

SELF STUDY MATERIAL

PREPARED BY BINOD BIHARI PRUSETH

DESIGNATION- LECTURER IN ZOOLOGY

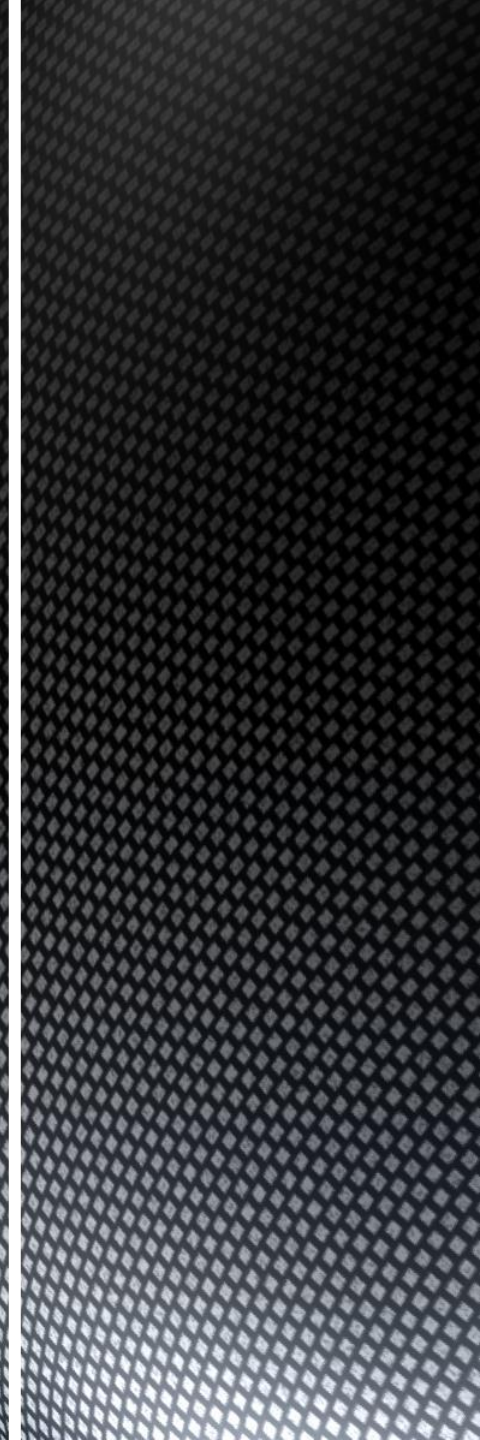
BASUDEV GODABARI DEGREE COLLEGE, KESAIBAHAL

SEMESTER—3RD

TOPIC- FISH MIGRATION

PAPER- DSC-H-ZOO-V

UNIT--2



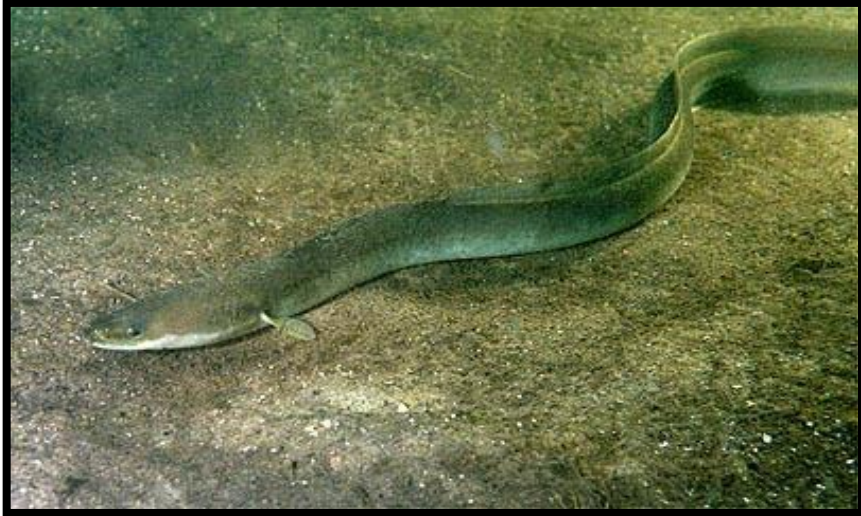
Migration of Fish

Long journeys taken by fishes from one place to another and back.

Reasons for migration

- (i) Feeding
- (ii) Overcome environmental extremes
- (iii) Sexual maturity
- (iv) Hormones
- (v) Instinct
- (vi) Predators and competition

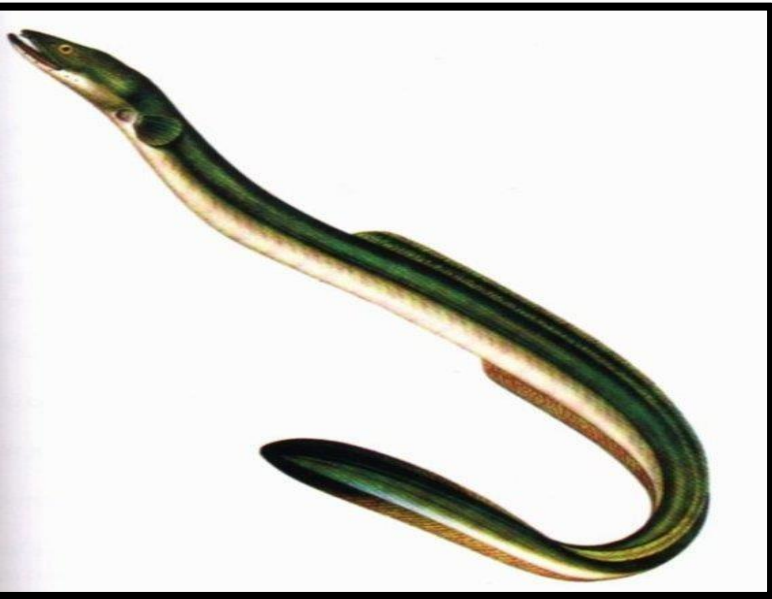
Migratory fishes



Anguilla anguila



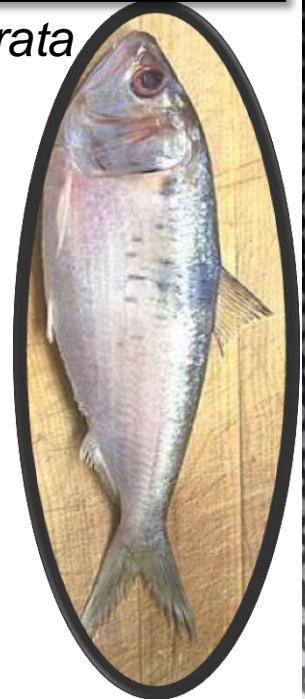
Anguilla rostrata



Anguilla vulgaris

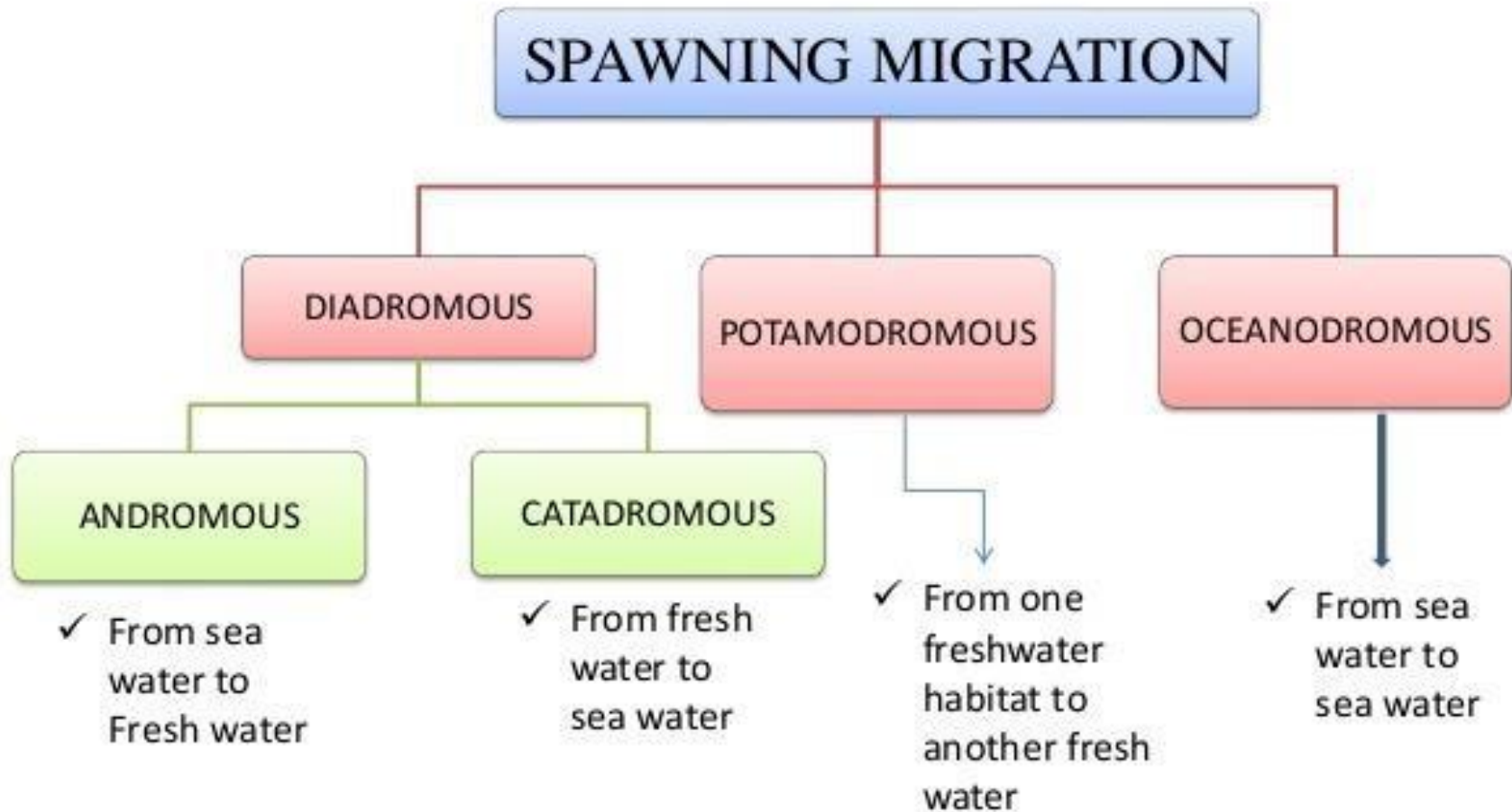


Salmo salar



Hilsa hilsa

Types of Migration



Types of Migration

- (i) Latitudinal migration – north (spring) and south (autumn).
- (ii) Oceanodromous migration – from native place to a far off place. Eg. Tunas, mackerels, etc.
- (iii) Potamodromous migration – long movement within fresh water. Eg. Carps, trouts.
- (iv) Catadromous migration – from fresh water to sea water for spawning (fresh water fishes). Eg. Eels.
- (v) Anadromous migration – from sea water to fresh water (marine fishes). Eg. Salmons, Indian shad.

Type of Fish Migration



Sword fish (Latitudinal migration)

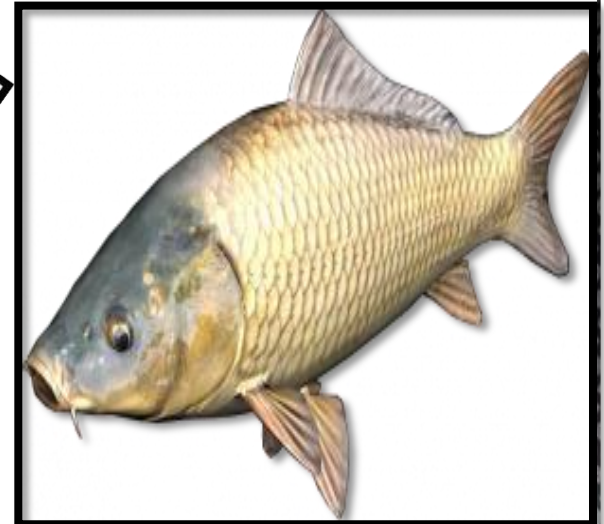
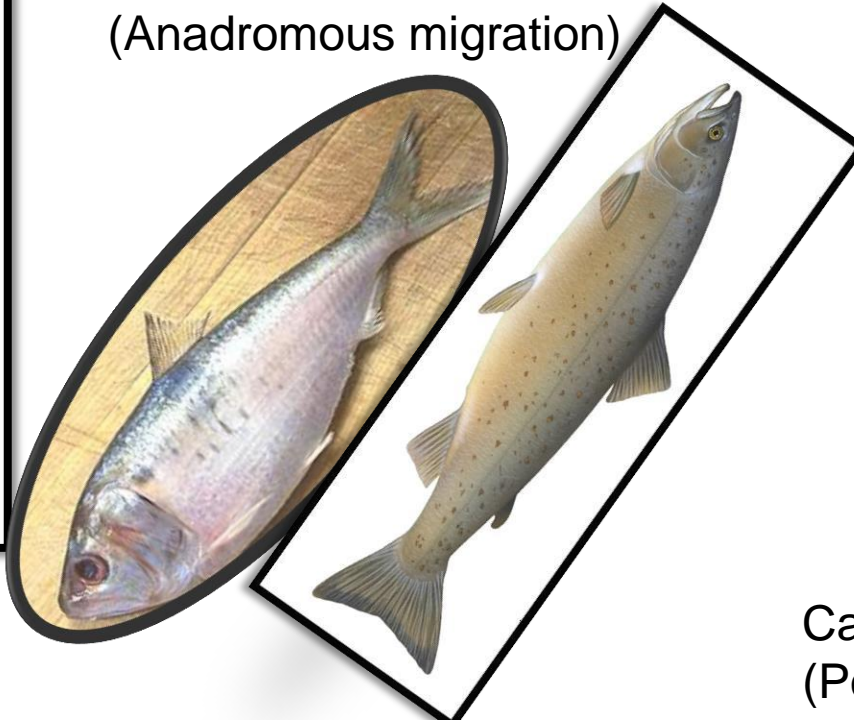


Tunas (Oceanodromous migration)



Eel (Catadromous migration)

Hilsa hilsa & *Salmo salar*
(Anadromous migration)



Carp & Trout
(Potamodromous migration)

Eel migration (Catadromous migration)

Four phases of life of Eel:

- (i) Adult yellow coloured eel (in rivers).
- (ii) Silver grey coloured eel (ready for migration).
- (iii) Pelagic larval phase (Leptocephali).
- (iv) Metamorphosis of pelagic larval phase to Elver's larva.

4 Phases of Eel Life Cycle



Phase 1: Adult yellow eel



Phase 2: Silver grey eel ready for migration



Phase 3: Larval phase of eel (Leptocephalus larva)



Metamorphosis of Leptocephalus to Elver's larva (Glass eel)

Salmon migration (Anadromous migration)

Marine fish, migrates to fresh water for breeding.

In winter, pair of salmon migrates from sea water to fresh water and stop feeding.

Then, sexual dimorphism appears and they spawn.

After hatching, larval fish feed and migrate back to sea.

Other anadromous fishes : acipenser, hilsa, alosa.

Fishes showing seasonal migration

- *Thunnus (Tuna fish) in Mediterranean sea.*
- *Scomber (mackerel fish) in north Atlantic sea.*
- *Clupea (herring fish) in colder parts of Atlantic ocean.*

Petromyzon (sea-lamprey) migration (Anadromous migration)

They inhabit coastal waters of north America, Europe, West Africa and Japan.

They ascend rivers in spring or early summer.

A pair seeks clear, moderately fast flowing water, and builds a nest there.

A single female can lay 236,000 eggs.

Eggs hatch in about 3 weeks.

Larval life extends from 5-8 year.

Reaching the sea, they take to parasitic life.



Ammocete larvae in fresh water



Adult lamprey attached to trout fish in sea water