster Brook Trout populations in Minnesota tributaries to Lake Superior. Anglers who actively target Coaster Brook Trout in Minnesota waters (below posted boundaries) throughout the year will be provided a MNDNR sampling permit to collect non-lethal fin clips from adult Brook Trout (8 inches or larger). Anglers' samples will supplement coaster Brook Trout samples collected in the 2018 MNDNR assessment. Based on angler participation and samples provided, 2018 will determine if a volunteer angling program will be a useful effort for future DNR coaster assessments. Angler samples will also answer other questions not described here.

**Objective:** Determine the genetic contribution from hatchery strains of coaster Brook Trout and Splake (Brook Trout X Lake Trout hatchery hybrid) in Minnesota's coaster Brook Trout populations.