

**Lake Champlain Fish and Wildlife Management Cooperative
Policy Committee Meeting
Meeting Minutes**

Date: August 23, 2017

Time: 10:00 a.m. – 4:00 p.m.

Location: Education Center, Kehoe Green Mountain Conservation Camp, Castleton, VT

Attendees

VTFWD: Louis Porter, Eric Palmer, Adam Miller, Kevin Kelsey, Chet Mackenzie, Bernie Pientka, Brian Chipman, Shawn Good

NYSDEC: Tony Wilkinson, Lance Durfey, Steve Hurst

USFWS: Wendi Weber, Bill Ardren, Steve Smith, Brad Young, B.J. Allaire, Henry Bouchard, Chris Smith, Andrew Milliken, Lowell Whitney

UVM: Ellen Marsden

LCBP: Meg Modley

1. Minutes – VTFWD’s turn – taken by Shawn Good.
2. Last meeting minutes (August 11, 2016) approved – no changes. Confirmed rotation for Chairperson of Policy Committee. Current Chair is VTFWD, one more year left. USFWS turn next. FYI: Future chair cycle follows this progression:

VTFWD	2017-2018
USFWS	2019-2020
NYSDEC	2021-2022

3. Agency Announcements and Budget Updates – Wendi: there’s some uncertainty with USFWS budget in near future. Louis: VTFWD facing a small budget rescission. Tony: NYSDEC budget is good. They’ve put in 14 million into hatchery system and looking to do some more in near future.
4. Louis Porter encouraged members of the Policy and Technical Committees to think more about Outreach. We should be informing and educating the public as often as possible, using good creative ways, about all the great work the various agencies do for fisheries research and management for Lake Champlain.

Annual Report Highlights

5. Bill Ardren – Report Overview. There’s been good progress on salmonid work with encouraging results. There were 500,000 smolt-equivalents stocked last year. All hatcheries are producing good quality fish. Documented natural reproduction of LKT and LLS for the first time since the 1970’s when they first started looking. There was a decrease in salmon returns to rivers probably due to low water levels in rivers in the fall of 2016; however, nearshore electrofishing results show good numbers in the lake. Winter and summer creels were conducted by VTFWD to update our understanding of angling effort and catch rates. Other exciting results: 3-5 times higher return rates for fish that came from feral egg collection compared to fish that originated from captive

broodstock. Four tributaries and 20 miles of rivers were treated in 2016 for sea lamprey control. Adult sea lamprey trapping occurred at 9 locations. Sea lamprey wounding rates have been near target objectives for last 3-4 years resulting in high quality salmonid fishing in the lake. VTFWD's muskellunge stocking efforts is a good example of cooperative efforts between NYSDEC and VTFWD for Champlain muskie restoration. Champlain is still a Top 5 bass destination in country and a popular recreational and tournament destination. There's been excellent eel recruitment in Champlain. Eel surveys have found lots of eels, and some smaller ones. Several new LCFTC subgroups have been formed: Strategic Plan Update Workgroup, Sauger Restoration Workgroup and Salmonid Assessment Workgroup (handout provided describing goals of Salmonid group). Salmonid workgroup results and progress will be included in LCFTC Annual Report.

Steve Hurst suggested the LCFTC incorporate more pointed information on whether we are making progress towards indicators and whether we are seeing success. It was also recommended that the Annual Reports be posted online, as they were some years ago. USFWS staff agreed to post LCFTC Annual Reports on their website going forward and include all previous reports as well. The group agreed to put out a joint press release to let the public know that these Annual Reports are available. The Annual Reports should also have a list of contacts on the main page so media can contact appropriate people in each agency for follow-up stories.

6. Brian Chipman – Salmonid assessment work update. Data has been collected from fish passage and trap facilities around the lake as well as tributary and nearshore electrofishing. Salmon runs were down slightly in 2016 at the Winooski and Hatchery Brook traps but still higher than the long-term average back to the mid 1990's. Lamoille and Otter Creek runs were also down but within the range of previous 4-5 years. Missisquoi River salmon stocking began in 2011 and a run is becoming established there as well. Lake levels were near record lows and river flows were also very low in the fall of 2016 during salmonid spawning migrations, which likely affected fish numbers in the run and the condition of the fish; fish showed signs of external fungal infections, which is quite rare in the wild. Salmonid electrofishing in Whallon and Willsboro bays had good numbers with large sizes represented. Brown trout and steelhead returns have been fairly steady but low over time compared to salmon. There was large increase in BNT returns in 2016. The long-term rates have been less than 20 fish collected in Hatchery Brook; in 2016 there were 85 collected. This could be a result of a recent change to the timing of BNT stocking – went back to spring stocking in 2015 instead of fall stocking. Spring stocking of BNT and monitoring will continue to see if trend continues. Lake trout numbers in assessments have remained very consistent over time.

Landlocked Atlantic Salmon feral and domestic evaluations. LLS were differentially marked with fin clips and stocked in multiple locations. Stocking was 50% of each origin. Returns (sampling) of feral-origin fish has increased over time, although angler returns (creel) of feral-origin fish in the lake fishery were slightly lower (46%) than domestic-origin LLS (54%). Chambers Creek and Magog strain steelhead evaluations were conducted. Five streams were stocked with differentially marked steelhead. Sampling efforts found that 54% of the fish were Chambers Creek origin, which also returned to creel in greater numbers overall compared to Magog strain steelhead. Seasonal differences were also observed – fall returns were mostly Chambers Creek strain while spring catches were slightly higher for Magog strain fish. This information could help managers develop fall tributary angling opportunities. Evaluations will continue for at least one more year.

7. River-run Salmon Restoration Update – Bill Ardren. Handout provided. Three different approaches to improving River Run Salmon. Hatchery improvements, river Improvements, and applied research.

For hatcheries, work has focused on improving broodlines by using returning feral fish. Two different salmon lots were held at White River NFH. One was treated with Vitamin B to improve survival, and the other was not treated to let natural selection take place for B1 deficiency losses. 5 of 17 families that were not treated survived. Using these survivors as broodstock in the future might act to increase genetic resistance to thiamine deficiency from foraging on alewife. River improvement work focused on why good numbers of fish return to Hatchery Brook, but much fewer return to the Winooski River. Research is being conducted on imprinting and homing, and how hatchery culture may affect this. For example, rearing fish in the hatchery on river water instead of well water for the last 3 months prior to stocking has increased returns 3 to 5 times. The Applied Research work has included collaboration with researchers from around the country, working on areas such as fluvial geomorphology and how natural stream process and river dynamics provides better spawning conditions than impacted river systems, working to understand how magnetic field maps built in to salmon when hatched tells them where to migrate to after smoltification, and how hatchery rearing around lots of metal can distort this magnetic map and affect out-migration success. Other research is focusing on the potential consequences of excluding precocious male contribution to genetic diversity by selecting only large mature males for gonad collection.

8. Sturgeon Assessment – Chet Mackenzie. VTFWD is developing a monitoring and assessment program using acoustic tagging to monitor fish movement and habitat use, and remote sensing to estimate abundance. Spawning site assessment can be difficult and inconsistent due to river conditions; lake assessment methods could be more effective. Acoustic tags (19 in Winooski, 2 in Lamoille and 1 in Otter) have been implanted in spawning sturgeon and tracked with portable and stationary receivers. Results show sturgeon congregate on the deltas off the mouth of the Lamoille and Winooski rivers. In winter months sturgeon congregate in a very small area on the Winooski River delta. An evaluation of using DIDSON sonar (remote sensing) to estimate abundance of sturgeon on Winooski delta is also being developed. The DIDSON sonar sensor can be towed upriver during spawning, or in the winter where sturgeon are concentrated in confined areas on the delta and the sidescan images can allow sturgeon to be counted. The Peterson Dam on the Lamoille River was built in 1948 and cut off sturgeon from accessing historic spawning grounds upriver. Hydraulic modeling work was done to assess existing habitat suitability below the Peterson Dam on the Lamoille River. The results concluded that there's abundant quality spawning habitat available, and no habitat improvement work is currently needed.
9. Sauger Restoration – NYSDEC developed a sauger management plan for NY in 2013 and included Lake Champlain. The St. Lawrence, Richelieu and upper Mississippi rivers were identified as potential sources for stocking Lake Champlain with sauger to restore the species. NYSDEC is currently searching for a regional hatchery that could raise sauger if an egg source can be found. NYSDEC staff visited Quebec to look for potential egg collection sites on Lac St. Pierre. Preliminary sampling collected 56 sauger for disease testing, and staff determined that no importation and border crossing issues would be encountered if the decision is made to import sauger eggs from Quebec. Disease testing found no diseases in the Quebec samples tested by the USFWS Lamar Fish Health Center. The Upper Mississippi River population is currently being used as an egg source for Wisconsin sauger stocking – that population has also been disease tested and cleared as a good source. Geographically, the Quebec population is closer and could be a better choice. Genetic work is being done on both populations, and are being tested against archived scale samples from Lake Champlain to determine the best source population. In Wisconsin, sauger are being used a glochidia host for T&E mussel species. It's not known if sauger served the same purpose in Lake Champlain. NYSDEC is writing a specific Champlain sauger management plan, which should be completed by late

winter or early spring. They've recently done a similar restoration on the Allegheny River which was very successful.

10. Federal Hatchery Updates – Henry Bouchard. Eisenhower NFH's role for Lake Champlain is smolt production for NY and fall fingerlings for Winooski River. The hatchery successfully met production targets for NY and VT in 2016. Some salmonid research is taking place on Eisenhower NHF such as the amino acid and homing studies. Eisenhower NFH is taking over some brook trout and lake trout production for VT to help meet Champlain-basin stocking needs. White River NFH facility rehabilitation was completed in the summer of 2016 following its destruction in 2011 from Tropical Storm Irene. White River NFH will hold landlocked Atlantic salmon and lake trout broodstock. There were some initial biosecurity concerns over egg movement from Lake Champlain to the Connecticut River basin, so fish were held in quarantine until tests came back negative. The fish reared from the initial egg transfer will serve as a basis for on-site broodstock development. Additionally, in February 2017 two years classes of Lake Champlain domestic LKT broodstock added to White River NFH to support the Great Lakes culture program. White River NFH is also cooperating on Vitamin B1 and magnetic map research in salmon. White River could also be a potential site for sauger culture for Champlain in cooperation with NYSDEC.

VT Hatchery Updates – Adam Miller. Cooperative BKT rearing at Eisenhower NFH was very much appreciated. VT is currently working on discharge issues at broodstock hatchery. Lake Trout don't provide eggs until they are 6-10 years of age, which means long term residency and high food consumption and waste discharge. Returning fish trap facility at Ed Weed FCS has been very successful and was built by department staff. Walleye culture in EWFCS's recirculation system has had great results. Department staff are evaluating the success of survival of intensive cultured walleye through differently OTC marks. There's been a number of energy efficiency projects at VTFWD fish hatcheries. In the last five years energy upgrades at EWFCS have saved \$80,000 and is producing enough energy to power all the homes on Grand Isle. The emission savings is equivalent to taking all the cars off VT roads for 1.5 years. The department is adding solar panels to two more culture facilities in the next two years which will almost completely cover all energy demands.

Kevin Kelsey (EWFCS) is experimenting with self-cleaning tanks to reduce the need for manual vacuuming and cleaning for the intensive walleye culture program. The Lake Champlain Walleye Association is funding the purchase a couple of these tanks.

NY Hatchery Updates – Steve Hurst. There have been massive changes recently in the NY hatchery system statewide. Aging systems and infrastructure are causing fish culture issues, but many facilities are state-listed as "historic sites", which restricts NY's ability to do renovations and improvements. Some hatcheries are working to improve predator exclusions and incorporate solutions for increased energy efficiency.

11. UVM Research Update – Ellen Marsden. Research topics include causeway habitat fragmentation and impacts to fish genetics, acoustic tracking of walleye and lake trout, cyanobacteria bloom impacts on fish, recruitment of wild lake trout in Lake Champlain, and food web modelling and comparison among lake segments.

Lake trout juvenile sampling. Initial juvenile trawling new captain with Great Lakes experience caught 350 juvenile lake trout, many of them unclipped. Trawling data from 2015, 2016 and 2017 shows an increasing percentage of unclipped juvenile LKT in Lake Champlain, well above the

expected margin of error for fin clipping. There's potentially five year-classes of unclipped wild LKT in the lake right now. Juvenile LKT diets shift across seasons and fish sizes. YOY LKT primarily eat mysids, decreasing through year 1 and year 2 after which they begin eating fish like sculpin and alewife. Ellen noted that in the 1990's Jason Stockwell repeated mysid assessment surveys from the 1970's and found that populations were way down. Ellen suggested that mysid assessments should be done again soon. Overall, it's unclear what has been limiting natural LKT reproduction – it could be lamprey predation, shifts in prey base or something else. Next steps are to develop index assessment work using Lake Ontario assessment protocols to monitor trends into the future.

12. Strategic Plan Update – Ellen Marsden. The last plan written in 2010 called for an update every 5 years, so it is past due. A committee has been convened and agency representatives will seek input from staff for updates as well as new additions such as muskellunge and sauger. A revised draft will be submitted for review in the spring of 2018. The final plan will be presented to the Policy Committee in late summer 2018. Steve Hurst asked whether the last strategic plan helped direct work on Lake Champlain. Past plans have purposely been vague to avoid tying agencies to specific tasks that might not be able to be accomplished due to staffing, budgets, differing priorities etc., and specific requirements and accountability for multiple agencies can be difficult to have specific expectations versus guiding principles. Steve Hurst said he believed a strategic plan should include specific goals that can help agencies justify resources and budget requests and also serve as a roadmap for accomplishing work and provide for the evaluation of efforts. Eric Palmer noted that the Lake Champlain strategic plan has evolved over time, transitioning from when the LCFTC focused almost entirely on lamprey control, to providing updates on what each agency is doing independently, to now looking to work more collaboratively when possible. A strategic plan can help move towards more cooperative and collaborative work with shared goals instead of just listing work that's being done by individual entities. The strategic plan should guide work and activities and help the policy makers determine whether progress is being made. Deliverables should be drafted from the Technical Committee level and reviewed by the Policy Committee members.

Action Item/Decision: The Management Committee will draft a charge for the FTC sub-committee working on the new strategic plan. Around the time of the NEAFWA meeting in April 2018 in Burlington VT, the next Policy Committee would like a “check-in” to see how the Strategic Plan is evolving.

13. Asian Clam field trip to Conservation Camp waterfront on Lake Bomoseen – led by Meg Modley. Meeting participants went to the lake to watch Meg collect Asian Clams from around the Conservation Camp dock. Discussions took place on control, outreach, and spread prevention.
14. Lamprey Control Update – Brad Young. Lamprey control and the status of salmonids in Lake Champlain has never been this good. Lamprey populations have been suppressed to the lowest levels ever, while salmonid survival, numbers, and age and size structure are up. Sturgeon recovery is also benefiting from lamprey control. Anglers are more satisfied the quality of fishing, and public acceptance of the use of lampricide is high. The Vermont state permitting process is much improved. 2017 is the first fall in 28 years where no lamprey control has been scheduled. Trapping efforts have taken place on 9 rivers. There have been no clear trends in lamprey trapping. The Morpion barrier in Quebec has been very successful. Larval assessments in treated rivers indicate great success. Larval populations have been reduced substantially (LaPlatte River 97% reduction, Stone Bridge Brook 100% reduction for example). Beaver Brook and Putnam Creek in NY were done as spring 2017 treatments. Beaver Brook was very successful but Putnam Creek is more challenging

due to subsurface hydrology which affects success. Surveys have discovered new larval populations established in Little Chazy River and Rea Brook, north of Plattsburg. These will be added to the rotation and treated in 2018 after completion of an Environmental Assessment. Morpion larval surveys are showing a steady decrease in densities over time and a trend to older larvae, meaning no new larval are being added to the system above the barrier. Budget Update – there's over \$1.2 million in GLFC Champlain account for sea lamprey control which could fund sea lamprey control through 2020. Currently, Lake Champlain gets appropriations of \$750,000 to \$825,000 per year through additions to GLFC budget. Sen. Leahy is also working with the Senate Appropriates Committee to add funds to the Fish and Wildlife Service budget in FY18. Combination treatments have reduced some treatment costs through a reduction in lampricide usage. A new mobile lab may be purchased with some of the money, as the current mobile lab is owned by NYSDEC and there's more need for its use in the Finger Lakes. Because of out-of-date trapping techniques and equipment, trapping hasn't been very successful, especially during spring high water floods. As a result, trapped rivers are now the biggest lamprey producers on Lake Champlain. New trapping design and materials will be experimented with to improve barriers resistance to flooding conditions, debris jams etc.

Toxicity Study – VT Dept. Health concerned with uncertainty and assumptions on TFM toxicity based on old information and data and wants it updated. Two approaches – can substantiate through weight of evidence and position statement from EPA. Second approach is a 6-month empirical toxicity study that will cost \$300,000 to \$600,000.

Future lamprey control plans will utilize the new geographically focused treatment cycle which will increase efficiency and cost savings. For 2018 there will be 8 river and 4 delta treatments on northwestern Lake Champlain on the NY side. Other lamprey-related work in the near future includes: writing a new Federal EA, conducting a human health risk assessment for TFM, upgrading four trapping sites, and conducting delta sonar assessments to identify substrate type and focus delta treatment areas.

15. Cormorant and Gull Management on Champlain – Andrew Milliken. Handout provided containing a Cormorant Control FAQ. Andrew updated the group on the status of the Environmental Assessment for Depredation. In May of 2016, the U.S. District Court for the District of Columbia canceled the cormorant depredation orders until the USFWS submits a new Environmental Assessment that's in compliance with the National Environmental Policy Act. The USFWS has been working with USDA's Wildlife services to develop the EA, with the primary scope being aquaculture and environmental impacts. The draft should be out in the early fall for public comments. There's some concern that the scope excludes impacts to free swimming fish populations. The Service anticipates formal stakeholder engagement to seek agreement on the biological, social, and economic significance of wild fish -cormorant interactions. This team represents an opportunity for NY and VT to provide input on Lake Champlain. The Policy Committee will discuss the draft EA more following the upcoming Flyway Meeting.
16. Invasive Species Updates – Meg Modley. Meg gave updates on AIS spread prevention and emerging threats. The Vermont statute for aquatic invasive species transport was amended this past legislative session. The new amendments now required boaters to remove drain plugs and drain all water from their vessels prior to leaving state waters. For AIS spread prevention, this is the 11th year of having boat stewards on Lake Champlain. Meg is open to working with state agencies to improve the program and data collection such as the type of boats being used, what launches have

the highest and lowest traffic, where boats coming from, what spread prevention methods boaters are taking, what waterbodies boaters were previously on etc. The surveys have discovered that NYSDEC's Ticonderoga boat ramp has the highest boat-arrival rate while VTFWD's Colchester Point boat ramp has the highest number of boats departing Lake Champlain.

17. Lake Champlain Basin Program 2017 Opportunities for Action – Meg Modley. The group discussed the importance of getting good information and outreach on Lake Champlain research out to the public. The Opportunities for Action Plan has four main sections: monitoring threats to critical habitats, preserving biodiversity, preventing the spread of AIS, and reducing AIS threats and pathways. Meg noted that the LCBP is very interested in supporting AIS research. The LCBP is working cooperatively with the USFWS on a salmon public outreach display, salmon in the classroom, and other topics. Meg offered to help the LCFTC with public dissemination of information.
18. Riparian and Wetland Habitat Restoration – Chris Smith. Handouts provided on riparian and wetland habitat restoration and aquatic connectivity. Chris provided an update on fish and wildlife habitat restoration in the Champlain Basin. There's been a lot of work, often partnering with NRCS to improve riparian buffers mainly on agricultural lands. For wetland habitat work, additional work not covered in the handout include water chestnut control on Lake Champlain and the installation of beaver baffles in the basin. Aquatic connectivity projects have focused on working with towns to identify priority structures for replacement to improve aquatic organism passage within the Champlain basin.
19. Information to Prioritize Habitat Restoration and Conservation across Champlain Basin – Andrew Milliken. Powerpoint presentation on topic was provided as PDF. Andrew provided an update and demonstration on work being conducted to prioritize habitat and conservation work at a regional landscape level using a new Conservation Atlas tool developed by the North Atlantic LCC. The atlas covers the entire Northeast Region and can be customized to be used on smaller scales including the Lake Champlain Basin, complimenting state-level data collections. There is now a specific gallery of maps and data for the Basin as part of the atlas. Andrew provided examples of different layers and conservation mapping for the Basin. The Atlas will be helpful for broad scale conservation planning.
20. Additional Agenda Items; Review Next Steps and Action Items

4:00 p.m. **Adjourn**

- 2:45 p.m. **Lake Champlain Basin Program 2017 Opportunities for Action**
Opportunities for Collaboration for Healthy Ecosystems *Meg Modley, All*
- 3:00 p.m. **Riparian and Wetland Habitat Restoration**
Fish and Wildlife Habitat Restoration in the Champlain Basin *Chris Smith (USFWS)*
- 3:15 p.m. **Information to Prioritize Habitat Restoration and Conservation across Champlain Basin**
Available Regional Information and Tools, Conservation Planning Atlas Gallery for Lake Champlain Basin
Salmon habitat model *Andrew Milliken*
- 3:30 p.m. **Additional Agenda Items; Review Next Steps and Action Items** *Policy Committee*
- 4:00 p.m. **Adjourn**