

**ATTACHMENT A**

**TO**

**AUGUST 1, 2017, TRIBAL COMMENTS**

**ON**

**DYNAMIC RISK ALTERNATIVES ANALYSIS**

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MICHIGAN

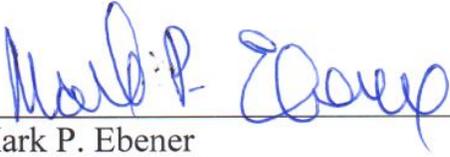
NATIONAL WILDLIFE FEDERATION,	)	
	)	
Plaintiff,	)	
	)	Case No. 2:16-cv-11727
v.	)	
	)	Hon. Mark A. Goldsmith,
ADMINISTRATOR OF THE PIPELINE	)	District Judge
AND HAZARDOUS MATERIALS	)	
SAFETY ADMINISTRATION,	)	Hon. R. Steven Whalen,
	)	Magistrate Judge
Defendant.	)	
_____	)	

**Declaration of Mark P. Ebener**

Mark P. Ebener, being duly sworn, states that he is competent to testify to the matters stated and that the following statements are made on personal knowledge regarding facts that would be admissible in evidence:

1. Declarant states that he is employed as the Fishery Assessment Biologist for the Inter-Tribal Fisheries and Assessment Program ("ITFAP") of the Chippewa Ottawa Resource Authority ("CORA"); that he has a bachelor of science (1977) and masters degree (1980) in Fisheries Management from the University of Wisconsin-Stevens Point; and that he has been employed by Native American Inter-Tribal Natural Resource Agencies as a Great Lakes Fishery Biologist for 35 years. (The details are on the attached document which is incorporated by reference.)
2. Attached to this notarized document is a document also titled "Declaration of Mark P. Ebener". Declarant attests that all of the statements in the attached document are true, that they are based on his personal knowledge, and that he is competent to testify to those stated facts and conclusions.

3. Also attached to this notarized document is another document titled "Fish harvest reported by CORA commercial fishers, summarized by grid, 2005-2015." This was prepared by ITFAP based on records maintained by ITFAP and CORA; Declarant attests that the harvest information depicted is accurate based on records maintained by ITFAP and CORA.

  
Mark P. Ebener

STATE OF MICHIGAN  
COUNTY OF Chippewa

Signed and sworn before me in Chippewa County on July 14, 2016 by Mark P. Ebener.

  
\_\_\_\_\_, Notary Public  
Chippewa County, Michigan  
Commission Expires: Sep. 26, 2021  
Acting in Chippewa County, Michigan

MATTHEW KAGARISE  
NOTARY PUBLIC, STATE OF MI  
COUNTY OF CHIPPEWA  
MY COMMISSION EXPIRES Sep 26, 2021  
ACTING IN COUNTY OF Chippewa



## **Declaration of Mark P. Ebener**

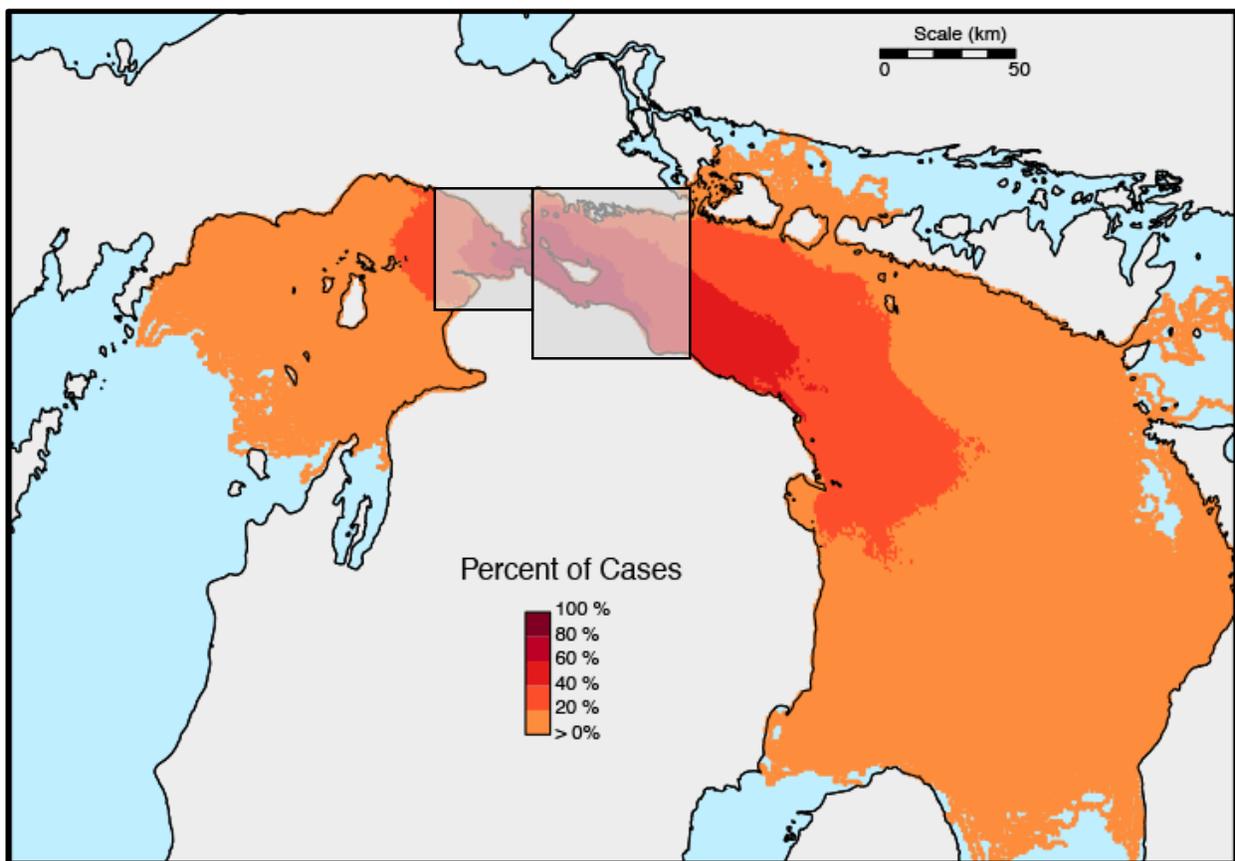
I am employed as the Fishery Assessment Biologist for the Inter-Tribal Fisheries and Assessment Program (ITFAP) of the Chippewa Ottawa Resource Authority, but since the Sault Ste. Marie Tribe of Chippewa Indians handles the financial contract for my organization, I am technically an employee of the Sault Ste. Marie Tribe of Chippewa Indians. I have a Bachelor of Science (1977) and Master's degree (1980) in Fisheries Management from the University of Wisconsin-Stevens Point. I was employed as Assessment Biologist for the Inter-Tribal Fisheries Program from 1981 to 1984, then from part of 1984 to 1990 I was employed as Great Lakes Biologist for the Great Lakes Indian Fish and Wildlife Commission in Odanah, Wisconsin. I returned to my current position as Assessment Biologist in November 1990. Thus, I have been employed by Native American Inter-Tribal Natural Resource Agencies as a Great Lakes Fishery Biologist for 35 years.

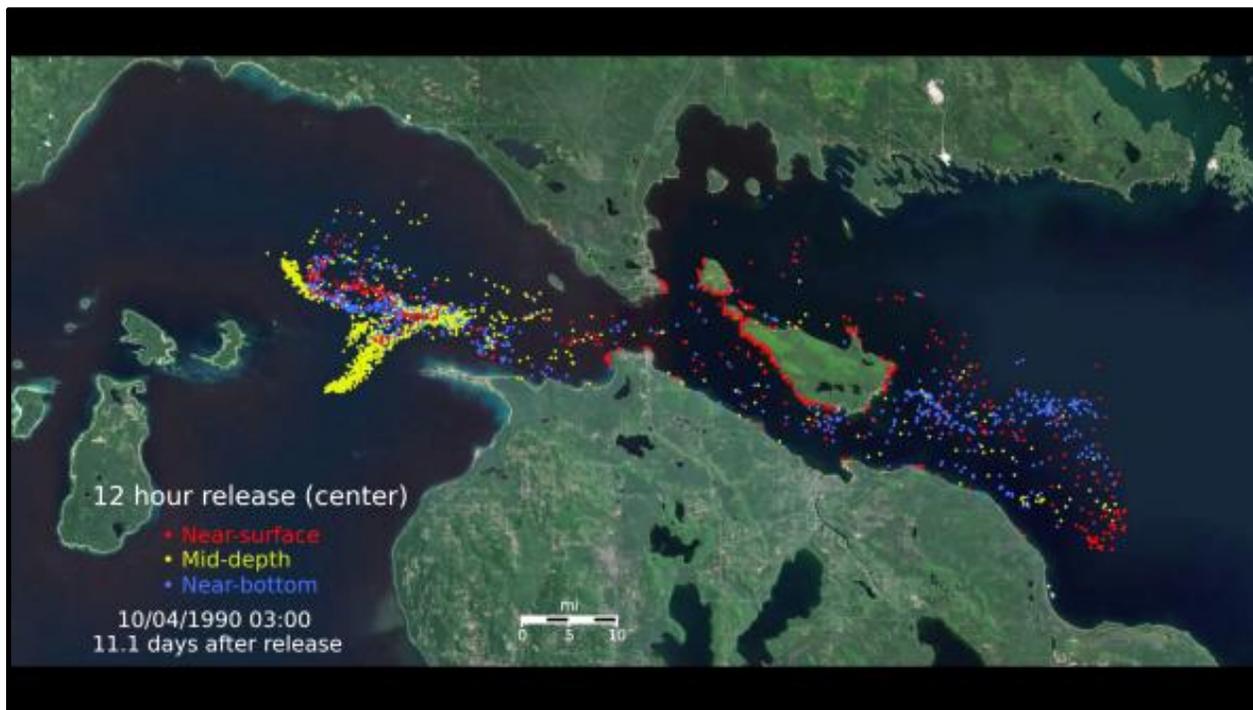
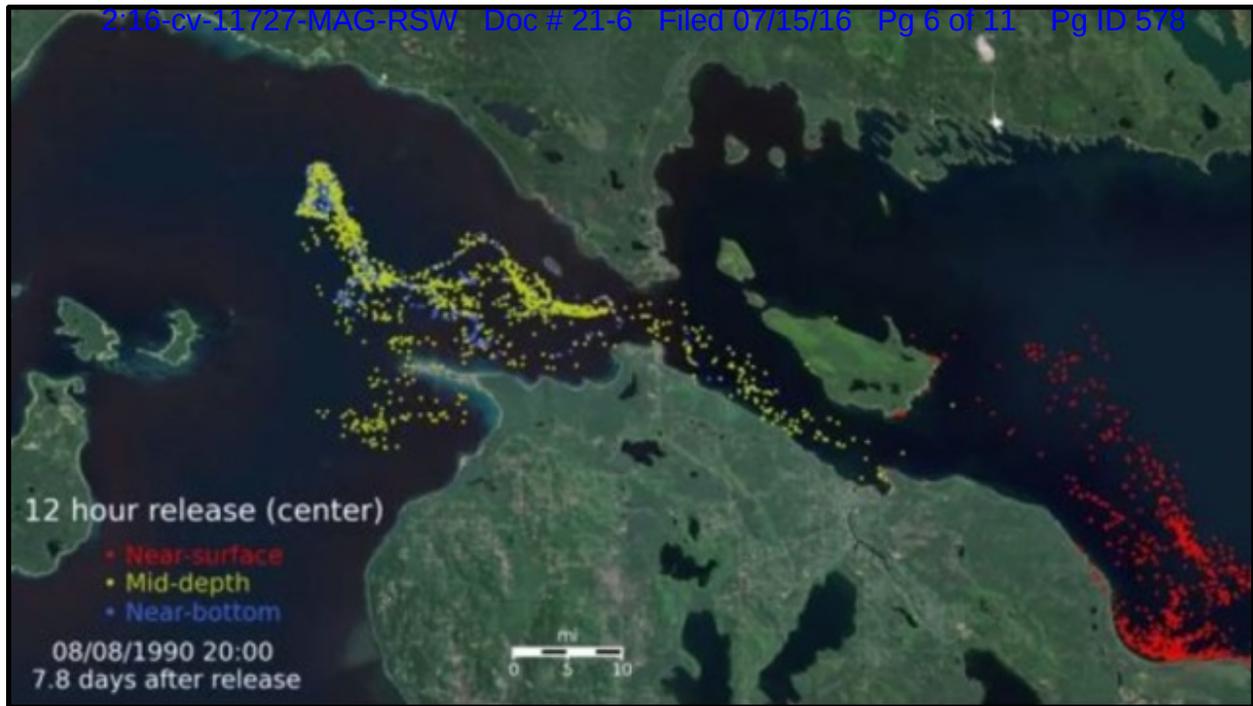
I have conducted numerous research and assessment projects on Great Lakes fishes during my 35 years as a professional fishery biologist both independently for the Chippewa Ottawa Resource Authority and cooperatively with researchers from other state, federal, university, and tribal organizations. The vast majority of my work has focused on lake whitefish and lake trout, but I have also studied Great Lakes walleye, cisco, yellow perch, and Chinook salmon. I have authored or co-authored over 25 scientific papers based on data our staff has collected, or as part of collaborative studies with other researchers.

My primary responsibility at ITFAP is to coordinate collection of information to describe the status of fish species important to the CORA fishery. I also serve on the Modeling Subcommittee for the 1836 Ceded waters, whose primary responsibility is to estimate safe harvest limits of whitefish and lake trout in each of the management units in the ceded waters. I also serve on two international technical committees whose responsibilities are to coordinate research and assessment on fish populations and their habitat, and to advise state, federal, and tribal governments on management of fish and their habitat in Lakes Superior, Huron, and Michigan. I was chairman of the Lake Superior Technical Committee for 14 years and chairman of the Lake Huron Technical Committee for five years. I also served on the Lake Michigan Technical Committee.

This is my assessment of the potential effects of an oil spill from Line 5 on the fishery resources in the 1836 Treaty-ceded waters. Before I get into specifics, I will point out that the commercial fisheries and some fish populations in the Prince William Sound area of Alaska have not recovered from the oil spill of the Exxon Valdez in 1989. I did a simple Google search and found at least five articles of how all the oil from the Exxon Valdez has not been cleaned up in Prince William Sound as of 2014 and these articles document how some fisheries and the local economy have also not recovered from the spill. I suspect we would see the same effect here in the 1836 Treaty-ceded waters of Lakes Huron and Michigan as a consequence of a leak from Line 5. It would be naïve to believe otherwise.

My evaluation of the effects on fish populations and their habitat because of an oil spill from Line 5 is based on my experience as a fishery biologist working for Native American Tribes in the upper Great Lakes of North America; specifically lakes Superior, Huron, and Michigan. My evaluation is also based on some of the results from University of Michigan computer simulations that estimated the spatial and bathymetric extent of an oil spill from Line 5 into northern lakes Michigan and Huron. These simulations were based on a water flow model and current patterns in the Straits of Mackinac for a release of oil from Line 5 that lasted for 8 to 12 hours. Based on these simulations, I am defining the affected areas as all waters of northern Lake Michigan east of a line drawn south from Epoufette, Michigan to Ile aux Galet and all waters of northern Lake Huron west of a line drawn south from Detour, Michigan to Forty Mile Point. I am defining these areas as Northern Lake Michigan and Northern Lake Huron.



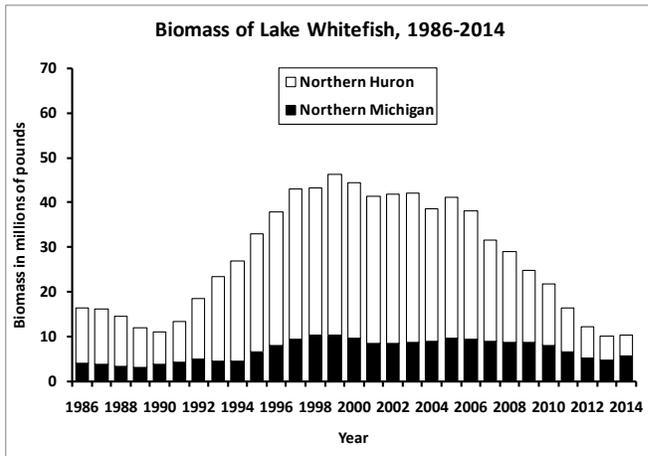


Lake whitefish (*Coregonus clupeaformis*) is the primary target of the CORA commercial fishery and the species made up 79% by weight of the total commercial harvest from the 1836 ceded waters during 2006-2015 based on CORA commercial fishery statistics summarized by our staff. Lake whitefish sustain themselves solely through natural reproduction, but spawning does not take place throughout Northern Lake Michigan and Northern Lake Huron. Rather lake whitefish spawning is concentrated in shallow rock and gravel areas adjacent to the shorelines. As such, lake whitefish spawning sites would be highly vulnerable to an oil spill. In the

Northern Lake Michigan area specific spawning locations include the areas around Green Island, Pt. aux Chenes, and Epoufette along the southern shore of the Upper Peninsula of Michigan and along the shoreline of the northern Lower Peninsula of Michigan from Cecil Bay and Big Stone Bay west to Waugoshance Point and then south through Sturgeon Bay. In Northern Lake Huron lake whitefish spawn along nearly the entire southern Upper Peninsula shoreline from Detour west to just north of St. Ignace wherever there are small rocky and gravel areas. Lake whitefish also spawn in large aggregations from Cheboygan, Michigan southeast along the northeastern portion of the Lower Peninsula of Michigan to 40 Mile Point; again wherever rocky and gravel areas are found along the shoreline.

Nearly the entire area of Northern Lake Michigan and Northern Lake Huron is lake whitefish habitat that is used by all life stages. Lake whitefish eggs are laid on shallow rocky/gravel areas in water less than 10 ft. deep typically from late October through early December where they incubate throughout the winter. Young lake whitefish hatch just after ice out from mid to late April through mid to late May. These young lake whitefish occupy very shallow sandy areas less than 5 ft. deep adjacent to the spawning shoals through roughly early July. Thereafter, the young lake whitefish move to deeper water. Juvenile and adult lake whitefish live throughout Northern Michigan and Northern Huron occupying waters of typically 30 to 200 ft. deep.

Northern Lake Michigan and Northern Lake Huron are very productive areas for lake whitefish with biomass levels typically exceeding 10 million pounds annually. Statistical-catch-at age estimates of the total biomass of lake whitefish age-4 and older in Northern Lake Michigan and Northern Lake Huron ranged from 10 to 47 million pounds annually and averaged



28 million pounds during 1986-2014. The annual CORA commercial harvest from Northern Lake Michigan and Northern Lake Huron ranged from 1 to 4 million pounds and averaged 3 million pounds during 1986-2014. Lake whitefish harvests from Northern Lake Michigan and Northern Lake Huron made up 37% to 76% of the total annual CORA commercial lake whitefish harvest from the 1836 ceded waters and averaged 58% during 1986-2014. Thus, Northern Lake Michigan and Northern Lake Huron are very important fishing grounds for the

CORA fishery and the habitat in these areas produces more than ten millions of pounds of lake whitefish annually for harvest by the tribes.

I believe declines in biomass of lake whitefish due to an oil spill will have a huge negative effect on the CORA commercial fishery for over a decade. Egg incubation and larval abundance in nearshore habitat will be most affected by an oil spill and these habitats will be

rendered basically useless for many years. Juvenile and adult lake whitefish may be less directly affected by an oil spill than eggs and larvae, but their food resources will be affected, thus I suspect that growth of these fish will be negatively affected by the spill. Juvenile and adult lake whitefish consume a broad array of indigenous food items such as zooplankton, clams, snails, darters, larval and adult mayflies, caddis flies, and midges, Mysis, Diporeia, and ostracods. Juvenile and adult lake whitefish also consume invasive species such as dreissenid mussels, Bythotrephes, and small rainbow smelt and alewife. Most of the indigenous prey of lake whitefish live on the lake bottom (they are benthic) and as such will be negatively affected by an oil spill. Reductions in abundance of benthic prey will most certainly reduce food consumption by juvenile and adult lake whitefish and will reduce their growth rates and possibly their body condition. Large reductions in body condition were observed on lake whitefish from Northern Lake Michigan and Northern Lake Huron during the late 1990s and early 2000s after arrival of dreissenid mussels to the Great Lakes, and this reduction in body condition reduced marketability of lake whitefish by the CORA commercial fishery. I expect a repeat of this process if an oil spill occurs.

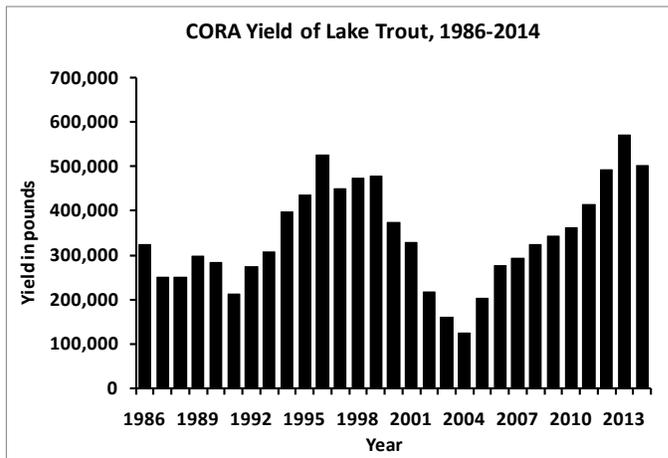
Lake trout (*Salvelinus namaycush*) is the second most commonly harvested fish species by the CORA fishery and the species made up 15% by weight of the total CORA harvest during 2006-2015 based on fishery statistics summarized by our staff. Lake trout populations are sustained through both natural reproduction and stocking of hatchery-reared fish. Lake trout are indigenous to the Great Lakes and historically they were the top fish predator in the Great Lakes prior to becoming extirpated in all but Lake Superior by 1960. Since then, federal, state, provincial, and tribal governments have been trying to promote rehabilitation and recovery of lake trout population throughout the Great Lakes by controlling fishery harvests, stocking hatchery-reared fish, and controlling populations of the invasive sea lamprey. Through 2015, lake trout populations have fully recovered in Lake Superior, they are becoming self-sustaining in the main basin of Lake Huron, and they are just now starting to sustain themselves in Lake Michigan. Northern Lake Michigan populations of lake trout are composed of 94% hatchery-reared fish, whereas Northern Lake Huron populations are composed of 35% naturally produced fish based on our monitoring of the populations in both lakes during 2010-2015. The 2000 Consent Decree negotiated between CORA member tribes and the State of Michigan and U.S. federal government was designed to promote recovery of lake trout populations in the 1836 ceded waters, so much of the current management focuses on protecting lake trout through refuges, harvest limits, reductions in gill net effort, lake trout stocking, and sea lamprey control. An oil spill from Line 5 would have direct effects on agreements contained in the Consent Decree and would create a huge setback in the process to rehabilitate lake trout populations.

Lake trout spawn primarily on offshore reefs in Northern Lake Michigan and Northern Lake Huron, but they also spawn to a lesser extent in shallow rocky areas along the shoreline of both areas. In Northern Lake Huron lake trout currently spawn in offshore areas such as the Martin, Pomery, and Tobin reef complex near Cedarville, Michigan, and Spectacle and Reynolds reefs which are located between Detour and St. Ignace anywhere from 5 to 10 miles from shore. Lake trout also spawn along the shoreline near Detour, Hammond Bay, and Bois Blanc

Island. Historically, lake trout spawned on Graham and Majors Shoals, which are both located directly in the Straits of Mackinac just east of the Mackinac Bridge, but I am unsure of the current status of lake trout spawning on either of those shoals. In Northern Lake Michigan lake trout spawn along the shoreline of the northwest portion of the Lower Peninsula from Cecil Bay to Waughoshance Point and south through Sturgeon Bay.

Nearly the entire area of Northern Lake Michigan and Northern Lake Huron is lake trout habitat that is used by all life stages. Lake trout eggs are laid on rocky substrates in water of 5 to 30 ft. deep typically from mid-October through mid-November where they incubate throughout the winter. Young lake trout hatch after ice out from mid to late April through mid to late May. These young lake trout occupy rocky areas on the spawning shoals, but as they age through their first summer they move off the rocky spawning shoals to deeper, more soft bottomed areas. Juvenile and adult lake trout live throughout Northern Lake Michigan and Northern Lake Huron occupying waters of typically 30 to 350 ft. deep.

As with lake whitefish, both Northern Lake Michigan and Northern Lake Huron are productive areas for lake trout. The CORA commercial harvest of lake trout from both areas combined ranged from 124,000 to 572,000 pounds annually and averaged 343,000 pounds each year during 1986-2014. The annual CORA commercial harvest of lake trout from Northern



Lake Michigan and Northern Lake Huron represented 36% to 56% of the total CORA yield of lake trout from the 1836 ceded waters. Since the 2000 Consent Decree the CORA commercial yield of lake trout in Northern Lake Michigan and Northern Lake Huron has been limited to within certain bounds by total allowable catches that are established annually by the parties to the agreement. In Northern Lake Huron the annual CORA total allowable catch has ranged from 69,000 to 414,000 pounds during 2001 to 2015.

In Northern Lake Michigan the total allowable catch has been much more constant at 453,000.

Lake trout that spawn along shorelines, particularly in Northern Lake Huron through Hammond Bay, will be severely affected by an oil spill model for Line 5 based on the simulations from the oil spill model. In particular, lake trout spawning in the Cheboygan to Hammond Bay area will most affected because these fish spawn near shore and the spill will cover rocky substrates where eggs are deposited nearshore. Offshore spawning populations of lake trout will be somewhat affected by the oil spill as simulations indicated that oil may be found near the lake bottom at the Reynolds and Spectacle Reef spawning sites.

An oil spill from Line 5 will also affect yellow perch, walleye, and round whitefish (i.e. menominee) populations in Northern Michigan and Northern Huron. These species in the aggregate made up less than 2% of the annual CORA commercial harvest during 1986-2014, but yellow perch and walleye, in particular, are high value species and as such are important to the fishery. The effect of an oil spill from Line 5 on yellow perch, walleye, and menominee will be concentrated in Northern Lake Huron from the Mackinac Bridge through the South Channel to Cheboygan and Hammond Bay. This area contains spawning grounds for all three species, particularly from Cheboygan through Hammond Bay. Yellow perch spawn directly in front of Cheboygan and throughout the South Channel as do menominee. Walleye spawn in the Cheboygan River and inhabit the South Channel through much of the year. Many of the walleye that inhabit the South Channel come from a population that spawns in the Saginaw River, but lives in the Straits of Mackinac for part of the year. Thus a spill from Line 5 will affect much more than fish populations in the Straits.

