# RIVER HERRING ECOLOGY









# **River Herring Distribution**

Source: Adapted from NOAA



**Ecology** (from <u>Greek</u>: οἶκος, "house", or "environment"; -λογία, "study of")<sup>[A]</sup> is the branch of <u>biology<sup>[1]</sup></u> which studies the interactions among organisms and their environment. Objects of study include interactions of <u>organisms</u> with each other and with <u>abiotic components</u> of their <u>environment</u>. Topics of interest include the <u>biodiversity</u>, distribution, <u>biomass</u>, and <u>populations</u> of organisms, as well as cooperation and competition within and between <u>species</u>. <u>Ecosystems</u> are dynamically interacting systems of <u>organisms</u>, the <u>communities</u> they make up, and the non-living components of their environment. Ecosystem processes, such as <u>primary production</u>, <u>pedogenesis</u>, <u>nutrient cycling</u>, and <u>niche construction</u>, 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 <u>species</u>, <u>genes</u>, and <u>ecosystems</u>, enhances certain <u>ecosystem services</u>.



A keystone species is a species that has a disproportionately large effect on its <u>environment</u> 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









# The root cause of decline







# The root cause of restoration







# Impediments to restoration







#### Sebasticook River Herring Passage by year











# Common Merganser

#### Hooded merganser





Common loon

Black duck





# Atlantic cod



#### Atlantic salmon

# Striped bass

- Atlantic halibu



### American eel









### Brook trout

# Chain pickerel





# Yellow perch

10000

# Largemouth bass



Smallmouth bass

Redbreast sunfish