MIGRATION OF FISHES

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

Reasons/Cause for migration

(i) Sexual maturity
(ii) Hormones
(iii) Instinct
(iv) Predators and competition
(v)Scarcity of food
(vi) Abiotic factors like light, temp., pH, water currents, etc.
(vii)To avoid unfavorable conditions
(viii)To enhance the chance of survival of the offsprings

MIGRATORY FISHES

Anguila anguila

Anguila rostrata

Anguila vulgaris

Salmo solar

Hilsa hilsa

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, Cod, Herrings, Flat fishes 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, Hilsa etc.*

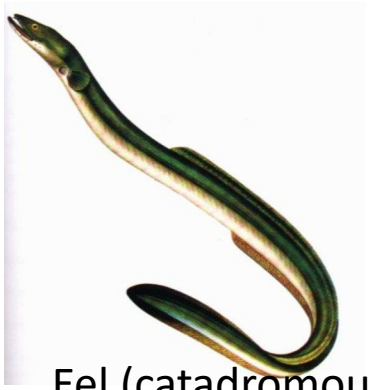
(vi) Amphidromous migration *–from freshwater to sea water or vice versa is not for spawning. Eg. Bigmouth sleeper, Mountain mullet, Sirajo goby, River goby etc.*

TYPE OF FISH MIGRATION

Tunas
(oceanodromous
migration within sea)

Sword fish (latitudinal migration
)

Hilsa hilsa (anadromous
migration
Sea water to F.W)



Carp &
Trout(potamo
droumous)

Eel (catadromous migration
F.W. to sea water)

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 IN L.H OF EEL

Adult yellow eel

Silver grey eel ready for migration

Larval phase of eel

Metamorphosis Elver's larva

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

- Thunners (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 and eggs hatch in about 3 weeks.

•Larval life extends from 5-8 year. Reaching the sea, they take to parasitic life.

SEA-LAMPREY (ANADROMOUS MIGRATION)

Ammocete larvae in fresh water

Adult lamprey attached to trout fish in sea water

Advantage or significance of Migration

- Migration is considered to be an adaptation towards abundance, as it ensures reproductive success of the group.

- The spawning or nursery grounds may not have enough food and therefore, both mature and young individuals of a large population cannot be maintained there. Therefore, separate spawning and feeding area is advantageous to the species.

- Most of the commercially important species are migratory thus supporting the view that migration is an adaptation towards abundance.

- Presence of large numbers of spawner of both the sex at spawning grounds ensures reproductive success and survival of the species.