



Illinois Department of Natural Resources

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To: **Illinois Lake Michigan anglers and other concerned stakeholders**
From: **Mike McClelland, Fish Chief**
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This newsletter covers information from field sampling activities during 2019 that were provided by our Lake Michigan Program (LMP) biologists as well as other Lake Michigan fishery management agencies. Many of our LMP fishery reports can be found on the Lake Michigan pages of the fishillinois.org website along with specific information on stocking sites and numbers. Sport fish creel and other Lake Michigan research reports from the Illinois Natural History Survey (INHS) are available on UIUC's Ideals.illinois.edu website. Following are topics of interest to those who fish in the Illinois waters of Lake Michigan.

New Salmon and Trout Stocking Targets for 2020

During summer 2019, the Lake Michigan Committee adopted new salmon and trout stocking targets for the four states. The new targets include lakewide increases in stocking for Chinook Salmon, Brown Trout, Rainbow Trout, and Coho Salmon, and a reduction in Lake Trout stocking at the Mid-Lake Reef in 2021. Increased stocking was considered by managers after favorable results were obtained from the most recent Predator-Prey Ratio estimate of Chinook Salmon and Alewife biomass. Associated auxiliary indicators also were positive showing large fish in the angler harvest and fall weir returns.

The changes specific to Illinois are an increase in Chinook Salmon stocking from 150,000 to 180,000 fingerlings and the addition of 25,000 Skamania-strain Rainbow Trout. Other species remain at previous stocking levels: Coho Salmon 300,000; Brown Trout 110,000; Arlee-strain Rainbow Trout 60,000; and Lake Trout 120,000. The additional Rainbow Trout will be stocked at North Point Marina, bringing the total of Skamania-strain Rainbow Trout stocked in Illinois waters to 75,000.

DNR is working cooperatively with Westrec Marinas to add angler access at North Point Marina. We also continue using the stocking tube at various locations to deliver fish from the stocking truck into the water. In the past few years, we have found that using the tube is less stressful on the fish than traditional stocking methods. Ideally, this equates to better survival for our stocked fish and better returns.

Alewife Abundance Remains Low in Lake Michigan

Forage fish assessments are conducted by the USGS Great Lakes Science Center. Two lakewide surveys are conducted annually – a bottom trawl survey with multiple tows at seven sample stations (trawl depths from 30 to 508 feet) and an acoustics/mid-water trawl survey sampling at multiple transect locations around the lake in waters 33 to 787 feet deep. The lakewide estimates of forage fish abundance and biomass (weight), including Alewife, derived from these surveys are used by the Lake Michigan Technical Committee to estimate recruitment of Alewife and other forage species and assess the potential impacts of stocked and natural salmon and trout on the forage community. From the bottom trawl

survey, the estimated lakewide density of age-1 and older Alewife was 0.06 pounds per acre, a decrease from 2018. Biomass of age-1 and older Alewife also declined in the acoustic survey and the estimated year class strength of age-0 Alewife in 2019 was below the long-term average. It is important to note that these two assessment methods sample different areas of the water column and differ in their ability to sample age-0 fish. Estimates from both surveys are incorporated into a lakewide model of Alewife abundance for management purposes.

Illinois Sport Harvest Declines Despite Increases in Fishing Effort

Total harvest of salmon and trout in Illinois waters declined by 5% between 2018 and 2019 counter to an increase in effort (angler hours) for both sport (+19%) and charter (+2%) anglers. We also noted changes to the composition of the catch. The most notable differences were that both charter (-15%) and sport (-13%) harvest of Coho Salmon dropped between 2018 and 2019. Harvest of Rainbow Trout increased for sport (+82%) and did not change for charters. Sport angler harvest of Lake Trout increased by 54% and charter harvest increased by 17% for this species. Chinook Salmon harvest by sport anglers declined (-49%) but harvest by charter boat anglers increased (+4%). Our multi-species salmon and trout fishery continues to provide good fishing opportunities despite natural fluctuations in individual species abundances in Illinois waters.

Sport harvest of Yellow Perch in 2019 (9,617 fish) decreased (-41%) compared to 2018 (16,229 fish) despite similar effort during April-September. Yellow Perch harvest over this 6-month period has been approximately 10,000 fish since 2015. However, anglers harvested an additional estimated 69,612 Yellow Perch during October 2018 through February 2019 and released a reported 500,000 Yellow Perch. Most (80-90%) sport-caught Yellow Perch were from the 2015 and 2016 year-classes which showed moderate (2016) to very good (2015) recruitment to the fishery as young-of-the-year in IDNR beach seine assessments.

Overall Yellow Perch Abundance Remains Low; Samples dominated by 2015- and 2016-Year Classes

While gill net catches of adult Yellow Perch (average = 7 perch per 100 feet of net) remained low at our two annual sampling sites, 2019 catches were the highest since 2013. We like to see a perch population comprised of multiple year classes including older, larger individuals that anglers prefer and those that may have higher reproductive success. It was encouraging that the 2019 catch was made up of primarily age-3 (45%) and age-4 (46%) Yellow Perch.

Yellow Perch seining in 2019 yielded the third consecutive poor catch of young-of-year, including a catch of no young-of-year perch in 2018. Inconsistent natural recruitment, as documented in IDNR seine and gill net surveys and the INHS angler creel survey, continues to be an important factor preventing sustained population growth and abundance of the Yellow Perch population in southern Lake Michigan.

Interesting information from New Coded-wire Tag Study of Rainbow Trout

The U.S. FWS Great Lakes Fish Tagging and Recovery Lab began marking Rainbow Trout for the States in 2017 as part of a lakewide study of fish movements and natural recruitment in Lake Michigan. Coded-wire tags have been implanted in juvenile Arlee-strain and Skamania-strain (steelhead) Rainbow Trout at our Jake Wolf hatchery. Tags were recovered from eight Rainbow Trout in the fall by IDNR electrofishing at four harbors, three of which were stocking locations. The tags are not site specific but are different by strain. Seven of the eight Rainbow Trout were Skamania-strain and one was Arlee-strain. Past studies have shown that Arlees are typically caught by anglers earlier in the season than Skamania and there is a greater tendency for Skamania to be caught in the fall. Of interesting note was the large size-at-age of the sampled fish. The 1-year old Rainbow Trout (Arlee) was 22 inches long; the six 2-year old Skamania were 26 to 29 inches in length. Tagging of Rainbow Trout is expected to continue through 2021 with data

from recaptures continuing through at least 2025.

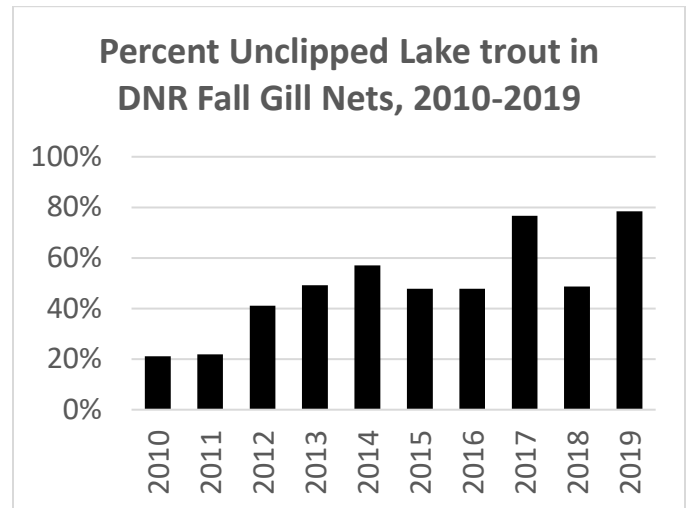
Marking and Tagging of Other Trout and Salmon Continues

Chinook Salmon were marked with an adipose fin clip by U.S. FWS at Jake Wolf Hatchery. Marking of Chinook Salmon enables fishery managers to monitor natural recruitment and estimate impacts on the forage base. Chinook Salmon no longer receive a coded-wire tag as the costs of tags and extraction were shifted to the Rainbow Trout study. From data collected in 2014-2015 on Chinook Salmon by U.S. FWS biotechnicians, we find that Illinois anglers catch 61% natural Chinook Salmon during April-August with the remainder coming from Wisconsin (22%), Michigan (7%), Lake Huron (4%), and Indiana and Illinois (3% each).

In addition, Coho Salmon were fin-clipped by Salmon Unlimited again last year as part of a study to monitor their survival and movements. Special thanks go out to all the anglers, charter captains, and Salmon Unlimited of Illinois members who have been instrumental in the collection of biological data and tags that make these studies a success.

Lake Trout Natural Recruitment at Newly Mapped Reefs

Lake Trout without a fin clip are being caught more frequently in Illinois waters and the U.S. FWS reports that they constituted 37% of Lake Trout caught out of our northern ports during summer 2019. All lake trout stocked in lakes Michigan and Huron receive a fin clip and coded-wire tag to designate them as hatchery-origin fish. The largest proportion of Lake Michigan's unmarked spawning Lake Trout sampled in fall are in Illinois waters (>50% of sampled spawners annually since 2013). Smaller percentages of unclipped fish are being sampled as you move north through the lake (~25% Midlake Refuge; 4% Northern Refuge).



Researchers from the Illinois Natural History Survey have been mapping the bathymetry of offshore reef structures in Illinois waters. These reef maps (available at www.Ifishillinois.org) are then used by IDNR to sample spawning Lake Trout in the fall. In addition to biannual sampling of Julian's and Waukegan reefs, DNR sampled the R4 in 2018 and Lake Bluff (10 mile) Reef in 2019.

Healthy Bass Populations Present in Illinois' Lake Michigan Nearshore

From IDNR's annual summer harbors electrofishing surveys, we see that Smallmouth Bass abundance remains stable and abundance of Largemouth Bass is declining at some sites. Bass age-1 through age-13 represented a wide range of sizes. Quality size Smallmouth Bass (≥ 11 inches) and Largemouth Bass (≥ 12 inch) made up over 75% of our samples. A higher proportion of larger Smallmouth Bass were seen (18% at Memorable Size; ≥ 17 inches) compared to Largemouth Bass, the largest of which was 19 inches. Body weight-length relationships for both species showed bass to be in good condition and not limited by available food. Diet analysis suggested bass are taking advantage of round goby presence in the nearshore. Of note from last fall was the angler catch and release of the Illinois State record Smallmouth Bass from Monroe Harbor. The record fish weighed 7 pounds and 3 ounces and measured 22 $\frac{1}{4}$ inches long.