

# Northern pike

## *Esox lucius*

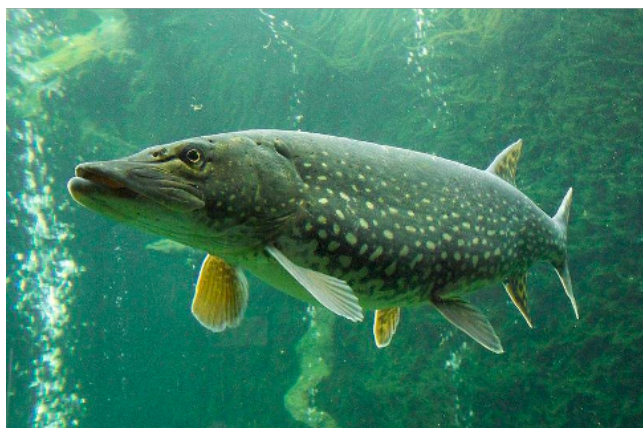
Synonyms: none

Other common names: common pike, jackfish Family: Esocidae

ITIS Serial No. 162139

### Description

*E. lucius* has an elongated body and head which can be variable in color: a fish from a clear stream or lake will usually be light green, while a pike from a dark slough or river will be considerably darker. Males and females are similar in appearance, but females live longer and attain greater size. The dorsal fin origin is slightly in front of the anal origin and both fins are placed rearwards (Hubbs & Lagler, 2004); the pectoral fins are low on the body, based under the opercle. The pelvic fins, which are rounded and paddle-shaped, also low on the body. There are 17-25 dorsal rays, 10-22 anal rays, and 19 caudal rays. On the underside of each side of the lower jaw, there are five sensory pores. The body and most of the head are covered with small cycloid scales. The eyes are yellow and highly mobile (Lefevre, 1999).



*E. lucius*. Photo by U.S. National Park Service

*Similar species:* Muskellunge, Pickerel

### Ecological impact

*Impact on community composition, structure, and interactions:* The main impacts of pike on biodiversity are through alteration of fish communities through predation. *E. lucius* is able to hybridize with both the muskellunge and the chain. Female hybrids of pike and are fertile and capable of back-crossing (Becker, 1983).

*Impact on ecosystem processes:* Through the reduction of native fish biodiversity pike can alter the trophic structure of aquatic ecosystems and, in turn, reduce ecosystem resilience to stressors. The voracious appetite of these predators can reduce populations of economically important fish species such as salmonids. Salmon and other fish have evolved in the absence of pike and likely are more vulnerable to pike predation. Pike are hosts to parasites such as fungi, protozoa, various worms, leeches, mollusks and crustacea. Pike are also susceptible to numerous bacterial and viral diseases and tumorous lesions .

### Biology and invasive potential

*Reproductive potential:* Pike are batch spawners that move inshore or upstream to flooded or marsh areas to spawn (Scott & Crossman, 1973). Spawning takes place every few minutes, for up to several hours, over a period of several days until all eggs are extruded.

*Potential for long-distance dispersal:* Globally distributed. Will disperse naturally, taking advantage of whatever pathways exist (Kerr & Lasenby, 2001). There are also numerous examples in the literature of this species spreading throughout interconnected lake and river systems.

*Potential to be spread by human activity:* Pike have a long history of introductions outside of its native range, mainly as an angling target, but also more recently as an aquacultural species.

*Habitat requirements:* Shallow, moderately productive, vegetated waters less than 4 m deep. They are most commonly found in lakes but may also be found in rivers; however, they avoid fast water and seek out vegetated side channels, sloughs and other backwaters.

*Congeneric biota:* *E. masquinongy*; *E. niger*; *E. americanus*.

### Legal Listings

- Has not been declared invasive
- Listed invasive in Alaska
- Listed invasive by other states
- Federal invasive species
- Listed invasive in Canada or other countries

### Distribution and abundance

Northern pike are circumpolar (Morrow 1980) and have one of the largest geographic distributions of all freshwater fish species (Stegemann 1989). Pike prefer vegetated, low flow, shallow habitats where they can hide and ambush prey. The northern pike is native to most of Alaska, but it does not naturally occur south and east of the Alaska Mountain Range except for a small, remnant population near Yakutat.

### Management

High local mobility make eradication attempts difficult. Mechanical, biological, and chemical methods have been employed. In certain cases, Alaska for example, legislation has been passed to penalize illegal stocking

### References

Becker GC, 1983. Fishes of Wisconsin. Madison, WI, USA: University of Wisconsin Press, xii 1052 pp.

Hubbs CL; Lagler DF, 1957. Fishes of the Great Lakes Region. Michigan, United States: Bulletin of the Cranbrook Institute of Science, No. 26:135 pp.

Kerr SJ; Lasenby TA, 2001. Esocid stocking: An annotated bibliography and literature review. Peterborough, Ontario, Canada: Fish and Wildlife Branch, Ontario Ministry of Natural Resources, 138 pp. <https://mffp.gouv.qc.ca/faune/peche/ensemencement/Pdf/esocides.pdf>

Lefevre R, 1999. *Esox lucius*. Animal Diversity Web (online). [http:// animaldiversity.ummz.umich.edu/site/accounts/information/Esox\\_luci.us.html](http://animaldiversity.ummz.umich.edu/site/accounts/information/Esox_luci.us.html)

Southcentral Alaska Northern Pike Control Committee. (2010). Management plan for invasive Northern Pike in Alaska. Alaska Department of Fish and Game, Juneau. [https://www.adfg.alaska.gov/static/species/nonnative/invasive/pike/pdfs/invasive\\_pike\\_management\\_plan.pdf](https://www.adfg.alaska.gov/static/species/nonnative/invasive/pike/pdfs/invasive_pike_management_plan.pdf)

Morrow, J. E. 1980. The freshwater fishes of Alaska. Alaska Northwest Publishing Company, Anchorage, AK.

Scott WB; Crossman EJ, 1973. Freshwater Fishes of Canada. Bulletin 184, NO. 184:966 pp.

### Other Resources

[USFWS Ecological Risk Screening Summary](#)