Bald Mountain Pond
Conservation of Endemic Arctic Charr
Update 2021

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Since the completion of the *Bald Mountain Pond Conservation of Endemic Arctic Charr* report in 2018, the Maine Department Inland Fisheries and Wildlife (MDIFW) continues work to complete plans outlined within that document. The following provides a brief update on the work completed since the 2018 report was published and outlines future plans concerning the conservation of Arctic Charr at Bald Mountain Pond (BMP).

1. *Translocation waters will be identified based on water quality, physical characteristics, and past experiences. Maine State Heritage Fish waters offer the most suitable habitat and may be the focus of rule changes to utilize these waters for translocation of charr from BMP.*

   The process of identifying candidate translocation waters has not been developed and will require a thorough, detailed process to reach completion. The need to prioritize waters most suitable for translocation may include Maine State Heritage Fish waters. This action item is identified in the draft 2021 Fisheries Strategic Plan for the conservation of native endemic species such as Arctic Charr.

2. *Efforts would also be directed at securing a facility to support culture of BMP charr, including funding sources to support associated costs.*

   Identification of a fish culture facility has not been completed. The need to identify an isolated facility to be used for charr brood programs is identified in the draft 2021 Fisheries Strategic Plan. Preference will be given to locating a facility outside of MDIFW's current hatchery infrastructure to ensure the extensive biosecurity safeguards at existing facilities are not compromised. This action item is identified in the draft 2021 Fisheries Strategic Plan (Hatchery Goals).

3. *Smelt suppression by way of electroshocking eggs will continue again next year (2019), and perhaps longer as a temporary measure to reduce potential interactions.*

   Smelt suppression by electroshocking was conducted in 2019 but did not occur in 2020 or 2021. Experimental smelt suppression efforts conducted by MDIFW, although successful at disrupting recruitment in certain tributaries, is likely insufficient to control the population and is extremely labor intensive. Therefore, MDIFW will no longer continue electroshocking efforts but will evaluate smelt spawning runs when conditions allow. Also, MDIFW will explore the feasibility and short/long-term value of hiring contract staff to physically remove adult smelt in the future.

4. *Water quality plays an integral role in the viability of managing BMP for charr in the future. As a result, beginning in June of 2019, the pond will be sampled monthly (through September) to collect temperature and dissolved oxygen profiles.*

Water quality sampling was completed monthly from June through September during 2019, and then again during the August 2020 charr monitoring and fish health sampling. Water quality sampling will continue during all future fish sampling events. Long-term, active or passive water quality monitoring at BMP will benefit from assistance of partners to collaborate efforts, including deploying passive data temperature and dissolved oxygen loggers or active sampling.

5. *Annual charr population status monitoring will continue to occur in August with short period gillnet sets.*

   August gillnet monitoring was conducted in 2019 and 2020. During 2019 sampling, one charr was collected in 29.6 total hours of sampling effort and no charr were collected in 2020 after 22.8 total hours of sampling effort. Since charr population abundance appears to remain low, future charr population status monitoring will be extended from annual to every 3–5 years, collaborating with the State's Arctic Charr Principal Investigator, and maintaining consistency with statewide monitoring plans for Arctic Charr as developed under the draft 2021 Fisheries Strategic Plan. As MDIFW continues status monitoring, if any positive change in charr population is observed, a telemetry project may be considered at that time, as well as a determination of potential self-recovery.

6. *Baited charr traps, a technique recently refined by the Department, will also be experimentally fished in 2018.*

   Baited charr traps were deployed in August and September of 2018 for a collective 2,566.2 hours and no charr were captured. The traps successfully captured brook trout, white sucker, lake chub, and sunfish species. This method is likely best utilized in waters with an abundant charr population and will not be a component of long-term monitoring at BMP.

7. *During annual gillnet sampling, a sample of brook trout will be collected to maintain the fish health classification needed for potential charr translocation.*

   Brook trout were collected in 2019 and 2020 for fish health testing. These samples were found to have no diseases of regulatory concern and met requirements to maintain status for translocation. MDIFW will collect fish health samples in the future on an as-needed basis and in conjunction with routine monitoring. If any positive change in charr status is observed, and translocation or a brood program are deemed feasible, then frequency of fish health sampling will increase.

8. *The status of lake trout will continue to be monitored during all field surveys and all encountered lake trout will be euthanized.*

Monitoring of lake trout presence and abundance occurred during Arctic Charr gill net monitoring and fish health sample nettings in 2019 and 2020 (sampling effort described above). No lake trout have been collected or reported to MDIFW since 2017. Continual monitoring will occur during routine sampling for Arctic Charr and brook trout and through extended public outreach with the planned utilization of a voluntary angling data collection box ("Volbox") at the public boat launch.

9. *During the 2018 APA rulemaking process, the Department will propose a no size or bag limit regulation on lake trout.*

   A no size or bag limit regulation on lake trout was applied to Bald Mountain Pond and has been effective since January 1st, 2018.

Also, an updated/highly detailed bathymetric map was identified as a beneficial tool for future and ongoing work at BMP. The creation of an enhanced bathymetric map will be labor intensive and require collaboration with a partner to assist with data collection.

Conclusions

The long-term fate of Bald Mountain Pond charr following the illegal introduction of rainbow smelt is still too early to determine based on current data. Through knowledge and observations gained during similar events at Big Reed Pond, it is believed that Bald Mountain Pond is still in the natal stages of responding to the introduction, and it is too early to know if the charr population will become extirpated or if adaptation and self-recovery will occur.

Stocking or translocation of charr into BMP from another Maine water would only be considered after the charr status in BMP is determined to be extirpated and lake trout are not considered a threat to the genetic integrity of charr. Any stocking or translocation events would follow MDIFW stocking policy and would therefore be subject to a peer review and public comment.

Long-term charr conservation actions at Bald Mountain Pond will be continuously adjusted to reflect the best, most efficient conservation techniques for charr based upon past and present data.