



Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Results of Aging Work Performed On Channel Catfish Captured From Lower Bolton Lake, Bolton/Vernon, Connecticut During Fall 2017



Seasonal Resource Assistant Chris Finch with a large Channel Catfish collected at Lower Bolton Lake, Bolton/Vernon in 2013. Photo by Seasonal Resource Assistant Eric Lindquist.

Report Completion: July 9, 2018
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Channel Catfish In Connecticut

- First introduced to CT in the early to mid-1900's.
- Naturalized populations found in large rivers, but not in lakes/ponds.
- CT DEEP Fisheries (FD) initiated an annual stocking program in 2007 to diversify angling opportunities.
- FD annually purchases and stocks commercially raised Channel Catfish throughout CT (Figure 1).

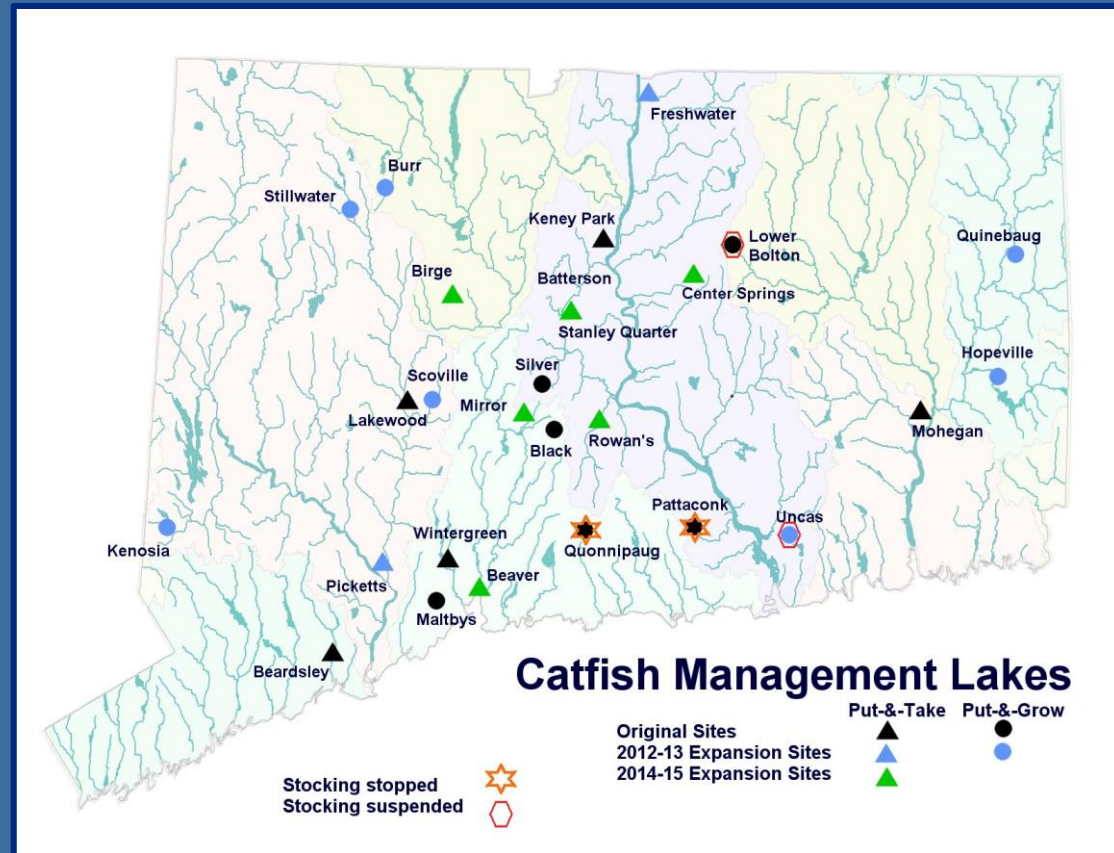


Figure 1. Locations of Channel Catfish Management Lakes in Connecticut.



Lower Bolton Lake Channel Catfish Stocking History

- Began in 2007; suspended after 2012.
- Yearling size (9-11 inch) Channel Catfish stocked in all years.

Year	Channel Catfish Stocked	Number Stocked Per Acre
2007*	2,836	16
2008	2,800	16
2009	2,800	16
2010	2,800	16
2011	2,800	16
2012**	2,667	15

**In 2007, 207 adult (14-18 inch) Channel Catfish were also stocked along with the yearlings, which equates to 1.2 adults per acre.*

*** After 2012 stocking was suspended because of concerns from residents living on Lower Bolton Lake that water quality was being adversely affected by the Channel Catfish.*



2017 Channel Catfish Hoop Netting



WHY: In response to a concern expressed by some of the residents living on Lower Bolton Lake regarding the possibility that Channel Catfish are reproducing naturally within the lake (i.e., reports were that small Channel Catfish were still evident in the lake).

Purpose: To capture and age small (less than 16 inch) Channel Catfish.

Rationale: To answer the question of “are there Channel Catfish in the lake that could be young enough to have been naturally spawned in the lake?”



2017 Channel Catfish Hoop Netting



WHEN: September 2017

HOW:

- 11 total individual nets.
 - 4 gang sets of 2 tandem nets.
 - 1 gang of 3 tandem nets.
- Nets fished for 7 days.
- 88 Channel Catfish were captured.



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2017 Channel Catfish Hoop Netting

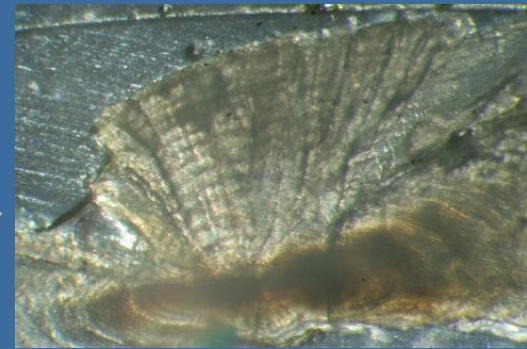
WHAT HAPPENED:

- Catch Rate of 1.14 fish/net-day.
- Length range of **14.1-23.2 inches**.
- Eight fish were **less than 16 inches** (range: 14.1-15.9 inches) and were retained for aging as they could be within the size range of fish naturally spawned in the lake.
- Seven of the fish were aged. One fish could not be aged due to broken spines. This fish was not the smallest fish.



Aging Fish

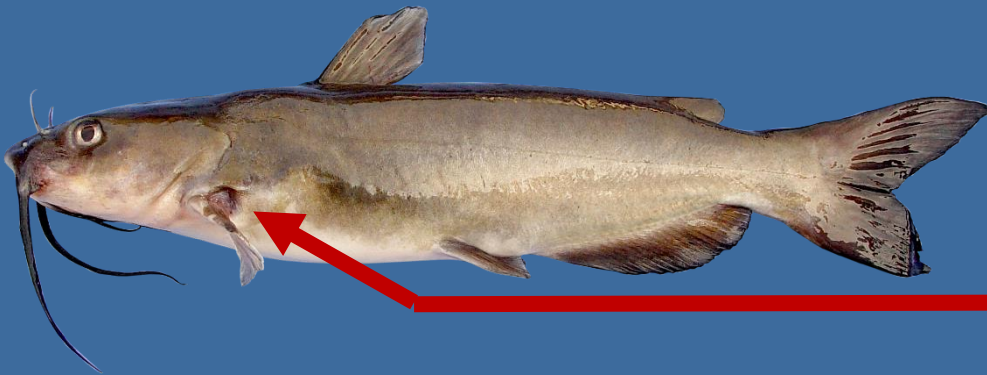
- Fish can be aged by counting the number of “Annuli” found on bony structures (like a ring on a tree).
- The structures used for aging fish include:
 - A. **Scales** (nonlethal procedure)
 - B. **Otoliths** (a small ear bone; lethal procedure to obtain)
 - C. **Pectoral spine(s)** (a nonlethal procedure)
- Catfish do not have scales



The Aging Process For Channel Catfish

Pectoral spines (what we used to age the 2017 Lower Bolton Channel Catfish)

- Processing is a very labor intensive process, the spine is sectioned with a saw, then polished repeatedly with sandpaper then mounted into a retention medium.
- Specialized equipment is needed to view the annular rings.
- Preferred over the otoliths as they are more robust.
- From past aging analysis of Connecticut Channel Catfish using spines and otoliths performed at Lower Bolton Lake, Bolton/Vernon and Silver Lake, Berlin/Meriden (Davis et al. 2016) no indications were found of substantial disagreement in the ages between these two different bony structures so spines were used for aging for the fish obtained in 2017.

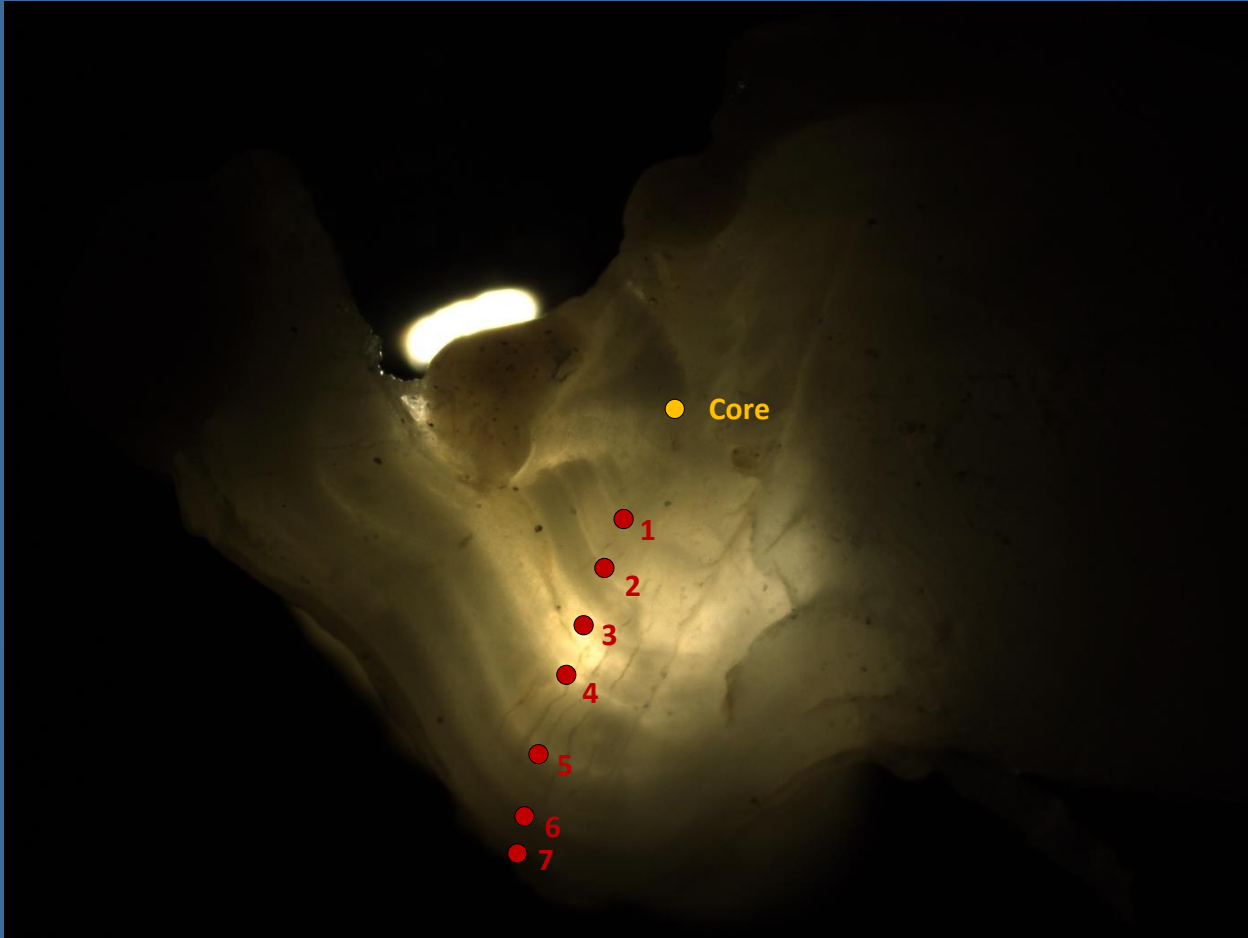


Sectioned and polished pectoral spine of a Lower Bolton Lake Channel Catfish captured in September 2017 viewed under a microscope.



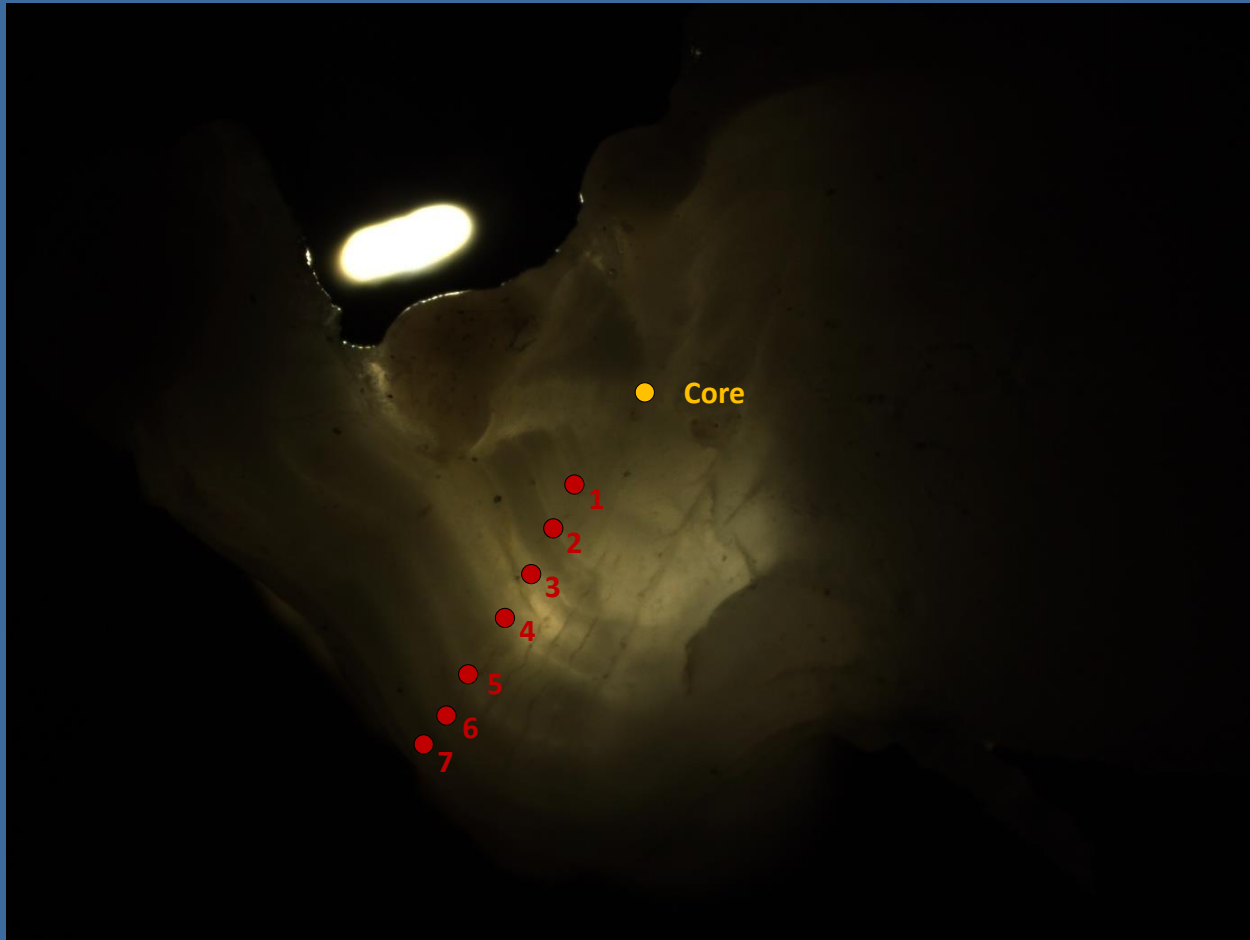
Aging Results: Smallest Sized Channel Catfish

- Fish Size = 14.1 inches. Age = 7 years old.



Aging Results: Largest Sized Channel Catfish

- Fish Size = 15.9 inches. Age = 7 years old.



Aging Results

- Seven Channel Catfish were successfully aged.
- All fish were 7 years old.

Length (inches)	Age (years)
14.1	7
14.2	7
15.0	7
15.2	7
15.2	Not able to age
15.5	7
15.6	7
15.9	7



Conclusions

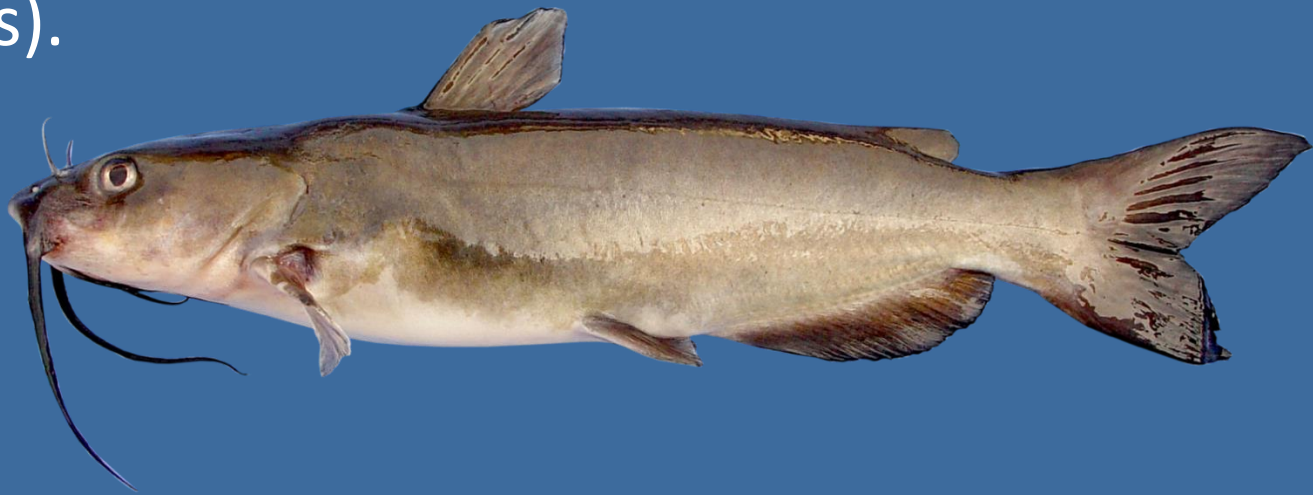
None of the fish retained for aging purposes were naturally spawned in the lake.

- The last stocking of yearling Channel Catfish occurred in 2012. Those fish stocked at that time were already one year old (hence the term “yearling”).
- For a Channel Catfish to have naturally spawned within Lower Bolton Lake it would have to be less than 5 years old.
- All fish were age 7 years old.



Conclusions

- The presence of some small Channel Catfish within Lower Bolton Lake suggests that growth may be slightly below-average, with respect to other northern latitude populations, but is not overly concerning. This could be due to inadequately sized forage and/or intraspecific competition (from higher than needed stocking densities).



Questions? Please Contact.....

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