

Balon's Classification: Modes of Reproduction Eco-ethological Guilds in Fish

<u>Category</u>	<u>Habitat</u>	<u>Examples</u>
I. NONGUARDERS (11 guilds)		
A. BROADCAST SPAWNERS:		
1. Pelagophils	Water Column	Striped Bass; Cod; Flounder
2. Lithophils	Rocks	Walleye; Whitefish
3. Phytophils	Aquatic Plants; Flooded Vegetation	Pike Family; Carp
4. Psammophils	Sand	Various Minnows
B. BROOD HIDERS:		
1. Lithophils	Rocks & Gravel	Trout & Salmon
2. Aero-psammophils	Beach Above Tide Line	Grunnion
3. Xerophils	Mud (drying)	Tropical Species
4. Ostracophils	Mussels	Bitterling
II. GUARDERS (12 guilds)		
A. SUBSTRATE CHOOSERS:		
1. Phytophils	Aquatic Plants	White Crappie
2. Aerophils	Terrestrial Plants	<u>Copeina arnoldi</u>

CategoryHabitatExamples

B. NESTERS:

1. Lithophils	Rocks and Gravel	Most Centrarchids
2. Phytophils	Aquatic Plants	Bowfin
3. Speleophils	Holes in Bank	Catfish; Sculpin
4. Ariadnophils	Aquatic Vegetation Held Together with Thread from Kidney	Sticklebacks

III. BEARERS (9 guilds)

A. External Bearers:

1. Skin Brooders	Eggs on Belly of Female	S. American Catfish
2. Pouch Brooders	Eggs in Pouch on Belly	Seahorse
3. Mouth Brooders	Eggs in Mouth	Tilapia Sp.
4. Gill Brooders	Eggs in Gill Arches	N. American Cave-fish

B. Internal Bearers:

1. Ovi-ovoviviparous	Internal Fertilization but Eggs Subsequently Extroded	Some Sharks and Rays
2. Ovoviviparous	Live Birth; Eggs Feed Internally on Yolk	Most Sharks; the Coelacanth; Some Sea Bass
3. Viviparous	Placental Connection Between Uterus and Egg	A Few Sharks Guppies; Mosquito Fish; Swordtails