

# Reproductive strategies in fishes

# Reproductive strategies

bearers - carry eggs and/or fry with them



# Reproductive strategies

bearers

- external bearers

transfer: Gasterosteidae, Sygnathidae (pipefishes,  
seahorses)

grade from attachment to skin, to open pouch,  
to closed pouch

gill chambers, forehead

obstetrical catfish carry eggs on ventral surface



# Reproductive strategies

bearers

- external bearers

mouth: males or females

some cichlids and bony tongues



# Reproductive strategies

bearers

- internal bearers (viviparity)

facultative - killifishes

obligate - Lake Baikal sculpins,  
marine rockfishes (Scorpaenidae)

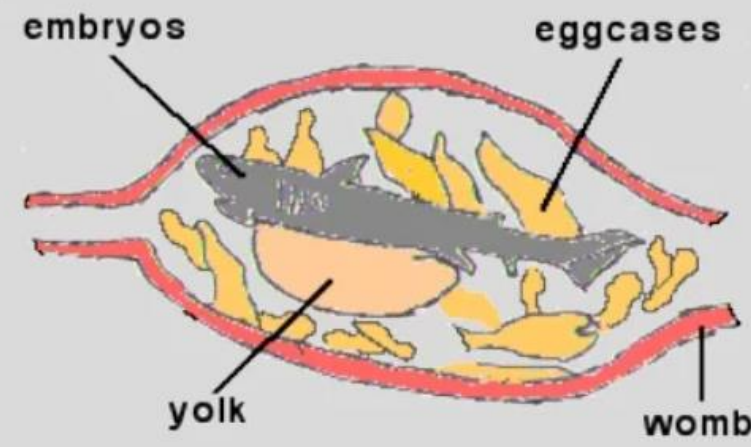
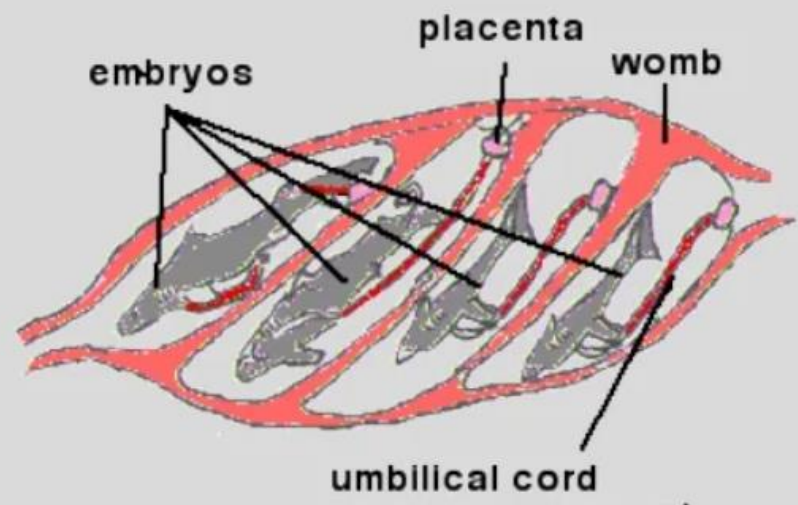
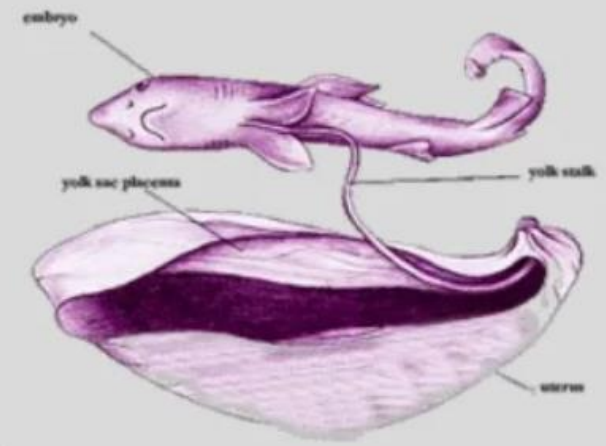
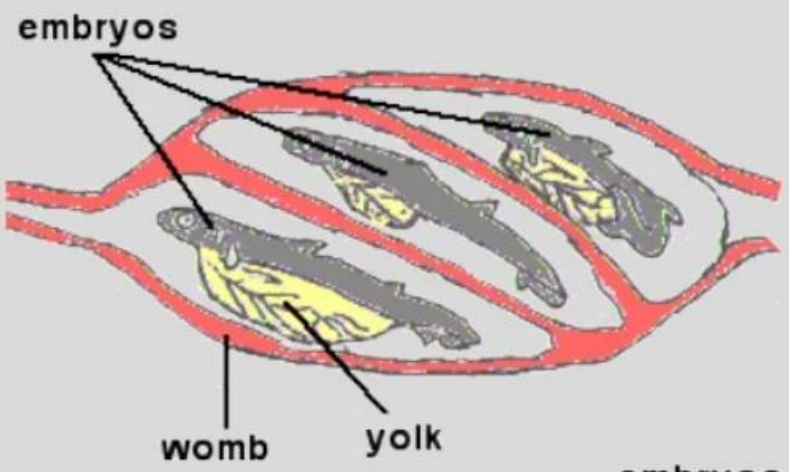
livebearers - Poeciliids, many sharks

gradient of nutrient supply from mother

superfetation

placental viviparity - sharks





# Alternative reproductive strategies

## Hermaphrodites

synchronous (or simultaneous) hermaphrodites

Myctophiformes: (lanternfishes) - several families

Atheriniformes: Aplocheilidae, Poeciliidae

Perciformes: Serranidae (sea basses, hamlets),  
Labridae (wrasses), and others

"Egg-trading" in black hamlets *Hypoplectrus nigricans* (serranid)



# Alternative reproductive strategies

## Hermaphroditism

consecutive (sequential) hermaphrodites

first male (protandrous) – less common

Stomiiformes (lightfish, dragonfish)

Scorpaeniformes: Platycephalidae

Perciformes: Serranidae, Labridae, and others



blue-headed wrasse



first female (protogynous)

eels

Synbranchiformes (swamp– only freshwater example)

Perciformes: Serranidae, Maenidae, Labridae

# Alternative reproductive strategies

## parthenogenesis:

females produce diploid eggs, no sperm used

premeiotic endomitosis - mitotic division without cytokinesis

## gynogenesis:

females produce diploid eggs, use sperm to stimulate development

male genome not used

congeneric species are used for sperm

## hybridogenesis: one genome from female in egg,

male genome discarded - then uses sperm to restore ploidy

- no crossing over

example: *Poeciliopsis monacha-lucida*

Natural polyploids

triploids - Cyprinidontiformes: Poeciliid triploids

tetraploids (autotetraploids vs. allotetraploids)

hexaploids and octaploids (rare in carp)

Natural hybrids

salmonids

centrarchids



THANK

YOU