

Invasive Species in the Great Lakes: Background

In 1959, the St. Lawrence Seaway opened to transoceanic vessels. Since then, 68% of the 84 nonindigenous species that have established in the Great Lakes were introduced through ballast water release, or by being attached to the hulls of these vessels.

Invasive species from ocean vessels have become integrated at the base of the food web with their impacts resonating throughout the chain. The impacts of a few of these invaders is well known, for example:

- Eurasian ruffe compete with yellow perch and walleye, reducing populations.
- Round goby are voracious benthic predators, preying on smallmouth bass nests.
- Zebra and quagga mussels are responsible for substantial biofouling, altering water clarity and energy flows in some lakes.

For many other invaders, the impact on the ecosystem is not well understood. Published research is available for only 22 of the 57 ship-borne species.

SHIPPING-INTRODUCED SPECIES DISCOVERED IN THE GREAT LAKES SINCE 1959

Species	Common Name	Year of Discovery	
1	<i>Pisidium supinum</i>	humpback pea clam	1959
2	<i>Thalassiosira weissflogii</i>	diatom	1962
3	<i>Skeletonema potamos</i>	diatom	1963
4	<i>Cyclotella cryptica</i>	diatom	1964
5	<i>Cyclotella atomus</i>	diatom	1964
6	<i>Cyclotella wolkereki</i>	diatom	1964
7	<i>Bangia atropurpurea</i>	red alga	1964
8	<i>Chroodactylon ramosum</i>	red alga	1964
9	<i>Potamothrix vejdoskyi</i>	oligochaete	1965
10	<i>Eubosmina coregoni</i>	waterflea	1966
11	<i>Dugesia polychroa</i>	flatworm	1968
12	<i>Thalassiosira guillardii</i>	diatom	1973
13	<i>Thalassiosira pseudonana</i>	diatom	1973
14	<i>Skeletonema subsalsum</i>	diatom	1973
15	<i>Nitocra hibernica</i>	harpacticoid copepod	1973
16	<i>Sphacelaria lacustris</i>	brown alga	1975
17	<i>Hymenomonas roseola</i>	cocco-lithophorid alga	1975
18	<i>Biddulphia laevis</i>	diatom	1978
19	<i>Chaetoceros hohnii</i>	diatom	1978
20	<i>Thalassiosira lacustris</i>	diatom	1978
21	<i>Enteromorpha prolifera</i>	green alga	1979
22	<i>Ripistes parasita</i>	oligochaete	1980
23	<i>Daphnia galeata galeata</i>	waterflea	1980
24	<i>Bythotrephes longimanus</i>	spiny waterflea	1982
25	<i>Nitellopsis obtusa</i>	green alga	1983
26	<i>Ganius aquaedulcis</i>	oligochaete	1983
27	<i>Salmincola lotae</i>	copepod	1985
28	<i>Gymnocephalus cernuus</i>	Eurasian ruffe	1986
29	<i>Apeltes quadracus</i>	fourspine stickleback	1986
30	<i>Thalassiosira baltica</i>	diatom	1988

Species	Common Name	Year of Discovery	
31	<i>Bosmina maritima</i>	waterflea	1988
32	<i>Dreissena polymorpha</i>	zebra mussel	1988
33	<i>Dreissena bugensis</i>	quagga mussel	1989
34	<i>Neogobius melanostomus</i>	round goby	1990
35	<i>Proterorhinus marmoratus</i>	tubenose goby	1990
36	<i>Potamopyrgus antipodarum</i>	New Zealand mud snail	1991
37	<i>Neascus brevicaudatus</i>	digenean fluke	1992
38	<i>Acanthostomum</i> sp.	digenean fluke	1992
39	<i>Ichthyocotylurus pileatus</i>	digenean fluke	1992
40	<i>Trypanosoma acerinae</i>	flagellate	1992
41	<i>Dactylogyrus amphibothrium</i>	monogenetic fluke	1992
42	<i>Dactylogyrus hemiamphibothrium</i>	monogenetic fluke	1992
43	<i>Echinogammarus ischnus</i>	amphipod	1994
44	<i>Scolex pleuronectis</i>	cestode	1994
45	<i>Sphaeromyxa sevastopoli</i>	mixosporidian	1994
46	<i>Heteropsyllus</i> nr. <i>nunni</i>	harpacticoid copepod	1996
47	<i>Acineta nitocrae</i>	suctorian	1997
48	<i>Cercopagis pengoi</i>	fish-hook waterflea	1998
49	<i>Schizopera borutzkyi</i>	harpacticoid copepod	1998
50	<i>Nitocra incerta</i>	harpacticoid copepod	1999
51	<i>Gammarus tigrinus</i>	amphipod	2001
52	<i>Psammonobiotus communis</i>	testate amoeba	2001
53	<i>Psammonobiotus</i> sp.	testate amoeba	2002
54	<i>Psammonobiotus linearis</i>	testate amoeba	2002
55	<i>Enteromorpha flexuosa</i>	green alga	2003
56	VHS virus	viral hemorrhagic septicemia	2003
57	<i>Hemimysis anomala</i>	bloody red mysid	2006