

All Things Bass with CBN



7/26/2023

Andrew Bade, Spencer Mallette, Joe Cassone

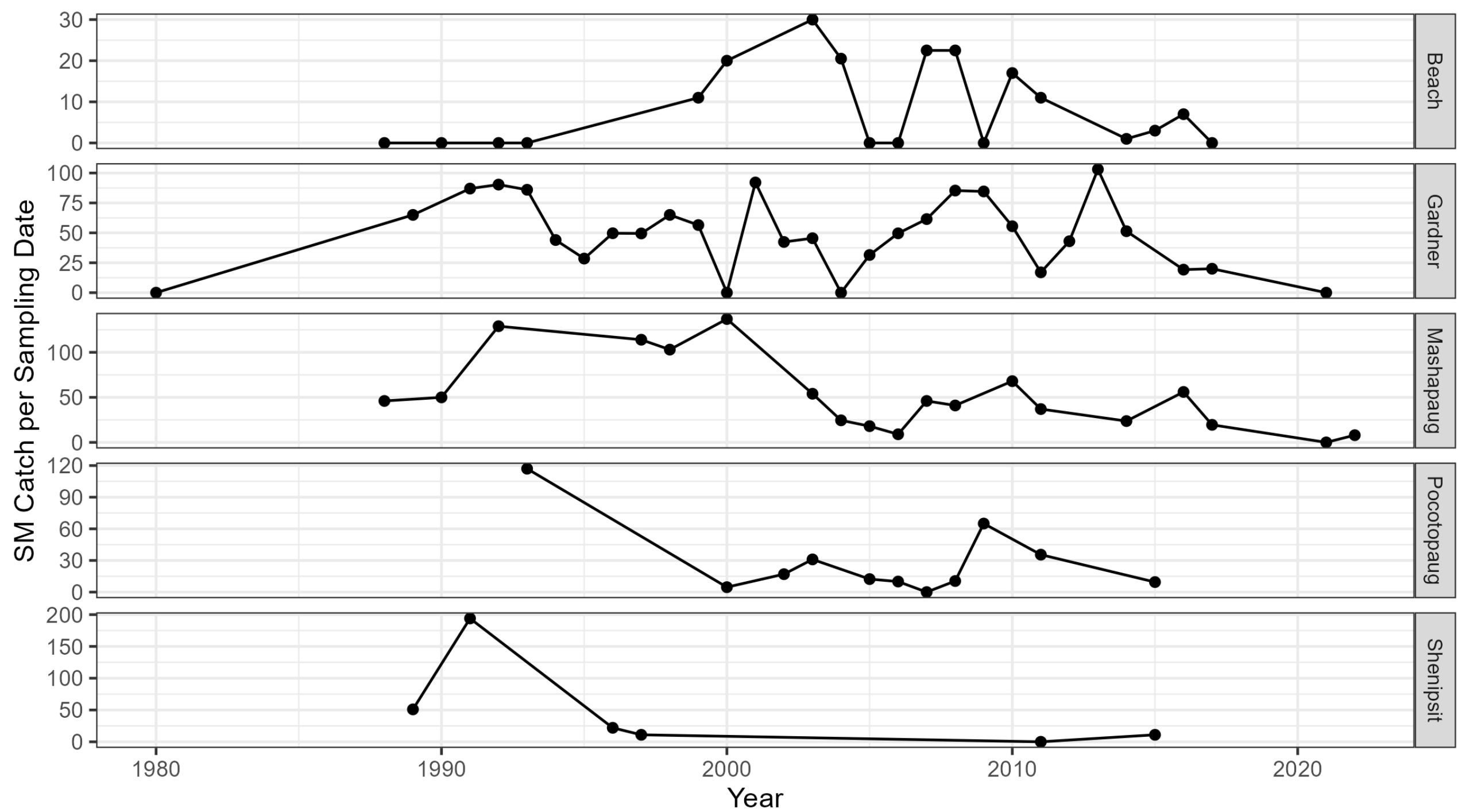
Topics Covered

- Bass Action Plan progress update
- Candlewood Lake Triploid Grass Carp Update
- Herbicide spraying and permitting process on Connecticut waters
- Update on Squantz Cove Boat Launch Improvements

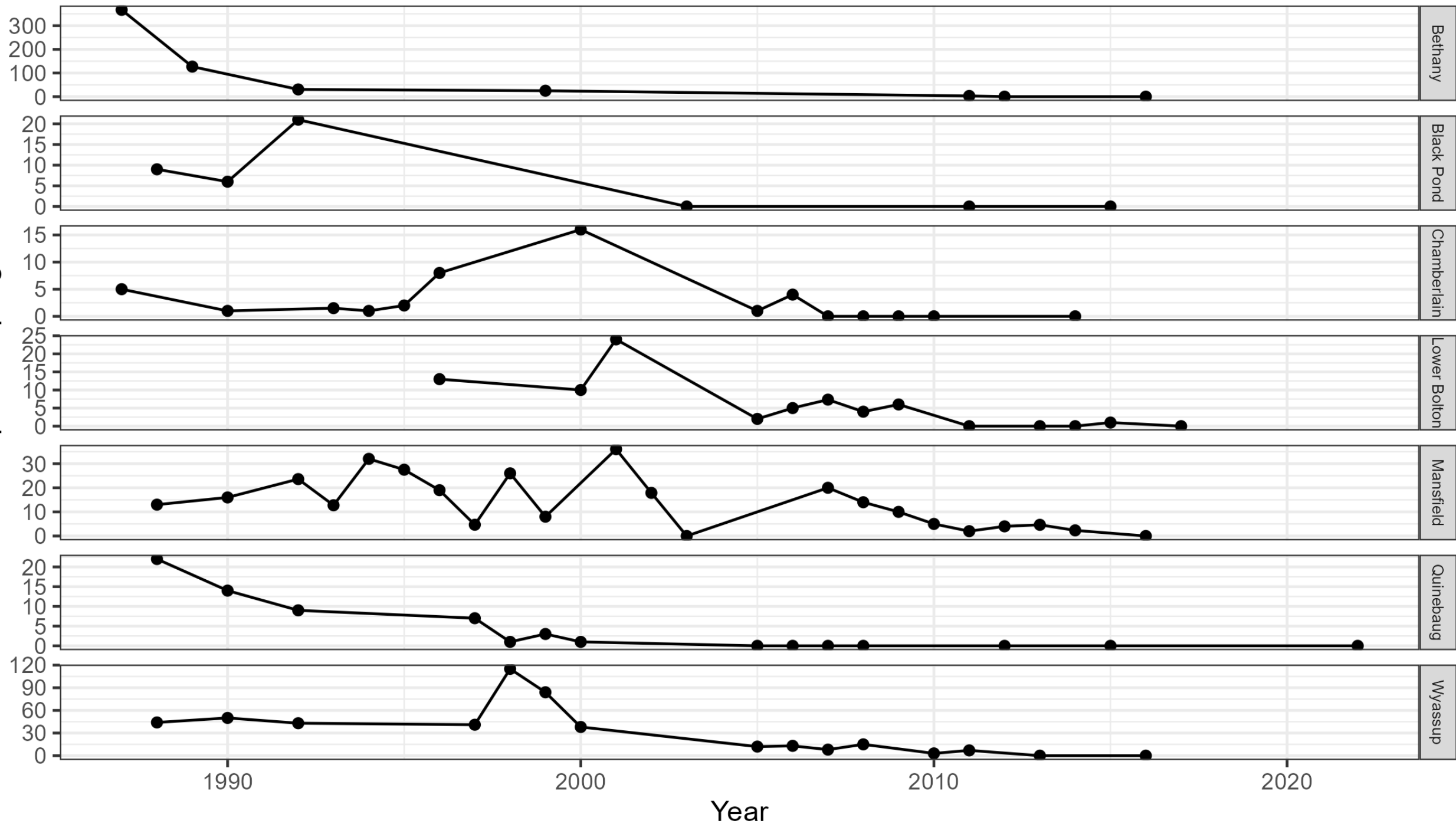


Smallmouth Bass In Decline

- Electrofishing data suggest reductions in the range and abundance of SM in CT lakes and ponds
- The decline in Connecticut is part of a broader regional decline
 - Lots of published work on losses in PA, the Chesapeake Bay watershed, and elsewhere in the mid-Atlantic
 - NY DEC biologists told me they've lost their southern SM populations



SM Catch per Sampling Date



Smallmouth Project - Electrofishing

- Used electrofishing to confirm the lack of Smallmouth Bass in several lakes and ponds during the spring of 2023, going to visit historically high-density populations in the fall of 2023
 - Extirpated in: Bethany Lake, Black Pond (Woodstock), Chamberlain, Lower Bolton, Mansfield Hollow, Quinebaug Lake, and Wyassup
 - Declining in: Beach Pond, Gardner Lake, Mashapaug Lake, Lake Pocotopaug, and Shenipsit Lake

Smallmouth Project – Angler Surveys

- Confirming absence of extirpated populations and assessing angler interest in reintroduction
 - Focus on Quinebaug and Wyassup Lakes in 2023 due to habitat quality and historically high abundance suggesting them as good candidates for reintroduction
 - Nearly unanimous interest in reintroducing Smallmouth from anglers
 - Plan to revisit with creel surveys in coming years after stocking Smallmouth to evaluate short and long-term effectiveness
- Supplemental electronic creel survey on lakes with apparently extirpated Smallmouth also supported results from electrofishing

Smallmouth Project – Fish Pathology

- Working with the USFWS Lamar Fish Health Center to test fish for all replicating agents and common fish bacteria, with focus on Largemouth Bass Virus (LMBV) and Infectious Pancreatic Necrosis (IPN)
- All negative for everything so far with samples from Black Pond, Quinebaug Lake, Chamberlain Lake, Wyassup Lake, Shenipsit Lake, Mansfield Hollow, Lower Bolton Lake, Lake Pocotopaug, Bethany Lake, and Mashapaug Lake.
- Plan to include fish pathology testing as part of our monitoring program moving forward. Will focus testing on locations that may serve as source populations, have had LMBV historically (Gardner Lake and Amos Lake), and have heavy out of state fishing pressure (e.g., Candlewood)
- Results will be available at: <https://www.fws.gov/story/2022-08/wild-fish-health-survey-protecting-wild-fisheries>

Smallmouth Project - Potential for Hatcheries

- Tom Chairvolotti and Andrew Bade mapped out the potential to raise Smallmouth and/or Largemouth in the Burlington State Fish Hatchery
- It's feasible to meet fry stocking allocation goals for several waterbodies without disrupting trout production and with relatively little additional equipment (~30k for nest boxes, pond modifications, and feed)
- However, reports from other states and the literature suggest low success from stocking sub-adult Smallmouth. Raising adults is not feasible with current infrastructure
- So, transplanting adult Smallmouth will be tried first as this has been successful in other jurisdictions and is more cost-effective

Smallmouth Project – Fish Transplants

- Plan to transplant Smallmouth from high-density populations to extirpated waters
- Focus on water company properties as sources, but may also take from large public waterbodies with strong populations (e.g., Colebrook Reservoir)
- Primary goal of planned fall electrofishing in 2023 is to identify source locations and do fish health testing at them to set the stage for transplants
- May also transplant captured Largemouth to enhance CFWs

Smallmouth Project - Regulations

- Pursuing an extension of the Bull's Bridge Bass Management Area on the Housatonic River to the Massachusetts border
 - Largely thanks to the work of recently retired biologist Mike Humphries

Data Management

- Historical electrofishing data has been reformatted and is being used by staff again after staffing and data management changes that took place in 2018
- Tournament monitoring data are being analyzed again:
 - Both electronic reports and a planned return to in-person monitoring
 - Tournament reports to be included in public federal aid reports moving forward
- Improved scale-ageing workflow, focus, and data management
- Anticipate hiring a post-doc through UConn in early 2024 to improve availability of fish community data for use by external partners and the public

New Bass Fishing Opportunities

- Attempting to reintroduce Smallmouth Bass as mentioned earlier
- Worked with Department of Public Health on development of Bass Action Plan to advance conversation on opening closed reservoirs:
 - State is largely supportive all the way up the chain of command to the Attorney General – but ultimately need interest from water companies
 - DPH staff collaborating in developing recreational usage inventory at reservoirs and helping identify low-risk opportunities for expansion
 - Revisiting fish community sampling at several locations starting this fall

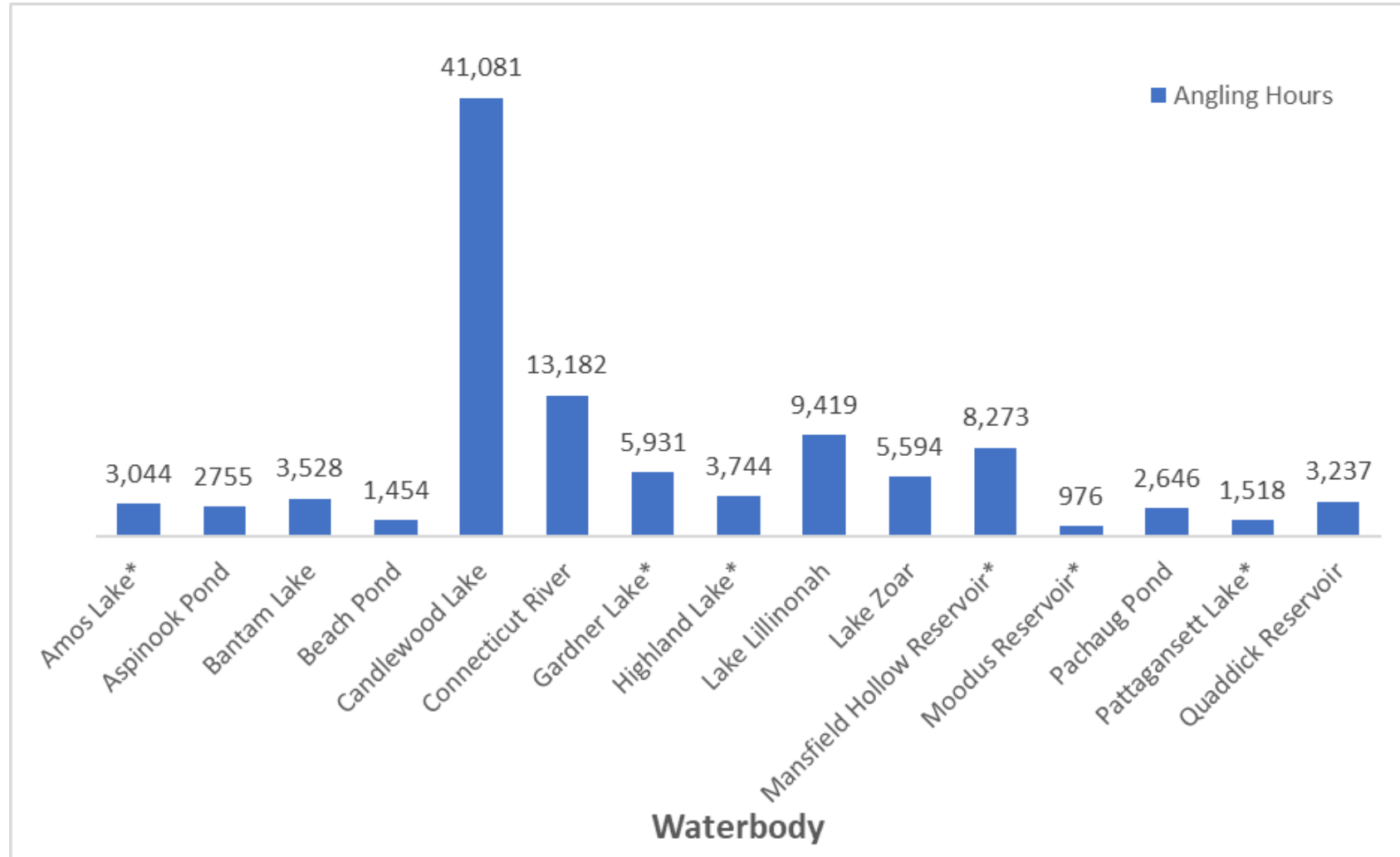
Bass Population and Habitat Monitoring

- Monitoring an average of ~50 waterbodies annually with electrofishing
- Division is continuing to assist in herbicide and drawdown permit reviews, with increased cooperation across Division programs
- Set up the Helix 12 units donated by CBN, have been using them on Candlewood and are designing sampling plans to use them for assessing fish habitat structures, doing habitat mapping, and forage fish assessments
- Bought a new dissolved oxygen meter and YSIs for continued water quality assessments

Bass Tournament Monitoring Plans

- New biologist Spencer Mallette taking lead on bass tournament permitting and monitoring. Shout out Bill Foreman!
- Making better use of electronic tournament reports
- In-person monitoring at high-usage waterbodies (e.g., Candlewood, Mansfield Hollow, Gardner)
 - Use data to develop population estimates using mark-recapture
 - Track size structure changes
- Make tournament data available to tournament organizers

Bass Tourny Effort 4/1/2022 – 3/31/2023



Bass Outreach

- This is an area where we have dropped the ball. . .
- Moving forward:
 - Spencer is developing the Bass Advisory Board (thank you for the idea, Dean!)
 - Will include likely members in decision process around structure, meeting times, etc.
 - Improve public data access
 - Lots of progress in making data internally accessible/usable, hiring post-doc in part to address this need

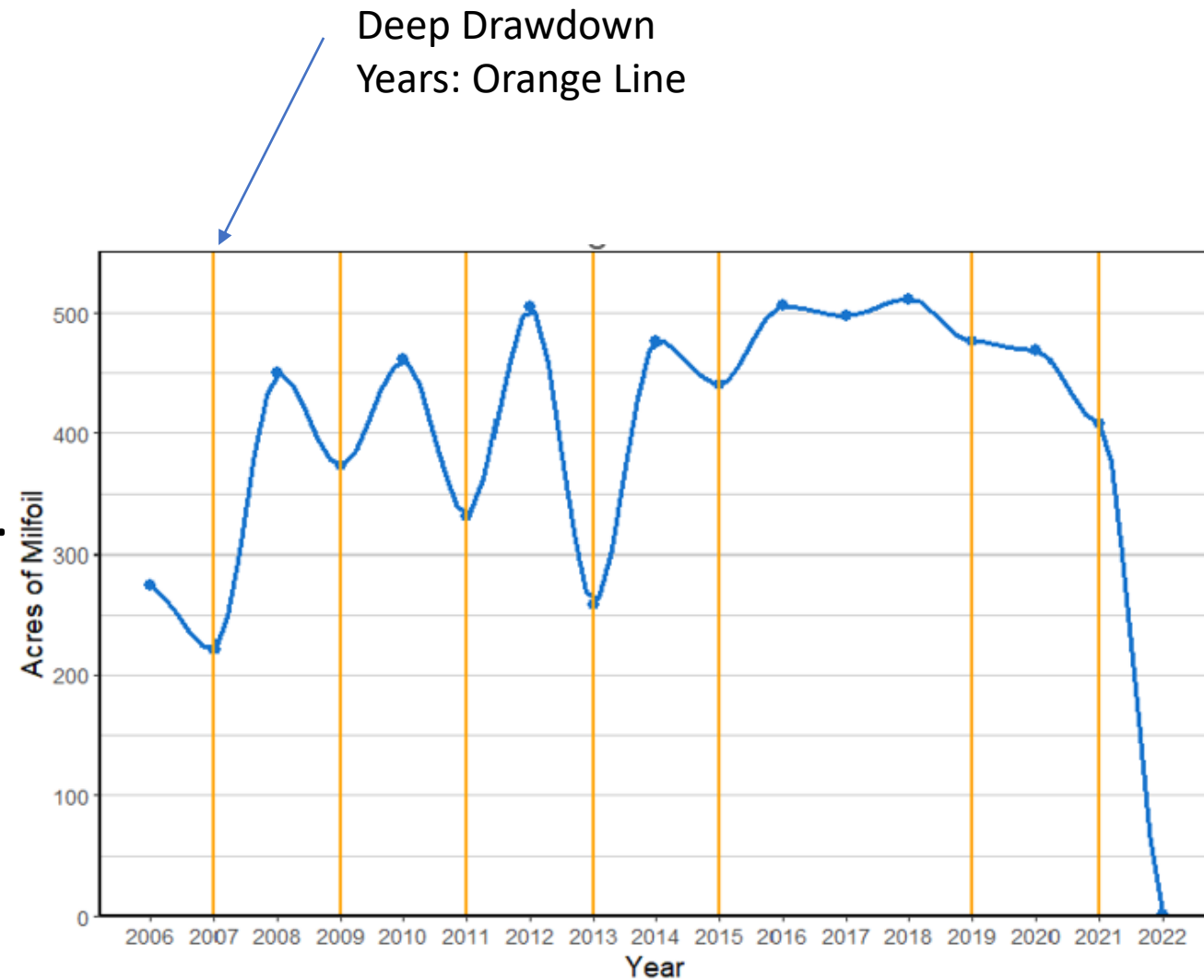
Candlewood History

- Candlewood Lake is 5,000+ acre reservoir owned by First Light Power and used for pumped storage hydropower.
- Eurasian Watermilfoil discovered in Candlewood in late 1970s.
- Dense beds established by 1983.
- Experimental voluntary drawdowns in 1983 and 1984 resulted in reduction in EWM biomass (Siver et al 1986).



History

- With guidance from Technical Advisory Guidance Committee voluntary biennial drawdown regime implemented, alternating deep and shallow drawdown years.
- In 2004 drawdown regime incorporated into new FERC License.
- By 2009 -2011 concerns that drawdowns were not providing same level of control.
- Additional control options evaluated



History: Enter the Grass Carp

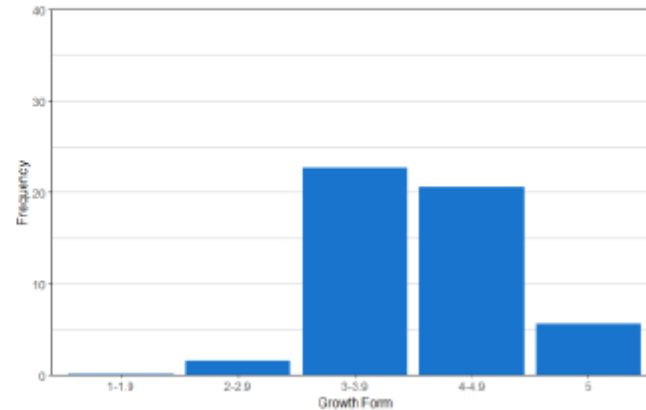
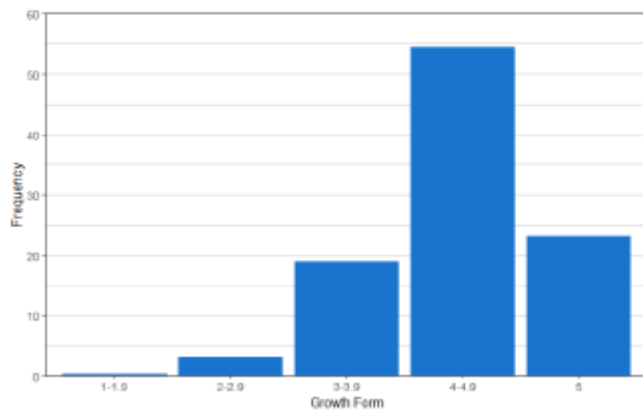
- Herbicides and Mechanical Harvesting not selected.
- Grass Carp preferred alternative
- Reg change, public hearing, permit issued.
- 3868 Carp Stocked in 2015
- 5035 Carp Stocked in 2017
- *For simplicity not considering Squantz Carp.



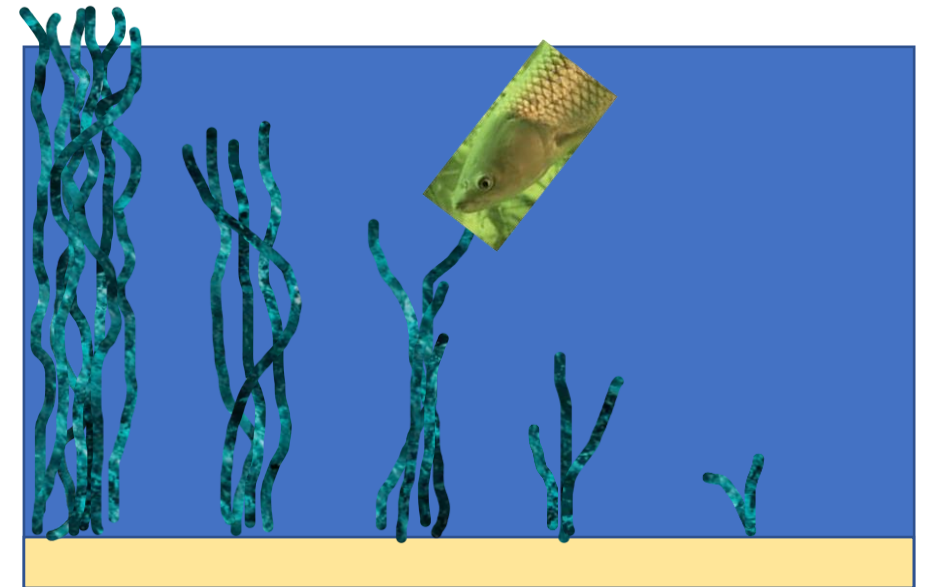
History: Post Stocking

- Acreage remained high, slight decline, and then sharp decline in 2022. Almost no vegetation observed in 2022.
- There were signs of decreased milfoil density: cropped down, stalks did not reach as high in water column.

Figure 1. *Myriophyllum spicatum* growth form frequencies in Candlewood Lake in 2020 (left) and 2021 (right).



Shorter Growth Form

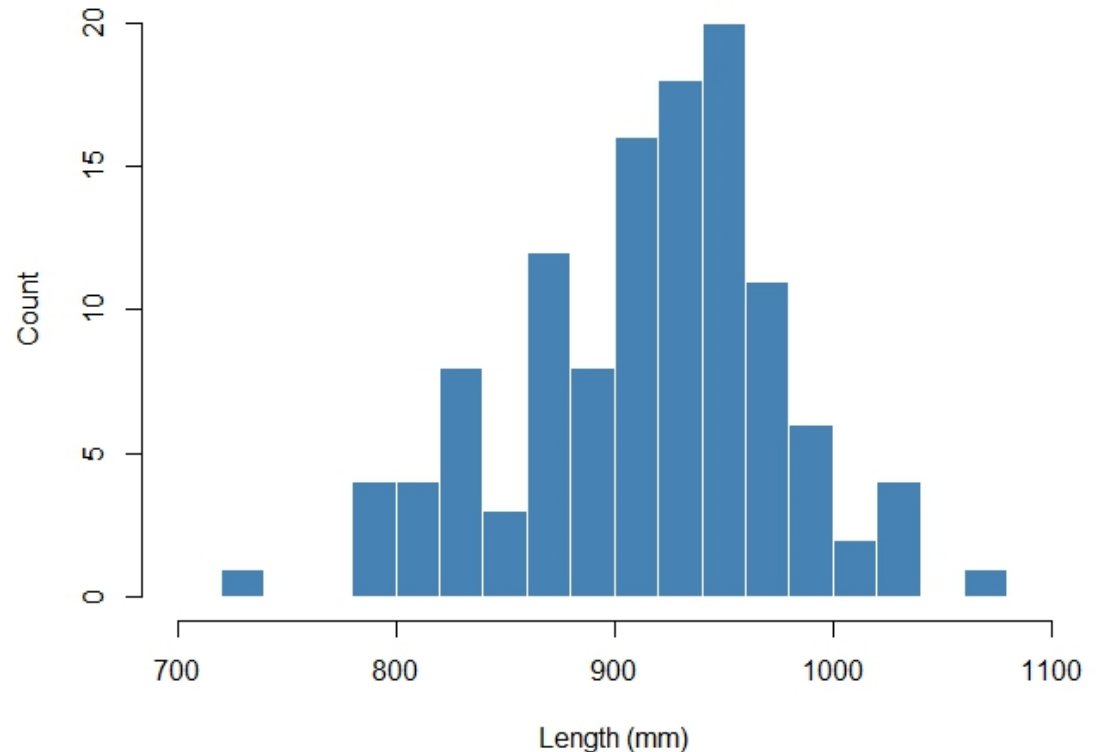


Triploid Grass Carp Removal

- Fisheries Division removed 118 TGC in three days in May using a unified fishing method approach (electrofishing plus gill nets)
- Lengths ranged 30-42 inches
- Plan to repeat in the fall



Triploid Grass Carp Length Distribution





Heritage Is

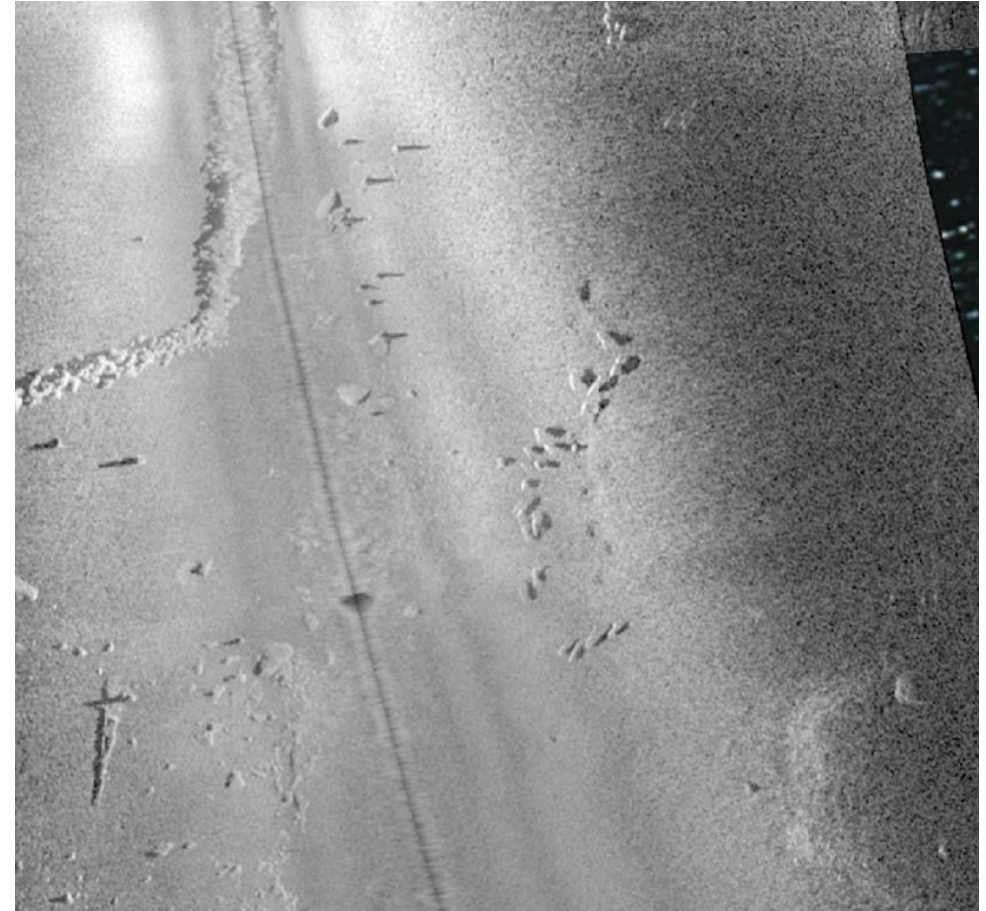
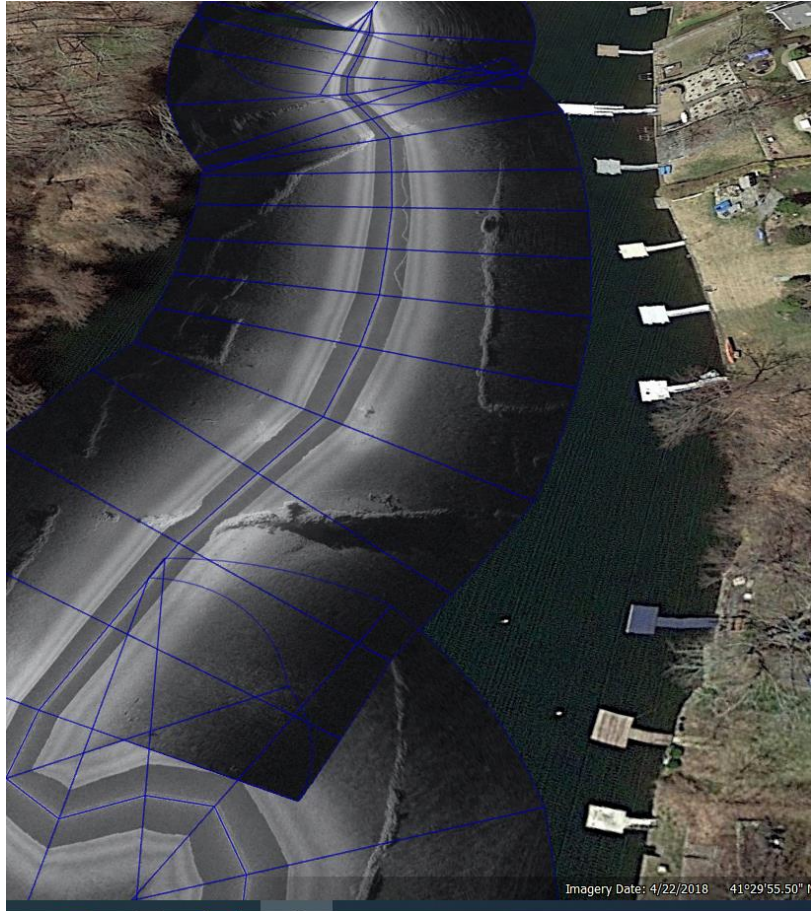


Mistr

Brook Ln

brook Ln

Sidescan Sonar Mapping Helped Remove TGC



TGC Removal by Angling

- Developed Scientific Collector's Permit approach to removing TGC
- Our sampling is effective but labor-intensive
- Permit available for review online



Connecticut
Department of Energy &
Environmental Protection

PERMIT TO COLLECT WILDLIFE FOR SCIENTIFIC & EDUCATIONAL PURPOSES

Under the authority of Connecticut General Statutes, Sections 26-60, and 26-57, this permit is hereby granted by the Department of Energy & Environmental Protection to:

Organization/ Institution:	Connecticut Department of Energy and Environmental Protection	860-490-0701
Permittee:	Andrew Bade	Work Phone
Department:	Fisheries Division	Home Telephone
Address:	79 Elm Street	andrew.bade@ct.gov
City, State, Zip Code:	Hartford, CT, 06106-5127	Email Contact

AUTHORIZED TO:

Species: Triploid Grass Carp (*Ctenopharyngodon idella*)

Location of Collection: Candlewood Lake and Squantz Pond

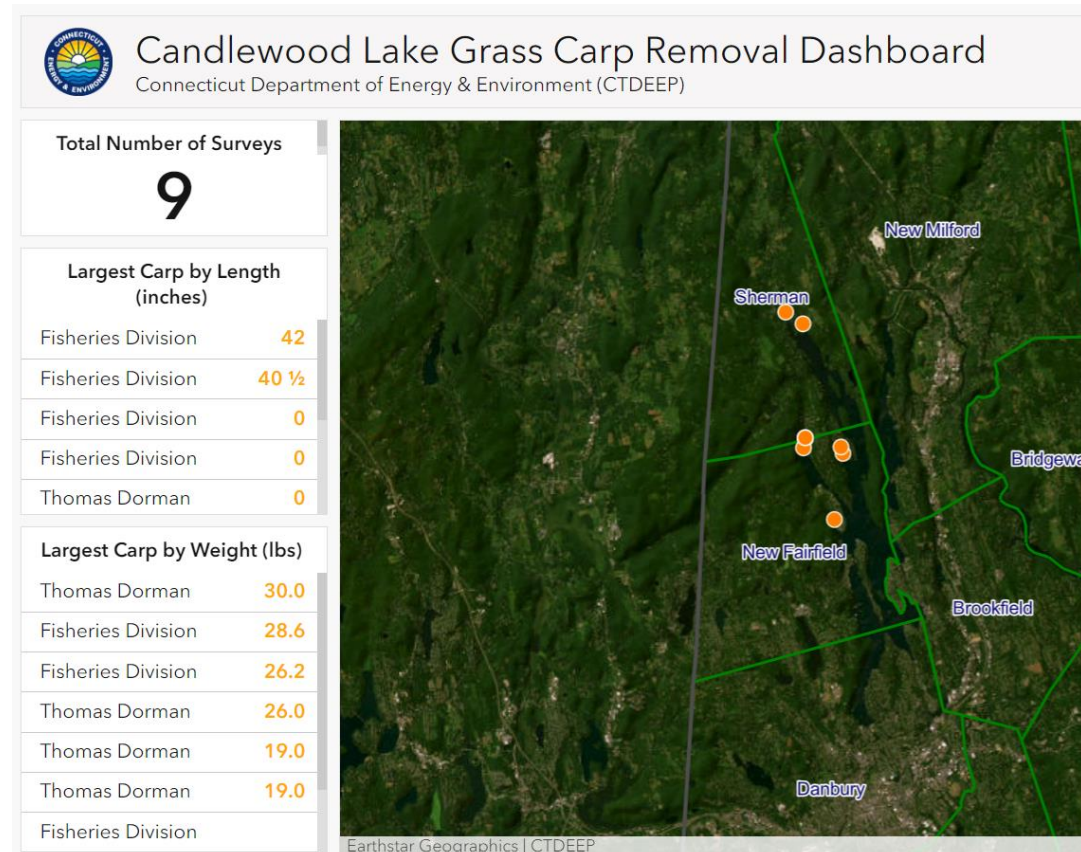
Activities authorized: Capture and euthanize up to **200** triploid grass carp using legal angling methods. Grass carp collected will be immediately and humanely euthanized via blunt force trauma, cervical separation, exsanguination, or cold shock. Guidance on how to euthanize carp is provided in Attachment A.

Subpermittees:

Subpermittees will include volunteers that have certified they will follow all conditions of this permit, the most current list of approved volunteers is maintained by Joseph Cassone (CT DEEP: joe.cassone@ct.gov) and Andrew Bade (CT DEEP: andrew.bade@ct.gov). Subpermittees must agree to all permit conditions and register using the form at: <https://survey123.arcgis.com/share/3024a8b385a848b8b2ae98a3f55ac8ae>

TGC Removal by Angling

- One-stop shop <https://portal.ct.gov/DEEP/Fishing/Triploid-Grass-Carp-Removal-from-Candlewood-Lake-and-Squantz-Pond>
 - Sign on as a subpermittee
 - Report your catches
 - View the dashboard
- Bowfishing currently not an allowable method
 - Open to modifying permit
- If you see TGC let us know!



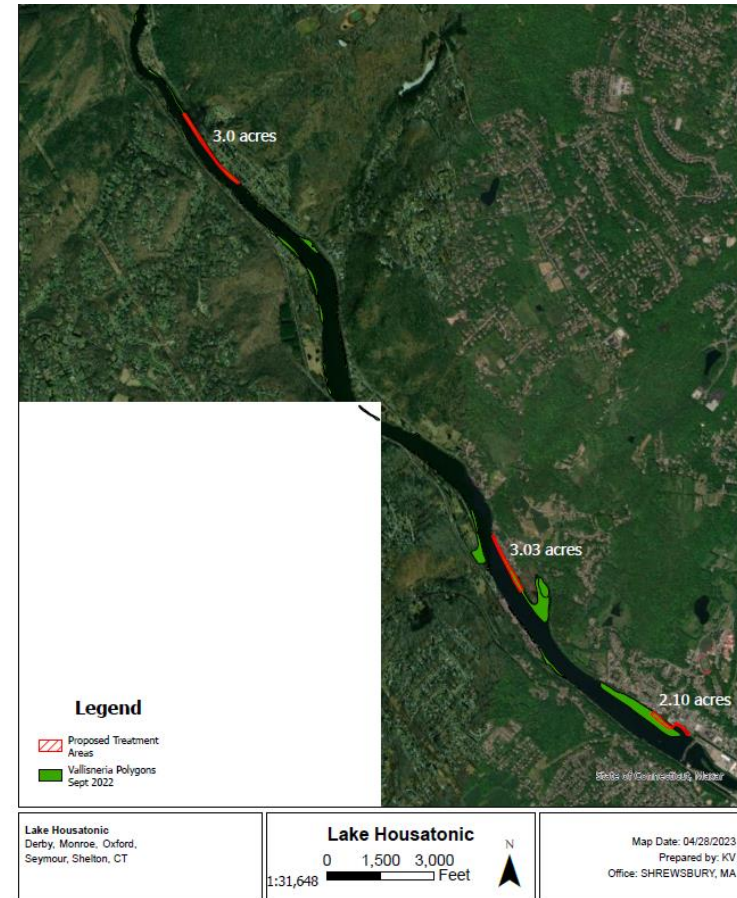
Herbicide Permitting Process

- Herbicide Permits are issued by the DEEP Pesticide Management Program.
- [Aquatic Pesticide Applications \(ct.gov\)](http://www.ct.gov)
- Fisheries Staff is consulted for input on permit conditions and recommendations on State Owned Waters or waters with a Fisheries Management Interest.
- Recommendations are rolled into permit conditions.



Herbicide Permitting Recommendations

- Request for pre and post treatment vegetation surveys: to provide recent info on the locations and extent of vegetation to be treated.
- Request that applications be limited to target areas of invasives.
- Recommend that 20-40% of the littoral zone remain as vegetation.
- Inquire about the type of herbicides used and try to steer to more targeted herbicides: ProcellaCor is a milfoil specific herbicide.
- Timing recommendations to avoid impacts to stocking.
- Review application rates against toxicity data, label rates, and consider impacts to forage (invertebrates, amphibians, and baitfish)
- Consider other factors on lake such as drawdowns.



Squantz Cove Boat Launch Update

- This project is led by the Boating Division
- More info at <https://portal.ct.gov/DEEP/Boating/Boat-Launches/Candlewood-Lake-Squantz-Cove--Boat-Launch>
- From the Navigation & Boating Infrastructure Unit of the Boating Division's Yolanda Cooley:
 - “The project is still in final design with the consultant. We’ve had a few obstacles to overcome with funding and staff. Hope to get the project back and running in the next few months.”
- Boating Division contact info:
 - deep.boating@ct.gov
 - 860-434-8638

Time for Discussion

- Spencer Mallette – Spencer.Mallette@ct.gov
- Joe Cassone – Joe.Cassone@ct.gov
- Andrew Bade – Andrew.Bade@ct.gov

- Big shout out to Noah Winslow who has been a huge help with creel surveys, advising on TGC removals, teaching us to use the Helix units, and more

