



SUMMARY— 2014 MUSKELLUNGE PROGRAM SUMMIT
The Makoy Center, 5462 N. Center, Hilliard, Ohio 43026
25 January 2014

Prepared by: Kevin Page (kevin.page@dnr.state.oh.us)

ATTENDEES: DIVISION OF WILDLIFE— Korey Brown (D1), Ed Lewis (D2), Phil Hillman and Curt Wagner (D3), Mike Greenlee (D4), Bruce Bakenhaster (Kincaid State Fish Hatchery), Kevin Page (IFRE), Nick Jamison (Fish Administration), Rich Carter (Fish Administration), Scott Zody (Division Chief), Mike Budzik (Division Chief, retired).

ANGLING CLUBS—Paul Anderson (OH Huskie Muskie Club), Jim Buss (Muskie Inc. #16 Three Rivers), Les Childress (Muskie Inc. #56 SOMA), Elmer Heyob (Muskie Inc. #41 Central Ohio), Cliff Honeycutt (Muskie Inc. #41 Central Ohio), Fred Lederer (OH Huskie Muskie Club), Chuck McKnight (OH Huskie Muskie Club), Mike Mordas (Muskie Inc. #19 Akron/Canton), Bob Sisson (Muskie Inc. #41 Central Ohio), Rob VanGorder (Muskie Inc. #41 Central Ohio)

MEETING OBJECTIVES:

1. Meet-and-Greet with club officers and Division of Wildlife fisheries staff
2. Provide updates on the muskie program
3. Discuss other items as interest and time allow in an open forum

Summit overview (Page)

Kevin welcomed everyone to the meeting, thanked everyone for attending, particularly given the inclement weather. He also thanked Rob VanGorder for assisting in the organization of the summit and providing refreshments (donated by Central Ohio MI). Kevin also thanked the show's organizers, Gregg Thomas and Tony Grant, for continuing the tradition of holding the Muskie Summit in conjunction with the Muskie Show. Kevin provided the following ground rules for the meeting:

- Respect the opinions of others – expect differences
- Share this information with your club members
- Convey the thoughts of your club members – we could not invite everyone
- Understand that there are muskie anglers that are not represented by clubs

Introductions & Open Forum Topics (Page)

Kevin began with an around the room introduction. Next, attendees shared the following topics to be discussed during the open forum:

- A question was raised regarding the excise tax on vendors for sport fish restoration (excise taxes on equipment through the USFWS Federal Aid in Sport fish Restoration Program; 720 tax form). Nick Jamison and Scott Zody provided an overview on how the excise taxes on equipment are used to support Division projects (Federal Aid) and stressed the importance of those funds. The question was raised on whether vendors and anglers can contribute to offset costs that may not be fully reimbursed by the federal aid program. They can and do; contributions by anglers (volunteering and Minnow Fund as examples) do help to offset those costs.

Welcome (Zody and Carter)

Division of Wildlife Chief Scott Zody welcomed anglers and offered the Division's appreciation for anglers making the commitment to come to the summit in support of the Muskellunge Program. He acknowledged the obvious dedication, patience, and passion exhibited by muskie anglers. It is

because of them and other anglers that we raised 45 million fish last year and exceeded our quota of muskellunge by 1,600 fish. Rich Carter followed by noting that this year marked eight years of the muskie summit and expressed his gratitude for these opportunities to gather with anglers and discuss fishing and fish management. He reminded anglers that it is their purchasing of equipment and tackle that supports our fisheries programs. Carter also thanked the hatchery and district biologists as they do a great job of protecting and sustaining our fish resources. We serve approximately 1.3 million anglers which equates to a 3 billion dollar industry that supports 25,000 jobs. He finished by stating that the Division views anglers as customers, but also as partners in the management of fisheries and their commitment is greatly appreciated.

Production/Stocking Update (Jamison)

- There are six ODNR Division of Wildlife hatcheries across the state that produce at least 35 million fish annually. The two cool water hatcheries responsible for muskellunge production are Kincaid and London State Fish Hatcheries.
- The annual production goal is 20,000 advanced fingerlings with a total length target of 10 – 11” at stocking. The two main factors limiting production are cool water and space.
- In 2013, there were 21,493 advanced fingerlings stocked into muskellunge program reservoirs. Due to the availability of surplus muskellunge, Pymatuning Lake was also stocked. The nine program reservoirs stocked annually include: Caesar Creek, East Fork, Clear Fork, Alum Creek, Leesville, Piedmont, West Branch, Salt Fork, and Milton.
- Last year, egg collection took place on Leesville from April 10-19. Division of Wildlife staff gathered 13.5 quarts of muskellunge eggs. These eggs were delivered to London State Fish Hatchery for rearing.
- Once muskellunge eggs are placed in jars, they hatch in approximately 14 days (depending on water temperature). After the hatch, muskellunge fry are placed in nursery troughs where the fry absorb their yolk sacs over the next 10 days. After yolk sac absorption, muskellunge are fed brine shrimp for a few days and then converted to a diet of carp fry. Carp fry are produced at London State Fish Hatchery using wild brood stock collected each year from Rocky Fork.
- After a few days of carp fry, the muskellunge are moved to raceways and converted to a diet of fathead minnows. The muskellunge are fed larger minnows as they grow. It is very important to progress to a larger size fathead minnows as muskellunge grow larger.
- By July 4th, muskellunge are moved from indoor raceways to outdoor ponds. Muskellunge will be fed thousands of pounds of minnows (and some golden shiners) before they are stocked from the middle to the end of September.
- The London State Fish Hatchery capital improvement project is in the final stages of planning. If all goes well, the bid package should go out this spring. Improvements at London include: upgraded electrical service, new back-up generator, new electrical service to select ponds, upgraded alarm systems, and a new mixing tank. This project will also include thousands of feet of directional boring, which is necessary to install new conduit and wire.

Discussion

- *Question:* Do we still get eggs from Kentucky? *Response (Bakenhaster):* Yes. Most of the fish grown at Kincaid are provided by the Kentucky Department of Fish and Wildlife Resources. 100,000 muskellunge eggs were acquired.

Minnow Fund Update (Heyob)

As the Minnow Fund coordinator, Elmer expressed his appreciation for the contributions made this year. The Minnow Fund tournament at Salt Fork doubled the contributions to the Minnow Fund; one individual who wished to remain anonymous contributed a substantial amount. Also, the Eastern Muskie Alliance graciously contributed its remaining funds upon closing its chapter. We did not receive a Becker Grant this year, but we have already reapplied this year and should receive a response in April. If we are awarded a Becker Grant, Elmer suggested that it be used to purchase tags. We did however receive a \$2,000 contribution from the National MI. Elmer discussed the importance of contributing to the fund as the cost of minnows has grown, particularly if muskie are to be held for longer in support of the tagging project. Also, tags will cost around 20 thousand dollars each of the next 9 years for the muskie tagging project. Elmer provided a review of the equipment purchased with the Minnow Fund. This year the clubs purchased 8,000 tags and 15 handheld tag readers.

Elmer requested that club members please update and provide current contacts for new officers. It becomes a challenge to make sure details from him and the Division are reaching the right people. Also, please acknowledge emails with a response to make sure they are reaching anglers.

Elmer wrapped up his talk by encouraging anglers to contribute and remember that there is no bank account for these monies— he works with the Division and clubs to coordinate the purchase of needed equipment with pledged contributions.

Discussion

- *Comment:* Some vendors at the show are donating a portion of their proceeds to the Minnow Fund.
- *Comment:* Mike Sandridge is now the new Chapter 19 president.

MAL Update (Wagner)

Curt provided an analysis of catches and catch rates since 2008.

- 14,107 Ohio-caught muskies reported into MAL as of 12/31/2013.
- Range of 187 (2013) to 360 (2009) unique reporting anglers each year.
- 2009 spike in Ohio muskies reported and unique reporting anglers, decline since.
- A shift towards relatively more “avid” anglers reporting into the MAL over time – proportion of anglers reporting 1 or 2 muskies in a given year is decreasing and proportion of anglers reporting 10+ muskies in a given year is increasing.
- Introduced first attempt to move beyond simply raw number of muskies reported. Presented the variable: # of muskies caught per unique reporting angler.
 - This can be calculated year by year with reservoirs combined, or
 - Calculated by reservoir for each year to compare across reservoirs and years
 - An attempt to standardize the reported number by some measure of effort exerted*
- In an effort to refine the variable # of muskies per unique angler, we created a category of angler entitled “avid” angler. To be categorized as an avid angler, a person had to have reported ≥ 5 muskies from a given reservoir in a given year.
- Consequently, created a new variable: # of muskies caught per unique reporting avid angler
- In recent years, Caesar Creek, Leesville, and Milton had the highest average number of muskies caught per unique reporting avid angler.
- In recent years, Clearfork and Salt Fork had the lowest average number of muskies caught per unique reporting avid angler.

- 2013 was the first year that users within the MAL could self-identify themselves as “Reporting All Trips” within their user profile – this reporting of all hours of effort allows for the calculation of true catch rates: number of muskies caught per hour (CPH) by trip, by angler, by reservoir, etc.
- 82 users self-identified themselves as “Reporting All Trips” AND entered trip data into the 2013 MAL.
- Of these anglers, only 56% reported any trips where muskies weren’t caught; the other 44% always had at least one muskie caught for the trips they reported into the MAL = possible under-reporting of “busted” (or no-muskies-caught) trips, thus inflating the estimate of catch per effort (muskies caught per hour).
- Estimated catch per effort (muskies caught per hour) averaged 0.13 across all reservoirs during 2013 as calculated from the “Reporting all trips” subset of anglers in the MAL.
 - 0.16 muskies per hour translates into about 6 hours fishing effort per muskie
 - Estimates from other fisheries include:
 - Minnesota = 0.03 (1990s)
 - Ontario = 0.07 (1979-2004)
 - North Carolina = 0.04 (1980s)
 - Estimates from Ohio Division of Wildlife creel surveys (2008-2013; May-July) = 0.06
- Peak effort was in May, June, July.
- Catch rates for “Huskies”, those muskies ≥ 42 ”, were highest in March and December (cooler months).
- Alum Creek, Milton, Leesville, and West Branch were highest among muskie program reservoirs for overall catch rates (all sizes of muskies combined).
- Alum Creek, Caesar Creek, and Piedmont were highest among muskie program reservoir for catch rates of “huskie” sized fish.
- 2013 Catch per hour from the “reporting all trips” anglers correlated strongly with 2013 reservoir estimates of # muskies caught per unique reporting avid angler – suggesting that this latter measure is a useful tool for comparing across years and reservoirs in the absence of true catch-per-effort data.
- Anglers are encouraged to self-identify themselves in the MAL as “Reporting all trips” and urged to take the time to report even those trips where fish aren’t caught – this is very valuable data from a fisheries management perspective. Thanks to those who have already done this in 2013!
- On the average, 1 out of 10 muskies ≥ 30 ” caught are “huskies”.
- In Caesar Creek, approximately 1 out of 4 muskies ≥ 30 ” caught are “huskies”.
- Across the six years of MAL and all muskie program reservoirs, approximately 33% of the muskies reported into the MAL were caught in July and August, the “hot months”.
- The muskies caught during these “hot months” of July and August average 2” longer than those muskies caught in the remaining 10 months.
- Collectively, these prior two observations point to the need to further investigate the possible fishery consequences of post-release mortality during warm weather.
- Lastly, but most importantly, the Ohio Division of Wildlife realizes and maintains that the MAL a tool requested by and established for the muskie angler to track catches. Hopefully, this data analysis exercise demonstrates some of the ways that Fisheries Managers can “shave” information from this angler tool to gain useful insights to direct and measure fisheries management activities. Thank you muskie anglers!

Discussion

- *Comment:* There are at least 56% of “all trip” anglers that appear dedicated to reporting all trips, which should provide useful data. *Response:* Curt absolutely agreed, however it would be helpful to encourage more people to report all their trips, especially those who indicated that they would.
- *Comment:* Changes in reporting may also be related to people not wanting to give away their spots, or shifting effort from one place to another to where the bite is hot.
- *Comment:* All trippers may be casual, avid, and “super anglers”.
- *Comment:* Phil Hillman explained that cold water coming out of Berlin is likely the reason for an exceptionally high proportion of catches from Milton during the hot months.

Escapement/Tagging Study (Page)

Kevin provided an update of the muskie study.

- Kevin provided a review of why this study is important and what we hope to garner from the data: estimates of rates of survival, catch, release, harvest, and escapement.
- While the catch reports provided critical data, tagging should give us more information about other muskie life history dynamics.
- The ultimate goal is to identify ways of improving fishing by better understanding muskie dynamics in our reservoirs.
- Kevin reminded anglers of the important role they play in reporting tagged fish.
- Previous work has focused on developing the study and conducting preliminary testing to make sure we can tag efficiently and with high survival.
- 2013 marked the implementation of the study.
- Kevin illustrated how the automated tag readers were installed within spillways and showed pictures of the installation at Alum Creek as an example. Kevin also provided pictures of the Salt Fork installation and noted how this installation was different because of the need for a solar array to power the reader.
- Approximately 8,500 fish were tagged with PIT (internal) and Floy (external) tags and stocked into study reservoirs (Alum Creek, Clearfork, Leesville, and Salt Fork).
- The number of tagged fish per hour was high and each tagging event only took a few hours to complete.
- Survival of tagged fish was very high (Alum Creek = 93%; Clearfork = 76%; Leesville = 95%; Salt Fork = 85%). The lower survival at Clearfork was likely due to the fact that some fish had been transported from Kincaid SFH prior to tagging, and the added stress induced extra mortality.
- Comparison of the survival of tagged and untagged fish showed no difference in survival, suggesting that all mortality is related to handling and stocking and not tagging.
- To date, no fish have been recorded on the automated readers, but three fish were caught and reported by anglers shortly after stocking. While this is frustrating, it may be that this is a very real result; other studies have shown that larger fish are the ones that typically leave the reservoir. It also may be that if fish have left the reservoir, they simply have yet to cross the antenna and detected. There is evidence that muskie tend to congregate below the dam after high water events rather than moving immediately downstream with the flow. Kevin stressed that based on conversations with the manufacturer and other researchers that have used similar systems, our reader systems are well built and have good read ranges.
- Kevin thanked the angler clubs for their donations of time and funds in support of this project.

Discussion

- *Question:* Will external tags be given a different color each year? *Response:* Yes. For each year the tag will consist of a different color to allow for cohort recognition.
- *Question:* Are there plans to stock the remaining program reservoirs with externally tagged muskie? *Response:* We are going to evaluate the readability of external tags implanted in fish currently held at London SFH. These tags are manufactured with a different covering that may allow for the easy removal of algae and thereby increase the readability of tag numbers. The previous tags were made of vinyl and algae grew on them readily. They also did not have a plastic covering to protect the tag numbers from being rubbed off during algae removal. After we have evaluated these new tags, we will revisit the idea of tagging other muskie; however this would incur more expense.
- *Question:* Have you tried testing these readers? Have you run a tag through them like a fish to make sure they are working? *Response:* Yes. We have tested them frequently; moving tags through the detection zone similar to a fish (manually and using a tag attached to a stick to float a tag over an antenna). We are also planning to attach a tag to lure and use a rod and reel to move the lure through the read zones like a fish. We are also installing a second reader within the Alum Creek spillway and possibly downstream of the Clearfork dam to enhance detection and evaluate detection rates. It should be noted however that there are limits to the readers. If a fish moves during high water **outside of the read range**, they can be missed. However, we believe that we should be able to detect a fish with high probability if it enters the detection zone.
- *Comment:* Anglers have reported that they have seen tagged muskie in the Alum Creek spillway, but the readers have not picked them up. *Response:* The power to the Alum Creek reader was inadvertently shut off by a city worker shortly after stocking and the reader was not functioning during a critical high water event. It is highly likely that if those fish moved out shortly after tagging, we missed them. We encourage anglers to contact us anytime they hear of or witness something like that. We could investigate and collect those fish, record their numbers, and release them to see if they are eventually detected by the reader.
- *Question:* Are there any plans to alert anglers to the tagged muskie using the fishing regulations book? *Response:* This has been discussed and we need to follow up with determining if that is feasible. We are also looking into providing signage at access sites and possibly spillway areas.
- *Comment:* Kevin gave a webinar on the Muskellunge Program. Anyone interested can view it on the web. *Response:* The webinar can be found at <http://www.youtube.com/watch?v=sT63xKkfVWU>

Open Forum

A period for open comments was provided for interaction between Division staff and muskie club members/anglers.

- *Comment:* The Minnow Fund tournament at Salt Fork conflicted with the MI Chapter challenge. There was much discussion on how that can be remedied. Club members agreed that it should be easy to fix and it was considered a topic to discuss among clubs at a later date.

Closing Remarks (Carter and Budzik)

Carter conveyed that the DOW appreciates the interest, interaction, and participation of the muskie club members and anglers. Mike Budzik added the importance of collaboration among anglers and the Division. Mike also encouraged anglers to never be afraid to communicate with the Division, even those in administration.

CONTACT INFORMATION:

Kevin Page, Fisheries Biologist, Inland Fisheries
Research Unit; 10517 Canal Road, Hebron,
Ohio 43025; Tel: (740) 928-7034x222; E-mail:
kevin.page@dnr.state.oh.us

Curt Wagner, Fisheries Biologist, District 3; 912
Portage Lakes Drive, Akron, Ohio 44319; Tel:
(330) 245-3018; E-mail:
curt.wagner@dnr.state.oh.us

Phil Hillman, Fisheries Management Supervisor,
District 3; 912 Portage Lakes Drive, Akron,
Ohio 44319; E-mail:
phil.hillman@dnr.state.oh.us

Ed Lewis, Fish Biologist, District 2; 952 Lima
Avenue, Findlay, Ohio 45840; Tel: (419) 422-
5000; E-mail: Ed.Lewis@dnr.state.oh.us

Mike Greenlee, Fish Management Supervisor,
District 4; 360 East State Street, Athens, Ohio
45701; Tel: (740) 589-9944; E-mail: mike.
greenlee@dnr.state.oh.us

Scott Hale, Inland Fisheries Program
Administrator, Central Office; 2045 Morse
Road, Building G; E-mail:
scott.hale@dnr.state.oh.us

Korey Brown, District 1 manager; 1500 Dublin
Road, Columbus, Ohio 43215; Tel: (614) 644-
3925; E-mail: Korey.Brown@dnr.state.oh.us

Nick Jamison, Hatchery Program Administrator,
Central Office; 2045 Morse Road, Building G;
E-mail: tim.parret@dnr.state.oh.us

Deb Walters, Fish Management Supervisor,
District 5; 1076 Old Springfield Pike, Xenia,
Ohio 45385; Tel: (937) 372-9261; E-mail:
deb.walters@dnr.state.oh.us