

The background image shows a satellite or aerial view of Flathead Lake, a large body of water in western Montana. The lake is surrounded by a dense forest of coniferous trees, with rugged mountain peaks rising behind it. The terrain is rugged and varied, with different shades of green and brown indicating different types of vegetation and elevation.

Ecological Impacts of Non-native Species in Flathead Lake, Montana

By

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Flathead Lake Fish Species

Native

bull trout
cutthroat trout
Rocky Mt whitefish
pygmy whitefish
longnose sucker
largescale sucker
northern pikeminnow
peamouth chub
redside shiner
sculpin (3 species)

Introduced

lake trout (1905)
lake whitefish (1890)
yellow perch (1910)
kokanee salmon (1916)
northern pike (1960s)
rainbow trout (1914)
brook trout (1913)
largemouth bass (1898)
pumpkinseed (1910)
black bullhead (1910)

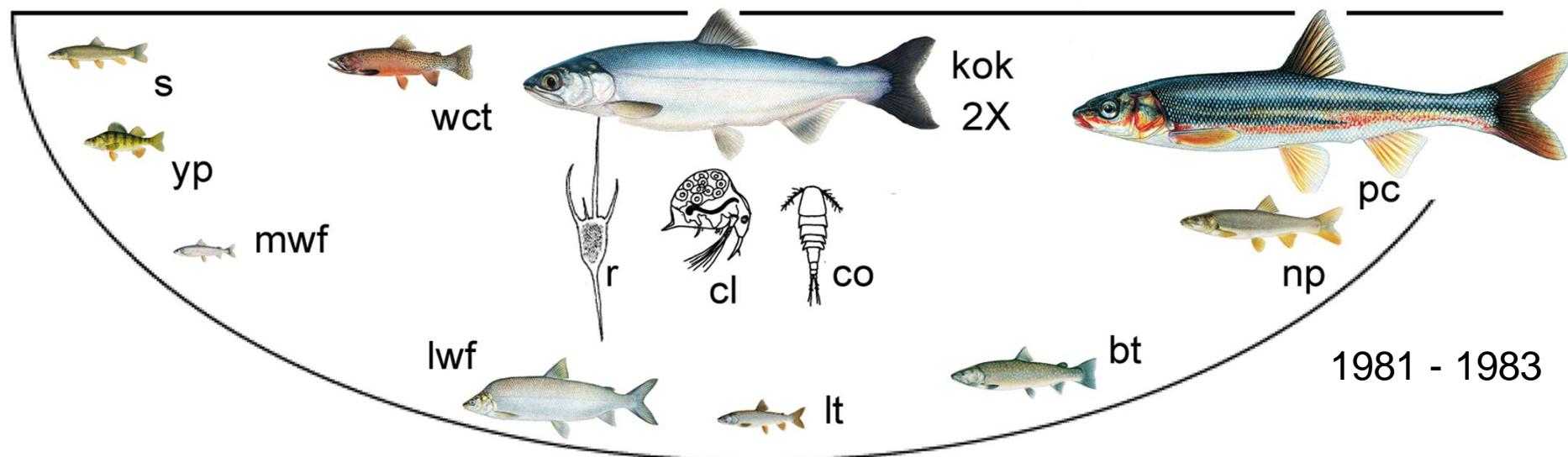
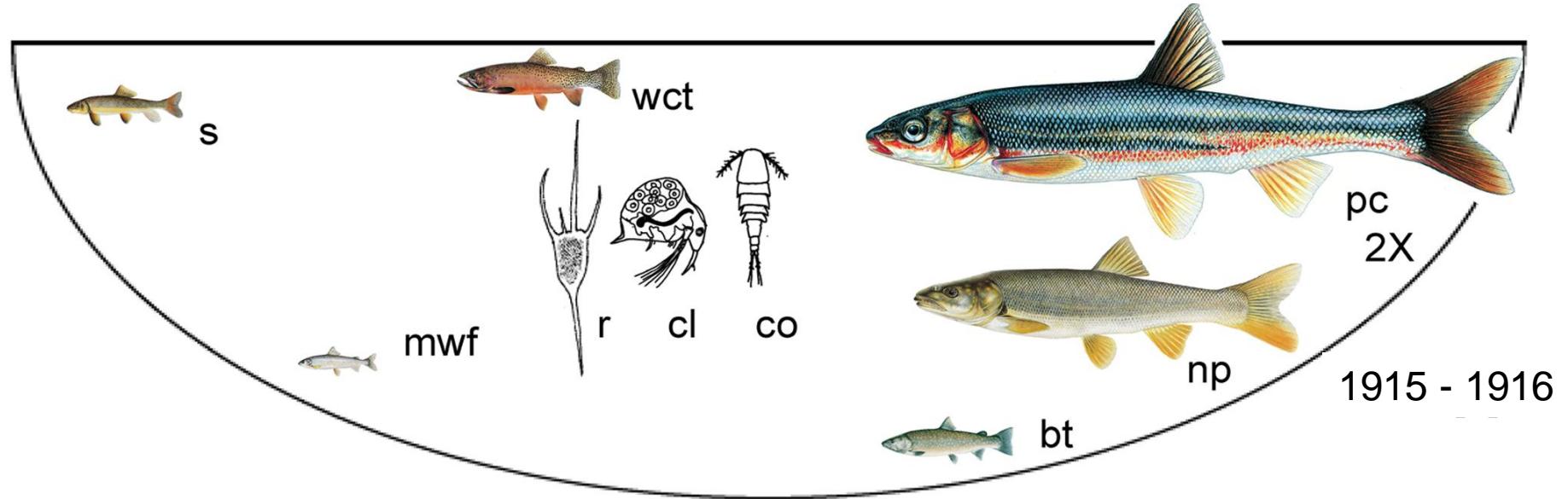
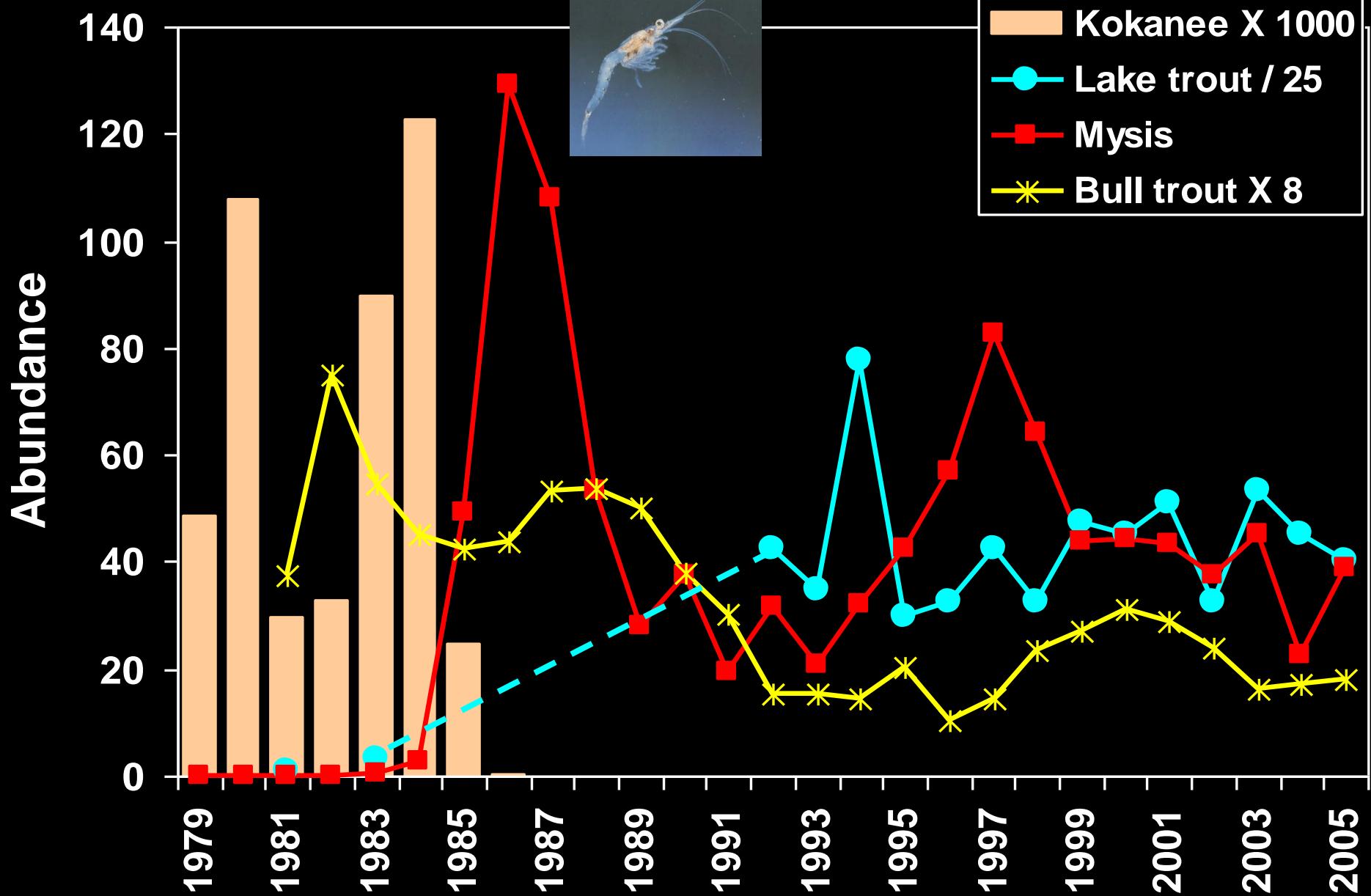


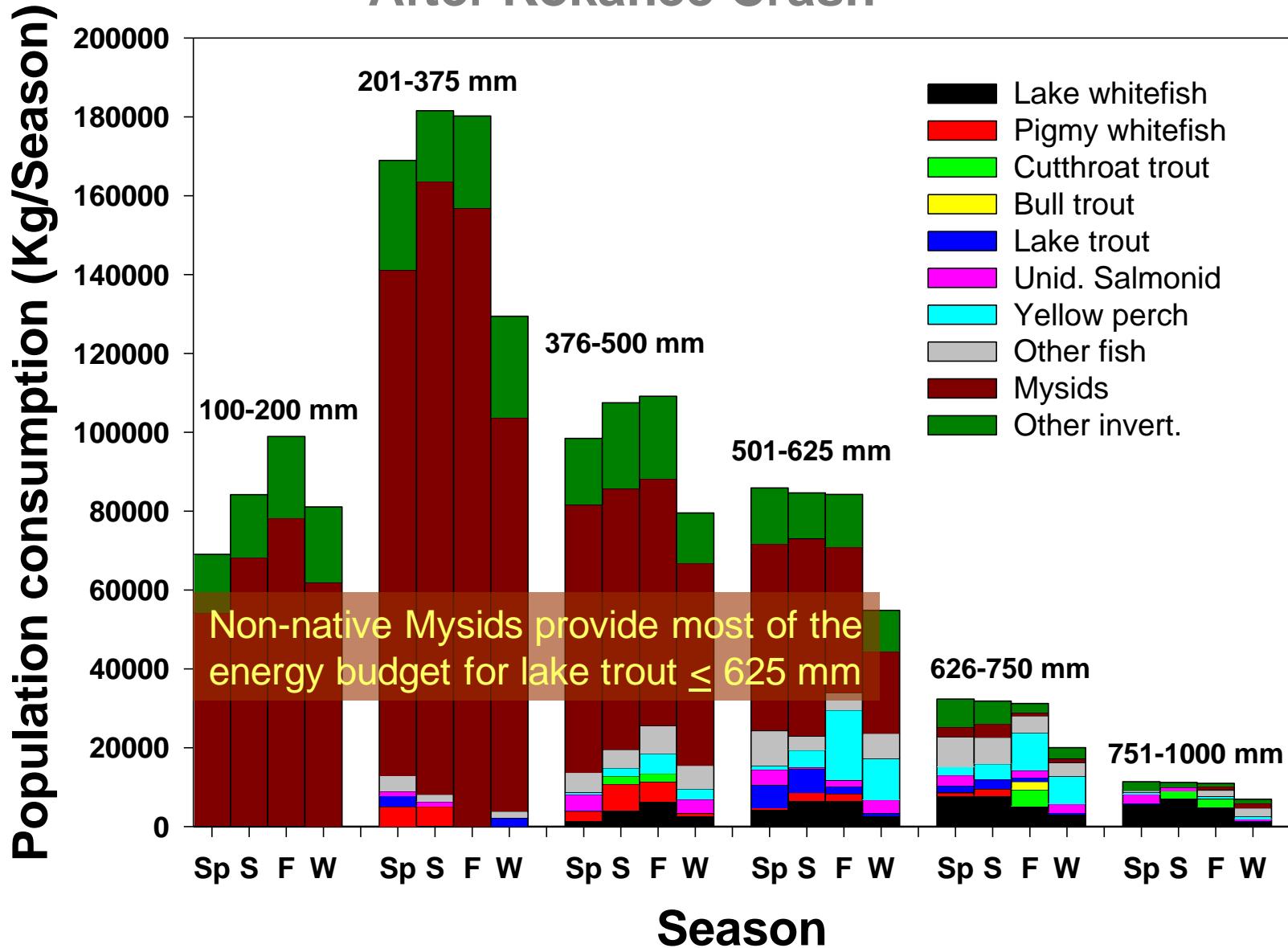


Photo by Joe Giersch

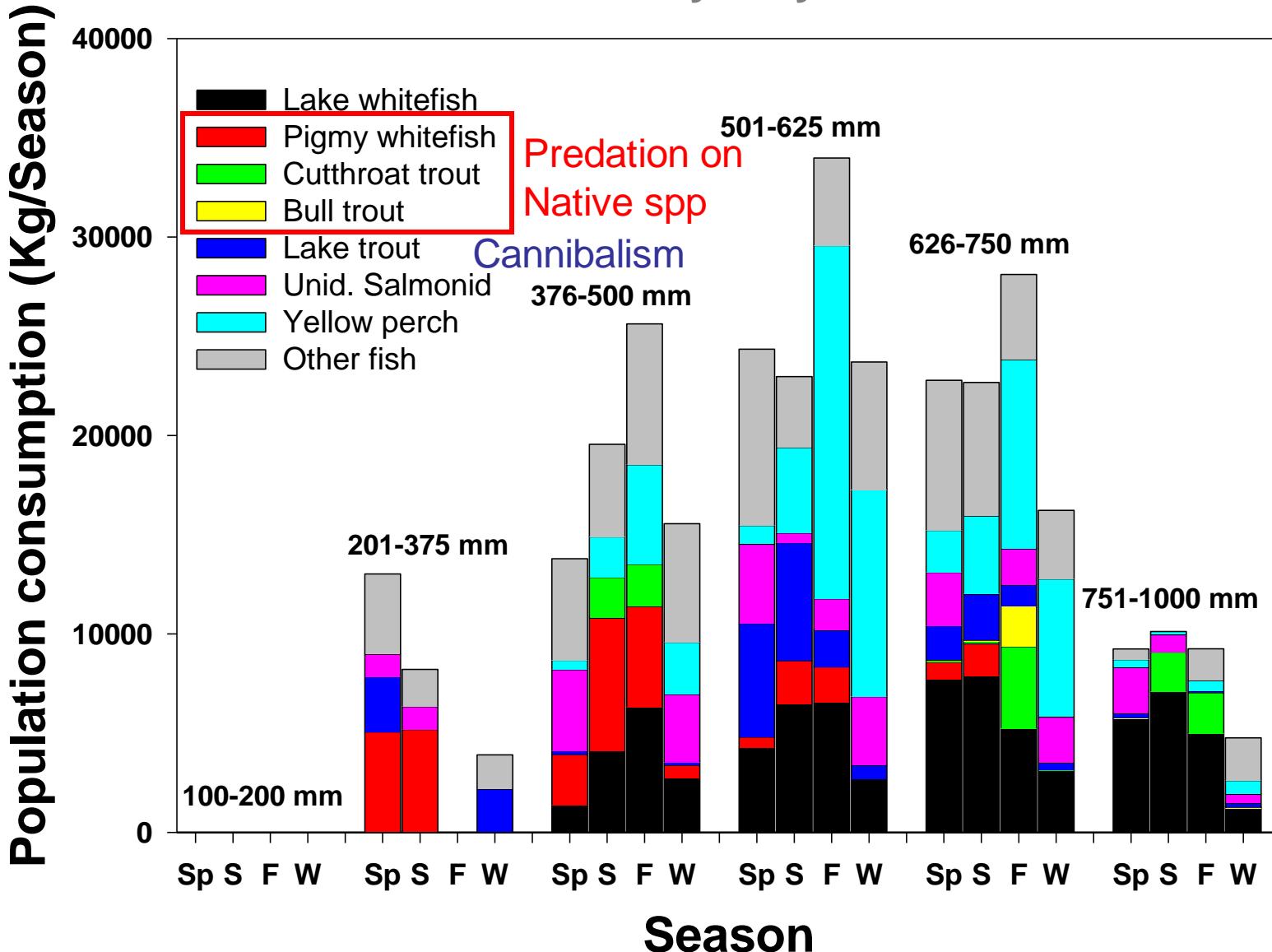


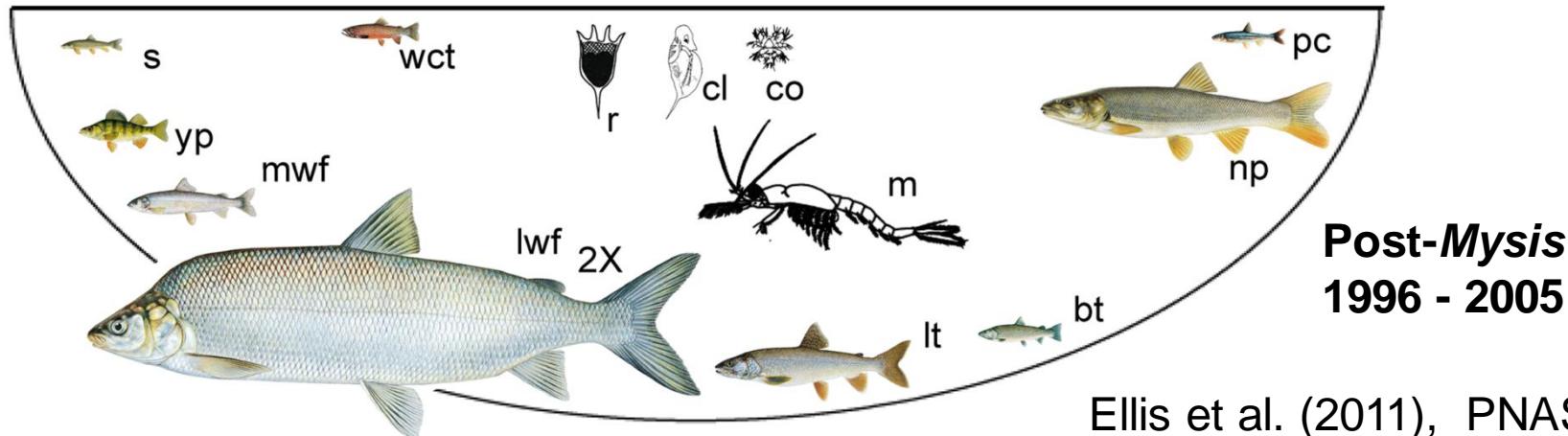
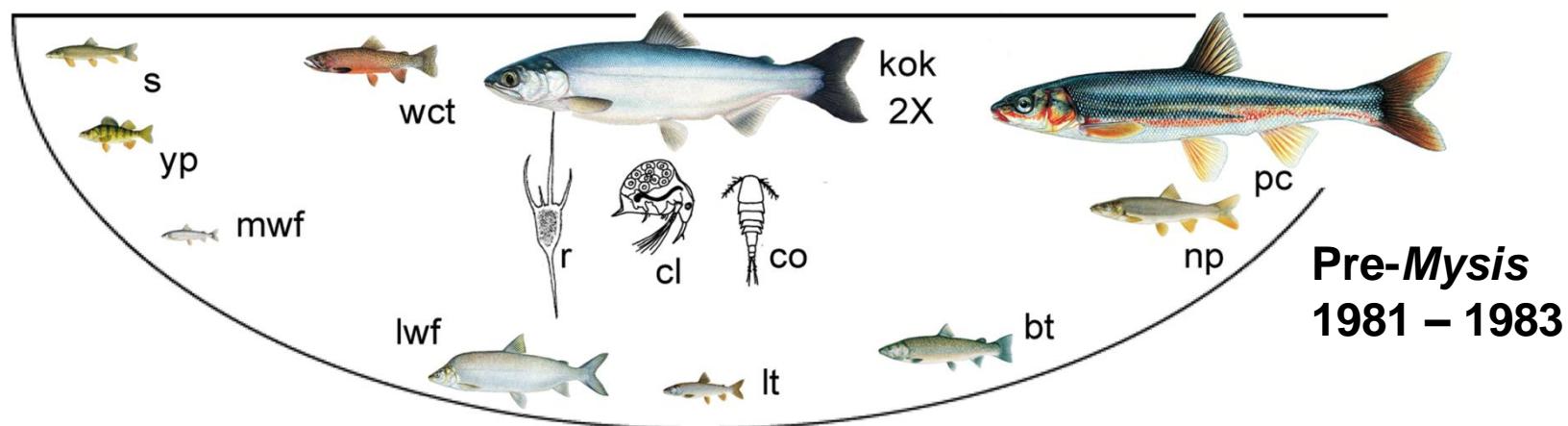
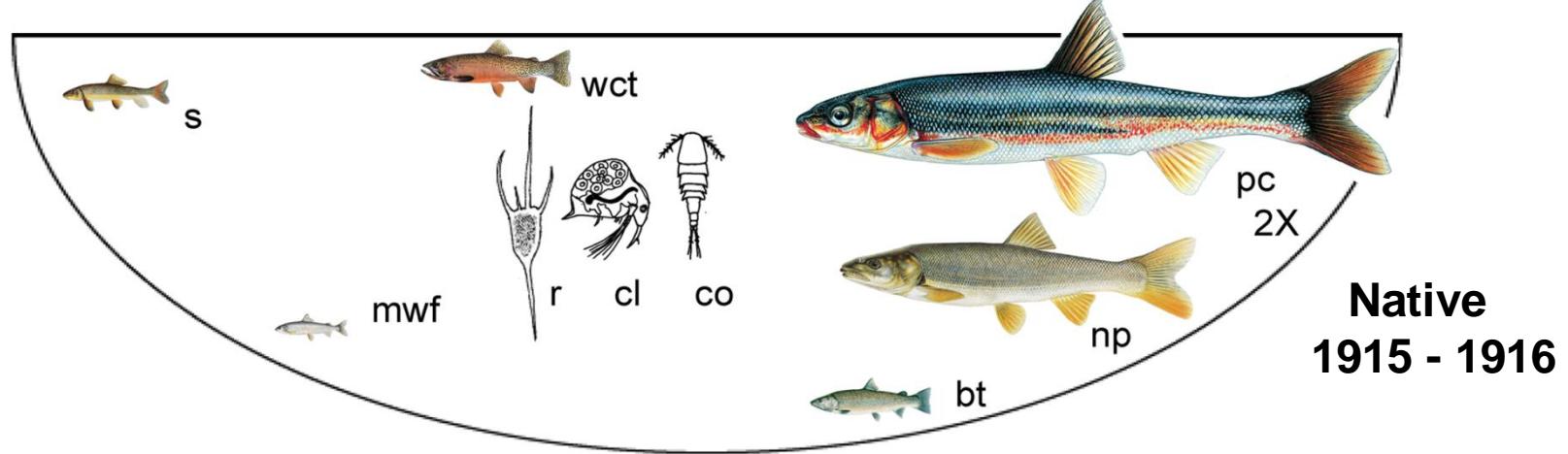
Ellis et al. (2011), Proc. Nat. Acad. Sci.

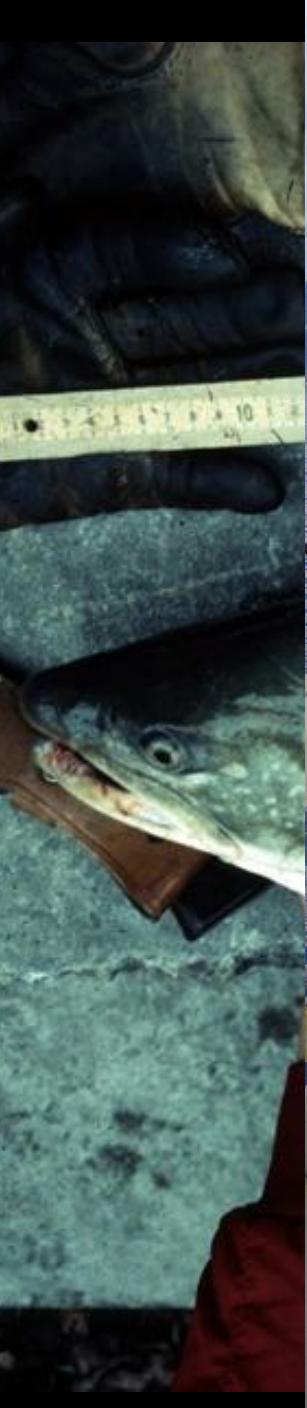
Size-Structured Seasonal Consumption by Lake Trout After Kokanee Crash

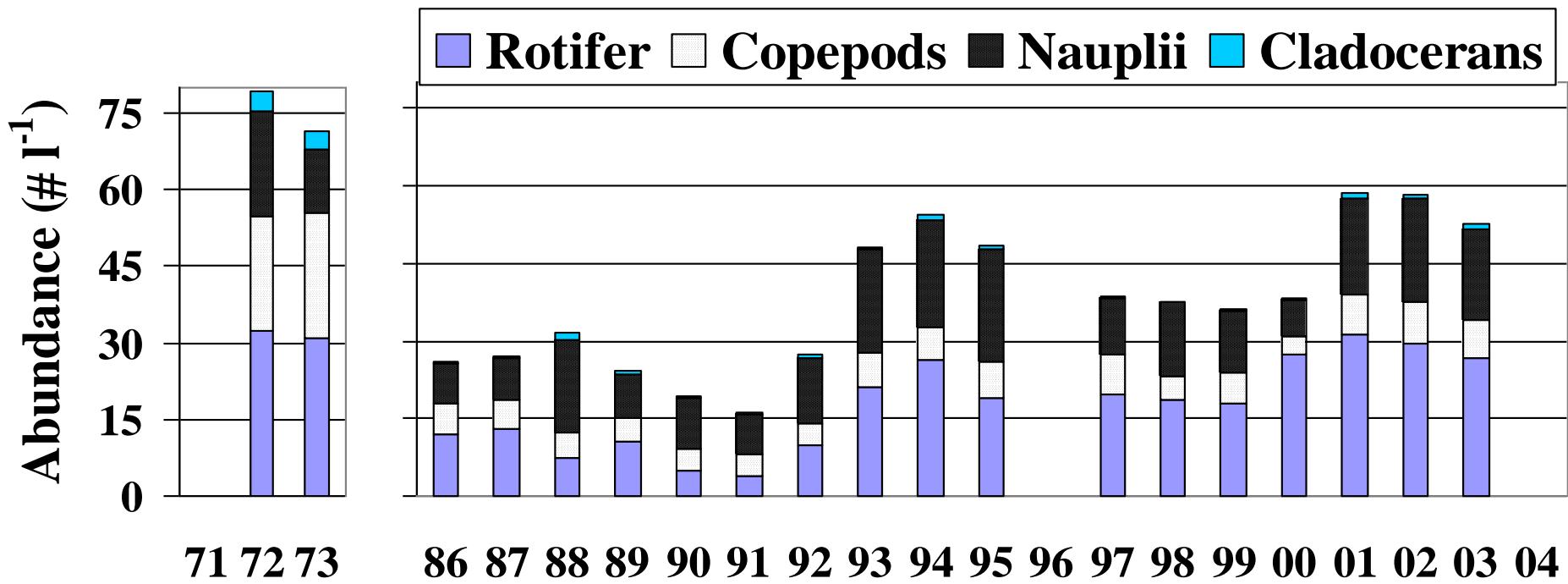


Size-structured Seasonal Predation Rates by Lake Trout On Fish Prey only







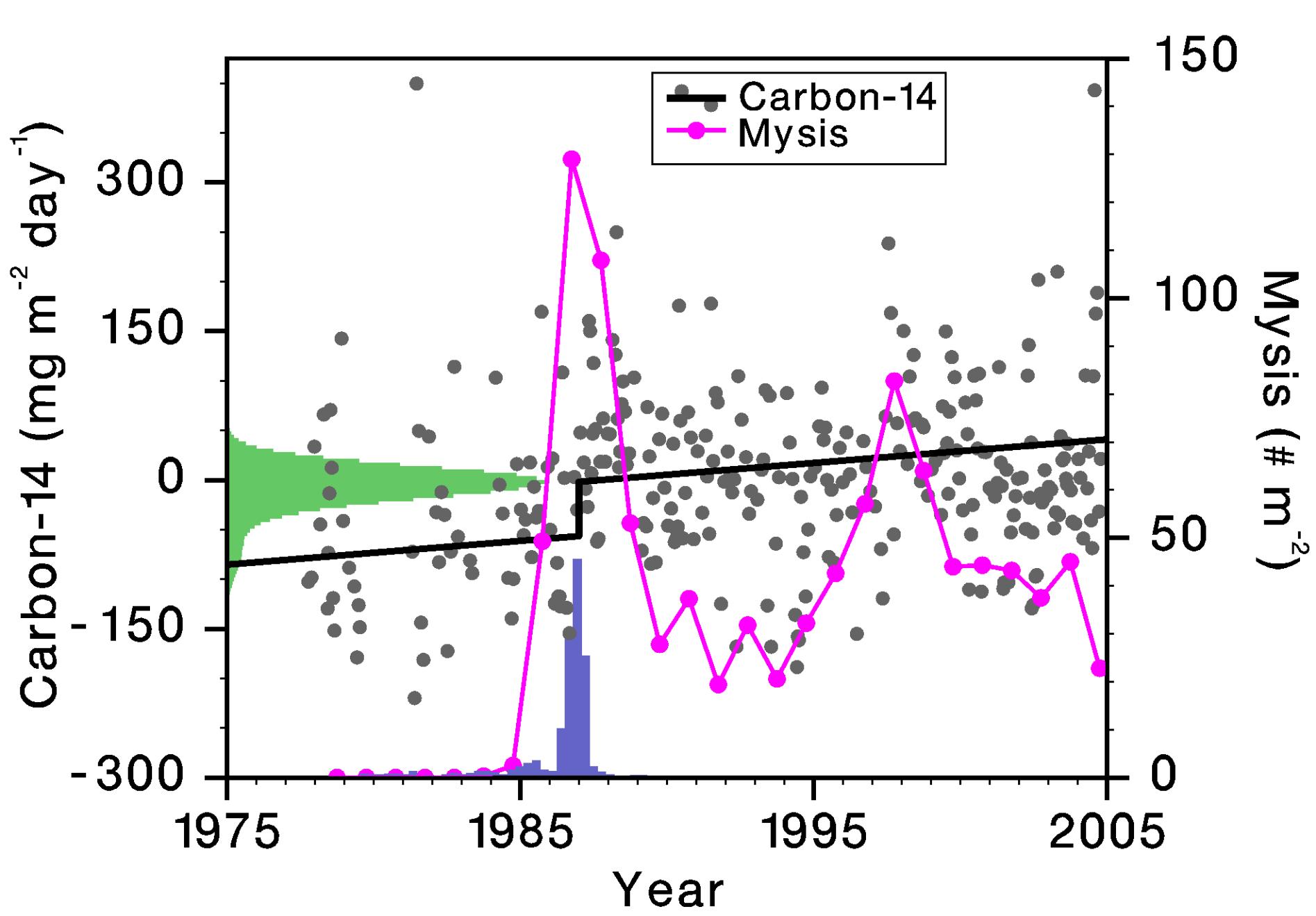


Pre-Mysis



Post-Mysis





Aerosol deposition and tributary loading of N to Flathead Lake increased from 1977 – 2004.



$\text{NO}_{2/3}$ $p = 0.0005$

$\text{NO}_{2/3}$ $p = 0.008$

NH_4 $p = 0.007$



