

Species	Spawning Period	Spawning Period Peak	Spring TOY restriction	Fall TOY restriction	Spawning Habitat	Spawning Locations	Spawning Site Fidelity	Egg Type	Egg Incubation	Larvae/ Juvenile emigration - time period	Larvae/ Juvenile emigration Peak	Post-spawning adult emigration -duration	Juvenile nursery habitat	Adult habitat	Population status	Federal ESA Status	State MESA Status	
Anadromous																		
Alewife (<i>Alosa pseudoharengus</i>)	late-March to mid-June	May	April 1 - June 15	Sept. 1 - Nov. 15	freshwater lentic (can be found in lotic habitat)	system specific	not known	semi-demersal	brief (2-5 days at 20-22 °C)	July to November	not known	several days-weeks	river-estuaries	coastal marine	In decline-moratorium	Species and Habitats of Special Concern - 2006	not listed	
Blueback herring (<i>Alosa aestivalis</i>)	April to June	May	April 1 - June 30	Sept. 1 - Nov. 15	freshwater lotic (can be found in lentic habitat)	system specific	not known	semi-buoyant/ adhesive	brief (3-4 days at 20-21 °C)	July to November	not known	several days-weeks	river-estuaries	coastal marine	In decline-moratorium	Species and Habitats of Special Concern - 2006	not listed	
American shad (<i>Alosa sapidissima</i>)	late-April to July	May/June	May 1 - July 15	Sept. 30 - Oct. 31	freshwater lotic	system specific	not known	semi-buoyant/ semi - adhesive	brief (6-8 days at 17 °C)	July to November	not known	several days	river-estuaries	coastal marine	population in decline	Species and Habitats of Special Concern - 2006	not listed	
Rainbow smelt (<i>Osmerus mordax</i>)	March to May	April	March 1 - May 31	none	freshwater riffle at or above tidal interface	Gulf of Maine Coast of Massachusetts	not known	demersal/ adhesive	7 - 21 days	immediate passive movement to estuary	April 15th - May 30th	one to several days	estuaries and embayments	coastal marine	not assessed	Species and Habitats of Special Concern - 2004	not listed	
White perch (<i>Morone americana</i>)	April to June	not known	April 1 - June 15	none	unspecified substrata near tidal interface	not known	not known	demersal/ adhesive	2 days at 18.3 °C; 6 days at 11.1 °C	approx. 2 weeks post-hatch	June	not known	estuaries and embayments	coastal marine	not assessed	not listed	not listed	
Atlantic tomcod (<i>Microgadus tomcod</i>)	late-Nov. to Feb.	January	Feb. 15 - April 30	none	unspecified substrata at tidal interface	not known	not known	demersal/ adhesive	24-30 days at 4-6 °C; 52 days at 2-4 °C	mid-Feb. to April	March	one to several days	estuaries and embayments	estuaries and coastal marine	not assessed	not listed	not listed	
Atlantic salmon (<i>Salmo salar</i>)	April to July & Sept. to Oct.	May/June	April 1 - July 15	Sept. 15 - Oct. 31	currently no access to spawning habitat in MA	present in ocean waters and the Connecticut and Merrimack River systems. removed at Essex Dam and transported to hatchery.	not applicable in MA	not applicable in MA	not applicable in MA	smolts - April 1 to July 15.	April/May	Presently N/A in MA. Adults held in hatchery. Adult broodstock may be released into MA and NH waters with tags	Historical habitat and habitat of the currently stocked fry is in NH tributaries. Smolts stocked in MA downriver of Essex Dam.	oceanic and riverine	population in decline	wild stock in ME - Endangered species. Not listed in Mass	not listed	
Sturgeon: Atlantic sturgeon (<i>Acipenser oxyrinchus</i>)	May to June	not known	April 1 - Nov. 1	none	historically, solid substrata in oligohaline and tidal freshwater zones near tidal interface	presently no evidence of spawning in MA but may use Merrimack as nursery	not known	benthic/ adhesive	brief (4-7 days at 20-17.8 °C)	not known	not known	N/A	riverine (May to November) and oceanic	coastal marine: Mass Bay and Cape Cod	population in decline	Species of Concern and candidate species for Threatened or Endangered	Endangered	
Sturgeon: Shortnose sturgeon (<i>Acipenser brevirostrum</i>)	April to November	not known	April 1 - Nov. 1	none	evidence of spawning in the Merrimack in Haverhill in the late 1980s (NMFS 1988)	upper Merrimack River	not known	benthic/ adhesive	13 days at 10°C	after approx. 9 days larvae move downstream	not known	Late April to early May move downriver to forage habitat	riverine freshwater	freshwater and estuaries	Endangered	Endangered	Endangered	
Catadromous																		
American eel (<i>Anguilla rostrata</i>)	March to June	May	March 15 - June 30	Sept. 15 - Oct. 31	Adult Silver Eel Spawning Emigration	Spawning Habitat	Spawning Locations	Spawning Site Fidelity	Egg Type	Egg Incubation	Post-spawning adult emigration	Juvenile nursery habitat	Population status	Federal ESA Status	State MESA Status			
American eel (<i>Anguilla rostrata</i>)	March to June	May	March 15 - June 30	Sept. 15 - Oct. 31	Sept. to Nov.	marine pelagic	Sargasso Sea	high degree of spawning site fidelity	not applicable	not applicable	not applicable	freshwater and estuaries. glass eels rest in complex substratas near tidal interface	not assessed	Candidate Species - 2006	conservation concern			

Species	Spawning Period	Spawning Period Peak	Spring TOY restriction	Fall TOY restriction	Spawning Habitat	Spawning Locations	Spawning Site Fidelity	Egg Type	Egg Incubation	Larvae/Juvenile migration	Post-spawning adult migration	Juvenile nursery habitat	Adult summer habitat	Population status	Federal ESA Status	State MESA Status
<i>Other finfish</i>																
Winter flounder (<i>Pseudopleuronectes americanus</i>)	January to May/June	GOM mid-February to mid-May, SNE mid-January to mid-April	Southern Mass. Jan. 15 - May 31; Cape Cod Bay Feb. 1 - June 30; North Coast Feb. 15 - June 30	none	shallow subtidal waters, to approx. 5 -8 meters deep, in sheltered bays, estuaries and harbors, as well as open nearshore coastal waters	present in nearly all harbors, bays and coastal waters of Mass.	limited seasonal movements and high degree of spawning site fidelity	demersal/adhesive	15 - 18 Days at between 2.8 - 3.3 °C.	not known	SNE - Leave coastal embayments when waters warm before June. GOM - Present inshore year-round with a migration below the thermocline during summer if temperatures become very warm (more than 18 - 19 °C).	SNE - Estuaries, various substrates, shallow subtidal to intertidal, adjacent to Eelgrass Beds and other SAV. GOM - Estuaries, various substrates, shallow subtidal to lower intertidal, adjacent to eelgrass beds and other SAV.	SNE - ocean, Nantucket Shoals and shelf waters south of The Islands. GOM - ocean / deeper channels and inlets in estuaries, bays and harbors where cooler waters mix with warm shallows	population in decline	not listed	not listed
Atlantic cod (<i>Gadus morhua</i>)	November-February; April-June	varies	Gulf of Maine (Mass Bay, Cape Cod Bay, Ipswich Bay) April 1 - June 30	Gulf of Maine (Mass Bay, Cape Cod Bay, Ipswich Bay) Dec. 1 - Jan. 31	gravel, cobble, sand, and clay with broken shells, biogenetic covered rock reefs and seagrass beds, as well as rock outcrops and ledges	Massachusetts Bay, Stellwagen Bank, Jeffrey's Bank, Georges's Bank, Southern New England	can be high, variable	pelagic/bouyant	8-60 days dependant on temperature	fall juvenile inshore (<100m) migration	unknown	gravel, cobble, sand, and clay with broken shells, biogenetic covered rock reefs and seagrass beds, as well as rock outcrops and ledges; early juvenile (age 0 and 1) cod have been found to occupy shallower depths (<90ft), particularly during winter and spring, moving into deeper waters with increasing age and length	oceanic state wide, throughout Gulf of Maine, mostly north of Cape but some also south of Cape	population concerns	not listed	not listed

Species	Spawning Period	Spawning Period Peak	TOY Restriction	Habitat	Spawning Locations	Larval Settlement	Egg Type	Population status	Federal ESA Status	State MESA Status
Mollusks and Arthropods										
Bay scallop (<i>Argopecten irradians</i>)	June to July & September	varies	June 1 - Sep. 30	sandy, muddy subtidal areas often associated with eelgrass beds.	bay scallops are found on Cape Cod, Buzzards Bay, and the islands	larval settlement 14 days after spawning. larvae attach to substrates such as eelgrass, pebbles or shells	pelagic	not assessed	not listed	not listed
Blue mussel (<i>Mytilus edulis</i>)	May to June	varies	May 15 - August 31	attached to hard substrate including rocks and pilings		larval settlement 3-5 weeks after spawn	pelagic	not assessed	not listed	not listed
American oyster (<i>Crassostrea virginica</i>)	June to August	varies	June 15 - Sept. 15	reef forming		larval settlement onto hard substrates including pebbles	pelagic	population in decline	not listed	not listed
Northern quahog (<i>Mercenaria mercenaria</i>)	June to August	varies	June 15 - September 15	sandy shallow subtidal areas within estuaries and coastal embayments	hard clams are primarily found South of Boston except for pockets in Quincy and Plum Island	larval settlement 1-4 weeks after spawned	pelagic	not assessed	not listed	not listed
Sea scallop (<i>Placopecten magellanicus</i>)	September to November	varies	Sept. 1 - Nov. 15	adults found offshore generally on firm sand, gravel	sea scallops are found off-shore on the outer Cape and the north shore	settlement occurs in 4-6 weeks on gravelly sand, shell fragments, hydroids and sponges	demersal	not assessed	not listed	not listed
Soft-shell clam (<i>Mya arenaria</i>)	March to April & June to August	varies	<i>Cape Cod Bay and North Coast</i> May 1 - Sept. 30; <i>Southern Mass.</i> April 15 - Sept. 15	gravel to soft mud in subtidal and intertidal areas within estuaries and coastal embayments	all of MA	larval settlement 2-6 weeks after spawn	pelagic	not assessed	not listed	not listed
Surf clam (<i>Spisula solidissima</i>)	June to August & October to November	varies	June 15 - Oct. 15	subtidal sandy substrate	offshore, mainly north of Cape Cod, some pockets south	larval settlement 18 days after spawning	pelagic	not assessed	not listed	not listed
Squid short-finned squid (<i>Illex illecebrosus</i>) long-finned squid (<i>Loligo pealei</i>).	year-round	May	April 15 - June 15	mud and sand substrate, migrate diurnally and seasonally in water column from 6 to 400 meters	western Nantucket Sound	planktonic paralarvae - recruits found in 1-50 meters depth range	benthic/adhesive	not assessed	not listed	not listed
American lobster (<i>Homarus americanus</i>)	May to August	varies	<i>Cape Cod Bay and North Coast</i> May 31 - July 31; <i>East of Cape Cod</i> June 15 - August 15; <i>Southern Mass.</i> May 15 - July 1	EBP on cobble substrate; adults on complex substrate and mud burrows	present in all MA waters	newly settled larvae are shelter dependant for several years	adhesive/attached to adult	population concerns	not listed	not listed
Atlantic horseshoe crab (<i>Limulus polyphemus</i>)	May to July	mid-May to mid-June	<i>in channels</i> May 1 - June 30; <i>on spawning beaches</i> May 1 - July 31	upper intertidal zone of sandy beaches. Adults move into estuaries to spawn and feed in the summer and move to deeper waters in winter.	present along entire coast of MA. More abundant in South Coast, Cape Cod and Islands	stay local with repeat spawning within a season. Most believed to return to same area interannually.	benthic/adhesive, laid in clumps buried in sand for 2-4 weeks.	population concerns	not listed	not listed

Species	Presence in Massachusetts Waters	TOY restriction	Habitat	Food	Population status	Federal ESA Status	State MESA Status
<i>Marine Mammals and Reptiles</i>							
North Atlantic right whale (<i>Eubalaena glacialis</i>)	January to May	Jan. 1 - May 15	abundant in Cape Cod Bay in winter and spring (Feb-May). Occasionally present in other areas of state waters outside this time period.	zooplankton	approx. 400 whales. Some females bring calves to CCB.	Endangered; Marine Mammal Protection Act	Endangered
Humpback whale (<i>Megaptera novaeangliae</i>) and Fin whale (<i>Balaenoptera physalus</i>)	April to October	April 1 to Oct. 31	Stellwagon Bank, Great South Channel, Cape Cod Bay, Massachusetts Bay, off Gloucester, off Race Point Provincetown.	herring, sand lance, and other small fishes.	approx. 900 whales in GOM feeding stock.	Endangered; Marine Mammal Protection Act	Endangered
Sea turtles: Leatherback (<i>Dermochelys coriacea</i>);	June to November	June 1 to Nov. 30	abundant in Cape Cod Bay and south of Cape Cod in summer and fall.	jellyfish	endangered	Endangered	Endangered
Loggerhead (<i>Caretta caretta</i>); Kemp's Ridley sea turtle (<i>Lepidochelys kempii</i>)	June to November	June 1 to Nov. 30	frequent visitors to Cape Cod Bay and south of Cape Cod in summer and fall.	crabs and mussels	endangered	Endangered	Endangered
Green sea turtle (<i>Chelonia mydas</i>); Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	June to November	June 1 to Nov. 30	infrequent visitors to area	green turtle feeds on submerged aquatic vegetation and hawksbill feeds on sea anemones and invertebrates	endangered	Endangered	Endangered

Note:
See annotated references listed by species in Appendix C