

Field collection protocol for fish stomach samples during the 2021 Coordinated Science and Monitoring Initiative in support of the Lake Superior Food Web Analysis Study

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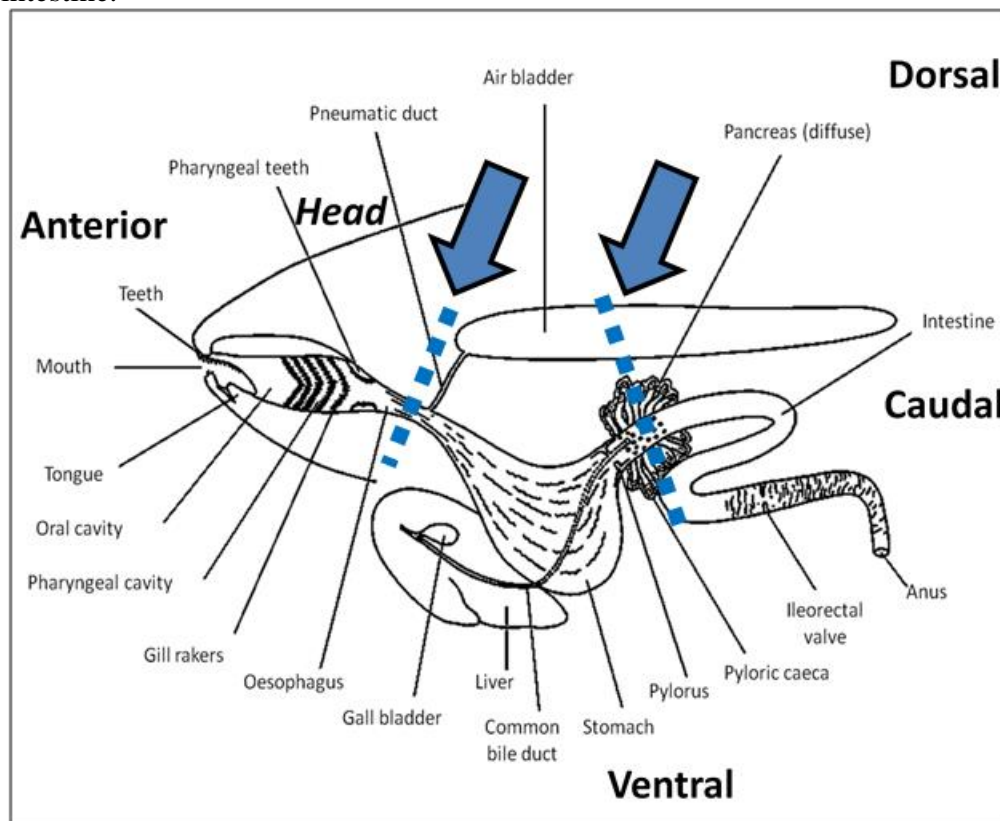
Fish stomach sample sources

- Spring Lean lake trout gill net survey (state & tribal agencies)
- Spring prey fish bottom trawl survey (USGS)
- Deep water/siscowet lake trout gill net survey (state & tribal agencies)
- Summer Lake Trout gill net survey (state & tribal agencies)
- Fall Lake Trout spawning gill net survey (state & tribal agencies)

Field collection procedures to collect stomach samples from target fish

Refer to Tables 1-4 for target species and sampling quota for your ecoregion(s). Also, stomachs are to be collected only from fish with requisite basic biodata including species, total length, and whole weight. Additional data such as sex, maturity, and sea lamprey wounding would be useful. It is vital that a unique sample ID is assigned to each fish that a stomach is collected from.

1. Excise digestive tract segment (cut at dashed lines in figure) from the most anterior portion of the esophagus to the center of the pyloric caeca portion of the intestine.



2. Place stomach in a sample bag with sample ID and place on ice or in freezer (preferable) on ship.
3. Transfer stomach samples from ship to a freezer daily.

Table 1. Ecoregion groupings for CSMI diet collection, 2021

Ecoregion	Management units
ON-W	S-01, S-02, S-03, S-04, S-05, S-06, S-07, S-08
MN-N	MN-2, MN-3
WA	MN-1, WI-1, WI-2
WK	MI-3, MI-4
KB	MI-4
SLS	MI-5, MI-6, MI-7
WFB	MI-8, S-12
ON-E	S-09, S-10, S-11

Table 2. Target number of predator fish stomach samples to be collected according to species and length group within each ecoregion for the 2021 CSMI in Lake Superior.

species	Length class (mm)				
	< 200	200-399	400-599	600-799	> 799
Lean lake trout	20	20	20	20	20
Siscowet lake trout	20	20	20	20	20
Burbot	20	20	20	20	20
Chinook salmon	20	20	20	20	20
Coho salmon	20	20	20	20	20
Rainbow trout/steelhead	20	20	20	20	20
Brook trout	20	20	20	20	20

Table 3. Target number of large prey fish stomach samples to be collected according to species and length group within each ecoregion for 2021 the CSMI in Lake Superior.

	Length class (mm)				
	<100	100-199	200-299	300-399	>399
Cisco	20	20	20	20	20
Bloater	20	20	20	20	20
Kiyi	20	20	20	20	20
Shortjaw cisco	20	20	20	20	20
Lake whitefish	20	20	20	20	20
Round whitefish	20	20	20	20	20

Table 4. Target number of small prey fish stomach samples to be collected according to species and length group within each ecoregion for 2021 the CSMI in Lake Superior.

	Length class (mm)			
	<25	25-49	50-99	>99
Rainbow smelt	20	20	20	20
Deepwater sculpin	20	20	20	20
Spoonhead sculpin	20	20	20	20
Slimy sculpin	20	20	20	20
Ninespine stickleback	20	20	20	20

Sample transfer

All frozen fish stomach samples will be transferred in coolers with ice to Shawn Sitar at the Marquette Fisheries Research Station by land-based vehicles. Sample exchange can occur at biannual Lake Superior Technical Committee Meetings or at other times anyone has staff moving through Marquette. This can be coordinated with Shawn Sitar.

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