RIVER HERRING ECOLOGY
River Herring Distribution

Source: Adapted from NOAA
THE ALEWIFE LIFE CYCLE

Spawning
In late spring (May - June)

Egg incubation

Emergence
Less than 1 week after egg laying

Freshwater rearing
Occurs in summer

Spawning adults return to ocean
Shortly after spawning in late spring

Estuary rearing
From July to late October juveniles migrate downstream

Migration to ocean
Occurs in fall

Migration to spawning areas
In late spring; many are repeat spawners

Growth and maturation
In four years, alewives reach sexual maturity

River

Estuary

Ocean

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Ecology (from Greek: οἶκος, "house", or "environment"; -λογία, "study of")[^1] is the branch of biology[^1] which studies the interactions among organisms and their environment. Objects of study include interactions of organisms with each other and with abiotic components of their environment. Topics of interest include the biodiversity, distribution, biomass, and populations of organisms, as well as cooperation and competition within and between species. Ecosystems are dynamically interacting systems of organisms, the communities they make up, and the non-living components of their environment. Ecosystem processes, such as primary production, pedogenesis, nutrient cycling, and niche construction, regulate the flux of energy and matter through an environment. These processes are sustained by organisms with specific life history traits. Biodiversity means the varieties of species, genes, and ecosystems, enhances certain ecosystem services.

A **keystone species** is a *species* that has a disproportionately large effect on its *environment* relative to its abundance. Such species are described as playing a critical role in maintaining the structure of an *ecological community*, affecting many other *organisms* in an *ecosystem* and helping to determine the types and numbers of various other species in the community. A keystone species is a plant or animal that plays a unique and crucial role in the way an ecosystem functions. **Without keystone species, the ecosystem would be dramatically different or cease to exist altogether.**

Dams in Maine
The root cause of decline
The root cause of restoration
Impediments to restoration
Sebasticook River Herring Passage by year
Belted king fisher

Herring gull

Black backed gull

Mallard
Common Merganser

Hooded merganser

Common loon

Black duck
Humpback whale
Harbor porpoise
Harbor seal
Finback whale
Atlantic cod

Atlantic halibut

Atlantic salmon

Striped bass
Landlocked salmon

Brook trout

Chain pickerel

White perch