

## Lake Michigan Stocking Options for 2018 and 2019



Since the 2016 decision to reduce Chinook salmon stocking to balance predator and prey numbers in Lake Michigan, public feedback has continuously asked if other species could be reduced in place of Chinook salmon. We were not prepared to have those discussions last year and are ready to consider other species changes for 2018 and 2019. While developing the [Draft Lake Michigan Fishery Management Plan](#), we also heard that we need to consider what species we stock and how many based on Lake Michigan Habitat and less about spreading each species around the lake equally. That concept really made sense especially at a time when we are reducing stocking to match a new carrying capacity in Lake Michigan with less productivity.

The concept of [Zonal Management](#) became a tactic within the Management Plan and has received positive reviews so far. Within Zonal Management we would prioritize management (i.e. stocking, regulations, and habitat protection and improvement) based on habitat, nutrient inputs, and climatic conditions of the lake. It would also provide a platform for local areas to promote their fisheries based on their habitat and the species that thrive there.

The stocking options presented in this document are a step closer to Zonal Management by reducing some species, moving others, and increasing stocking in locations that are appropriate. These options for the 2018 and 2019 stocking years will only cover brown trout, coho salmon, lake trout and Chinook salmon. Any option that reduces other species will provide predator room for more Chinook salmon stocking. However, fish diets and prey fish consumption are not equal. Chinook salmon grow faster and consume more alewife than other species. For example, just one Chinook salmon eats the same as 2.4 steelhead. The following equivalents will be used to adjust Chinook salmon stocking based on changes in other species:

<b>Species</b>	<b>Number of fish equivalent to one (1) Chinook salmon</b>
Chinook salmon	1.00
Coho salmon	3.20
Lake trout	2.30
Steelhead	2.40
Brown trout	2.20

Any changes to Chinook salmon stocking can be implemented in 2018; however, changes to brown trout, coho salmon, and lake trout will not be implemented until 2019.

Chinook salmon are in the hatchery for less than 6 months while other species are in the hatchery for up to 18 months.

**Brown Trout**

Brown trout stocking adds to a diverse fishery in Lake Michigan. The fishery is mostly an early spring fishery with the odd brown trout caught throughout the season. It is a very expensive fish to stock (\$258 per fish harvested in 2016) and in recent years has produced an improved fishery with some ports doing better than most. Impediments include warm water, lack of habitat structure at some ports, and predation of stocked fish. Wisconsin stocks at a higher rate (30,000 to 50,000 per port) and has good brown trout fishing, especially in ports with structure. The west side of the lake typically has more favorable temperatures throughout the year too. To maximize survival and to create destination brown trout fisheries, brown trout stocking should be concentrated to areas with structure and deep water closer to shore. The options are 1) status quo or same as 2017; 2) stocking same number and move some brown trout to northern ports; 3) reduce stocking by 50,000; 4) reduce stocking by 100,000; and 5) reduce stocking by 200,000. With each option that reduces brown trout stocking, proportionally more Chinook salmon could be stocked.

Below are some options to consider for brown trout stocking:

Site	Option 1	Option 2	Option 3	Option 4	Option 5
Bark River	22,000	22,000	22,000	0	0
Manistique	10,000	10,000	10,000	0	0
Big Bay De Noc - Hallsteads	28,500	28,500	28,500	0	0
Little Bay De Noc	20,000	20,000	20,000	0	0
Menominee	17,500	17,500	17,500	0	0
Petoskey	20,000	20,000	20,000	20,000	0
East Grand Traverse	15,000	15,000	15,000	30,000	0
Leland	20,000	20,000	20,000	20,000	0
Glen Arbor	15,000	15,000	15,000	0	0
Platte Bay	30,000	30,000	38,000	70,000	70,000
Frankfort	46,000	68,000	70,000	81,000	76,000
Arcadia	15,000	0	0	0	0
Manistee	30,000	70,000	70,000	75,000	70,000
Ludington	56,000	110,000	110,000	110,000	90,000
Pentwater	19,000	0	0	0	0
White Lake	19,000	0	0	0	0
Muskegon	19,000	0	0	0	0
Grand River	15,000	20,000	0	0	0
Holland	24,000	20,000	0	0	0
Saugatuck	19,000	0	0	0	0
South Haven	8,000	0	0	0	0

St. Joseph	19,000	20,000	0	0	0
New Buffalo	19,000	0	0	0	0
<b>Total</b>	506,000	506,000	456,000	406,000	306,000

### ***Coho Salmon***

Coho salmon stocking has remained relatively stable for 50 years. There has been some movement of fish in the Grand River system to increase survival, and this has resulted in better fishing. Coho salmon are becoming more important in the fishery, especially when Chinook salmon numbers are down. The average cost was \$47 per fish harvested in 2016. They can produce fall fisheries in ports and rivers that either don't have or are limited in wild Chinook salmon runs. Stocking changes should consider moving stocking sites downstream and increasing ports to the south where there is a lack of wild production. The main risk to consider is how many coho salmon need to be stocked in Platte River to maintain broodstock for Michigan and other states. The options are 1) status quo or same as 2017; 2) move coho downstream in the Grand river; 3) Reduce Platte River by 50,000 and stock Saugatuck; 4) Reduce Platte by 50,000 and move 30,000 out of the St. Joe River and stock both Saugatuck and Muskegon (Indiana is increasing yearling Coho stocking in the St. Joe so there should be similar total numbers in the St. Joe as in 2017); 5) Reduce Platte River by 75,000 and stock Saugatuck, Muskegon, and increase Escanaba.

Below are some options to consider for Coho Stocking:

<b>Site</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>	<b>Option 5</b>
Escanaba River	26,259	26,259	26,259	26,259	51,259
Boardman River	87,530	87,530	87,530	87,530	87,530
Platte River	800,000	800,000	750,000	750,000	725,000
Manistee River	87,530	87,530	87,530	87,530	87,530
Sable River	43,765	43,765	43,765	43,765	43,765
Muskegon	0	0	0	40,000	40,000
Grand River (Lansing)	50,000	50,000	50,000	50,000	50,000
Grand River (Lyons)	200,719	100,719	100,719	100,719	100,719
Rogue River	25,000	35,000	35,000	35,000	35,000
Grand River (Ada)	0	90,000	90,000	90,000	90,000
Saugatuck	0	0	50,000	40,000	40,000
St. Joe River (Berrien Springs)	131,295	131,295	131,295	101,295	101,295
Galien River	21,883	21,883	21,883	21,883	21,883
<b>Total</b>	1,473,981	1,473,981	1,473,981	1,473,981	1,473,981

## **Lake Trout**

Lake trout stocking creates both nearshore and offshore fishing opportunities and is required to meet rehabilitation goals. Anglers have vocalized their preference to catch salmon and steelhead while recognizing the value of lake trout in a diverse fishery. Now that Lake Michigan has less capacity to sustain prey, anglers would like to see lake trout managed appropriately based on available prey. Lake trout stocking is prioritized in Lake Michigan based on the [implementation strategy for lake trout rehabilitation](#).

The strategy established first priority stocking areas, which are necessary for rehabilitation goals, and second priority stocking areas that are established to create nearshore fisheries. Nearshore fisheries in most cases can be maintained with stocking of 30,000 to 40,000 yearling lake trout in areas that lack natural reproduction. High natural reproduction areas may be stocked with less. The first priority stocking areas are West Beaver Reef Complex, East Beaver Reef Complex, and Charlevoix Reef Complex. The remaining stocking sites from Elk Rapids to Ludington are second priority areas and are being considered for stocking reductions. Any changes to lake trout stocking will also need approval from the Lake Michigan Committee and the Technical Fish Committee (Treaty of 1836 – 2000 Consent Decree). The options are 1) status quo; 2) reduce 120,000; 3) reduce 180,000; 4) reduce by 380,000.

Below are some options to consider for lake trout:

<b>Site</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>
W.Beaver Complex	480,000	480,000	480,000	480,000
East Beaver Complex	600,000	600,000	600,000	600,000
Charlevoix Complex	360,000	360,000	360,000	360,000
Elk Rapids	50,000	50,000	50,000	30,000
Torch Lake outlet	50,000	50,000	50,000	30,000
Old Mission	80,000	80,000	80,000	30,000
GTB Shoal	60,000	60,000	60,000	30,000
Ingalls Point	50,000	50,000	50,000	30,000
Lee's Reef	50,000	50,000	50,000	30,000
Greilickville or Reef	60,000	0	0	0
Good Harbor	100,000	70,000	40,000	30,000
Point Betsie	100,000	70,000	40,000	30,000
Portage Lake	40,000	40,000	40,000	30,000
Ludington	40,000	40,000	40,000	30,000
Grand Haven	0	0	0	0
Holland	0	0	0	0
St. Joseph	0	0	0	0
<b>Total</b>	<b>2,120,000</b>	<b>2,000,000</b>	<b>1,940,000</b>	<b>1,740,000</b>

### **Chinook Salmon**

Chinook salmon stocking has decreased since 1999 to balance predator and prey numbers and due to an increase in natural reproduction making up more of the fishery (at least 50%). Stocking is necessary to maintain the Little Manistee River broodstock and fisheries in areas that lack natural reproduction. Chinook salmon are relatively inexpensive to stock with a cost of \$3.70 per fish harvested in the lake in 2016. Stocking options are based on the number of predator equivalents available from brown trout and lake trout stocking reductions. The options are 1) status quo; 2) increase 76,000; 3) increase 144,000; 4) increase 230,000. Pulse stocking will continue to be implemented with an every other year stocking plan.

Below are some options to consider for Chinook salmon:

Site	Option 1		Option 2		Option 3		Option 4	
	2018	2019	2018	2019	2018	2019	2018	2019
Escanaba								30,000
Manistique	33,334		60,000		60,000		70,000	
Medusa		50,000		70,000		80,000		80,000
Boardman	50,000		50,000		80,000		80,000	
Manistee River								
Little Manistee River	180,000	180,000	180,000	180,000	180,000	180,000	210,000	210,000
Big Sable River				25,000		25,000		40,000
Muskegon River				25,000		25,000		25,000
Grand Haven		50,000		50,000		84,000		90,000
Holland			36,000		40,000		40,000	
Black River	33,333		40,000		60,000		80,000	
Saugatuck	33,333		40,000		54,000		80,000	
St. Joseph		50,000		56,000		80,000		85,000
<b>Total</b>	330,000	330,000	406,000	406,000	474,000	474,000	560,000	560,000

If you have comments on these stocking options, please send them by Friday, December 8, 2017 to:

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