

# Fish Larvae Research in the Mekong Basin by Thach Phanara



Inland Fisheries Research and Development Institute





# ប្រភេទកូនត្រីបណ្តែតតាមទឹក ទន្លេមេគង្គ

Fish larvae float follow of the Mekong





# Objective

- To know how many fish species spawning and growth in the rainy season .
- To analyze and identify fish larvae drifting downstream of the Mekong .
- To examine by family, genus and species .
- To rear well in ponds for broodstock and release to the wild



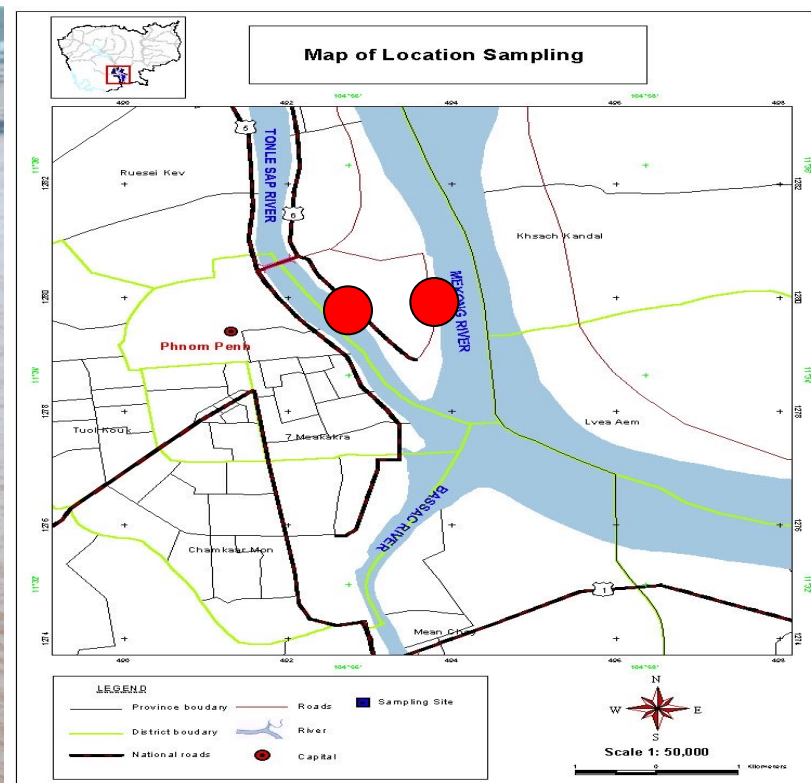
# Method for Research

- Method for Collect fish larvae
- Method for analyze fish Larvae
- Identification fish larvae
- Monitoring of fish larvae Feed well in pond



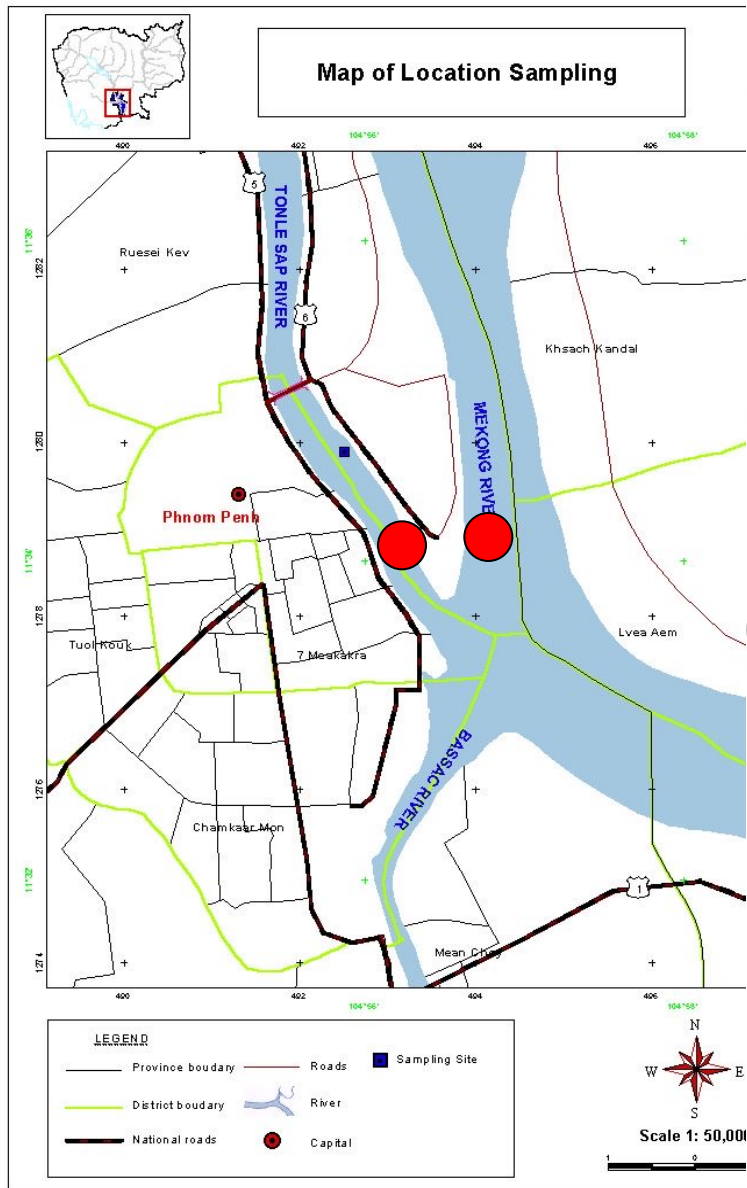
# Method for gather fish larvae

- **Samples collection: were collected by bongo-net with 0.7m diameters mouth; 5m length; 1mm mesh size and set down 1m from bottom.**



# The Lower Mekong Migration System

Fry fish larvae flow by water from May to September





# Method for gather fish larvae

- Sampling location: samples were collected at the Mekong Rivers
- Sampling period: May to September frequency: four times per day at 06:00, 12:00, 18:00 and 24:00 hours, each sampling during 30 minutes



# Sup Sampling









# Species Identification

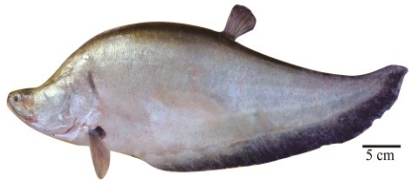




# Fish larvae identification

- Fish freshwater in Cambodia by Walter J.Rainboth
- Fish Freshwater in Lao by Maurice kottelat
- Other Document fish identification studies Research from Internet, Fish base. and from Thai Land about fish larvae species.

# We Should be know or understand about adult of Fish Species





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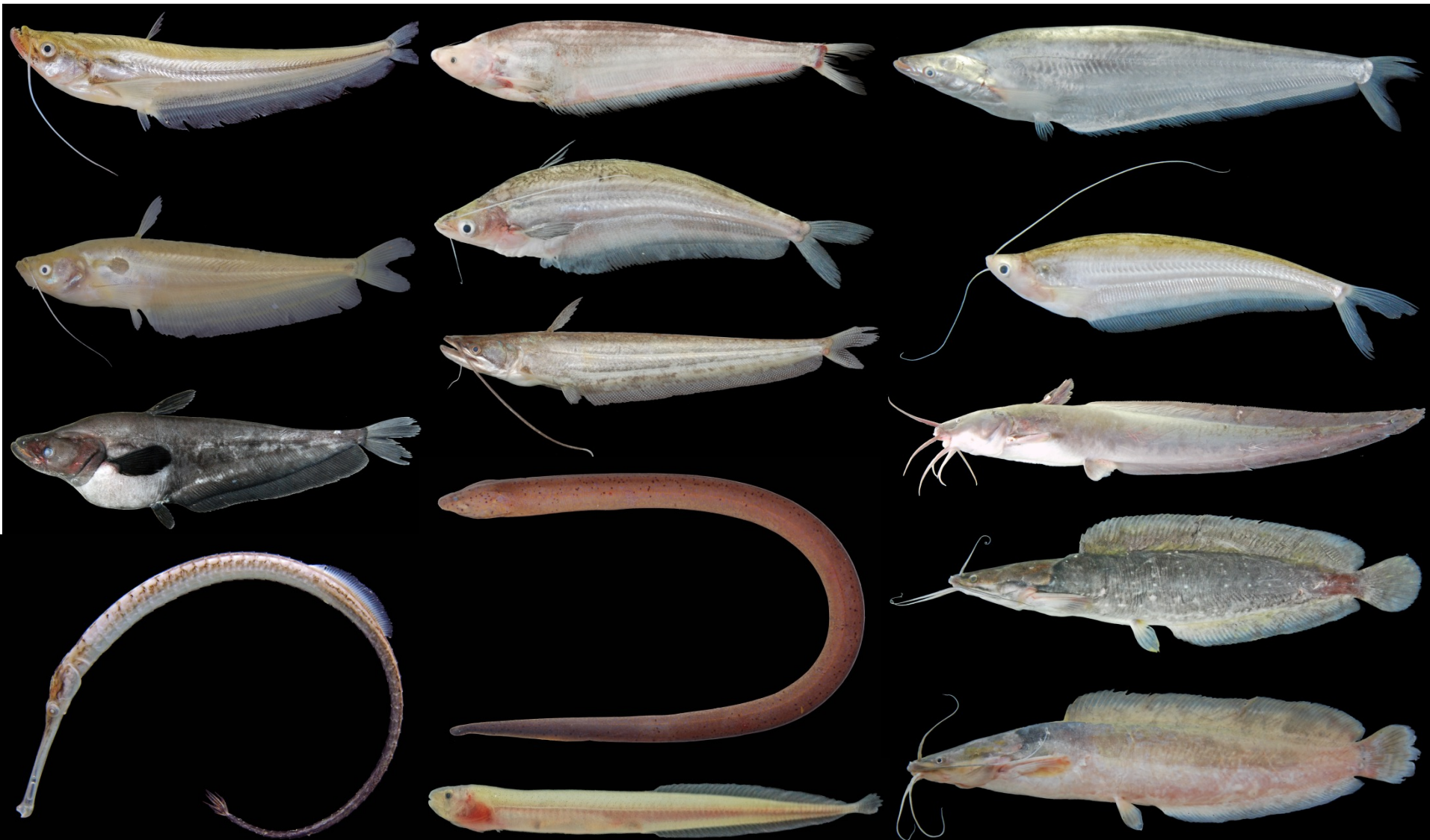


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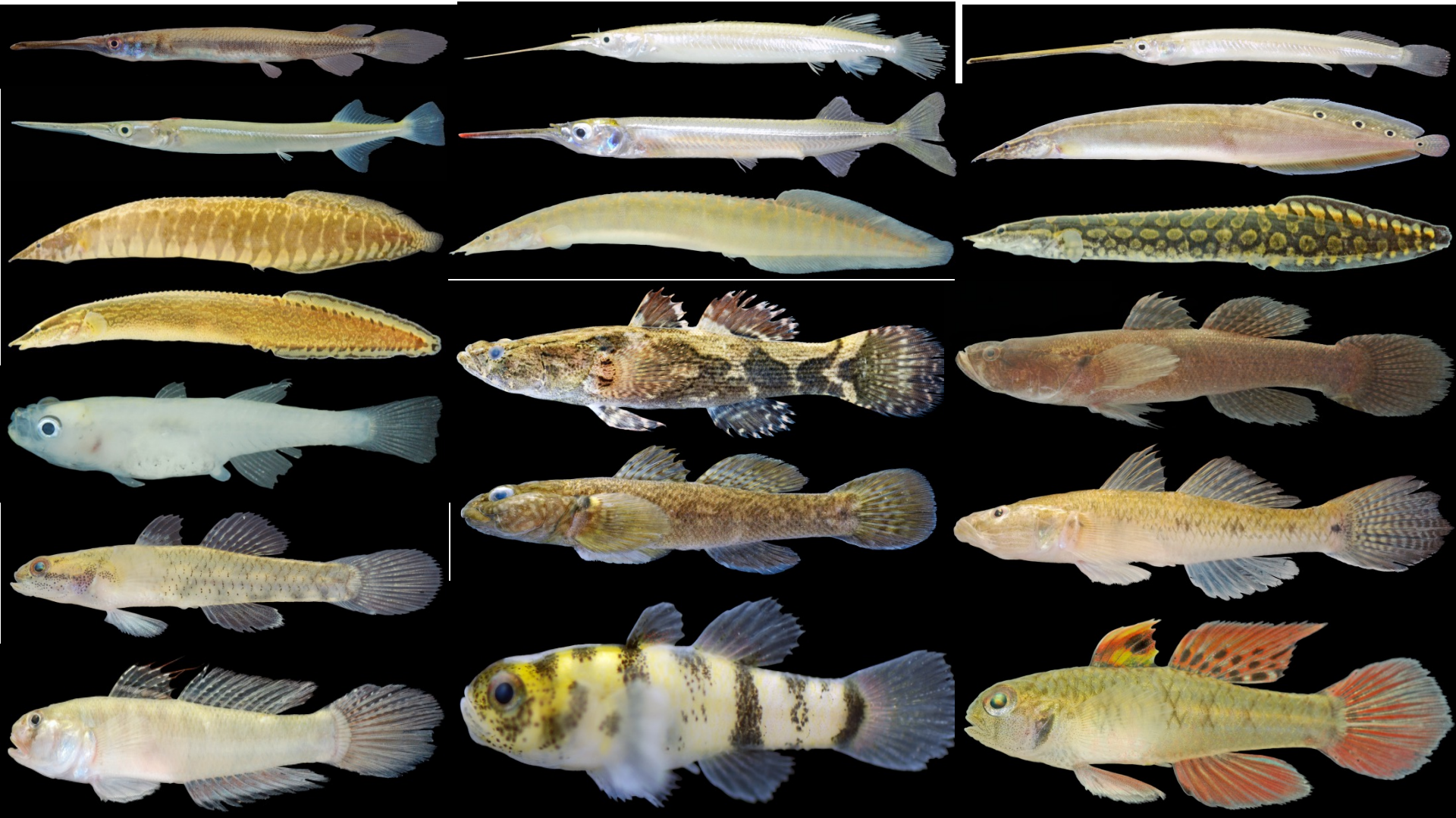


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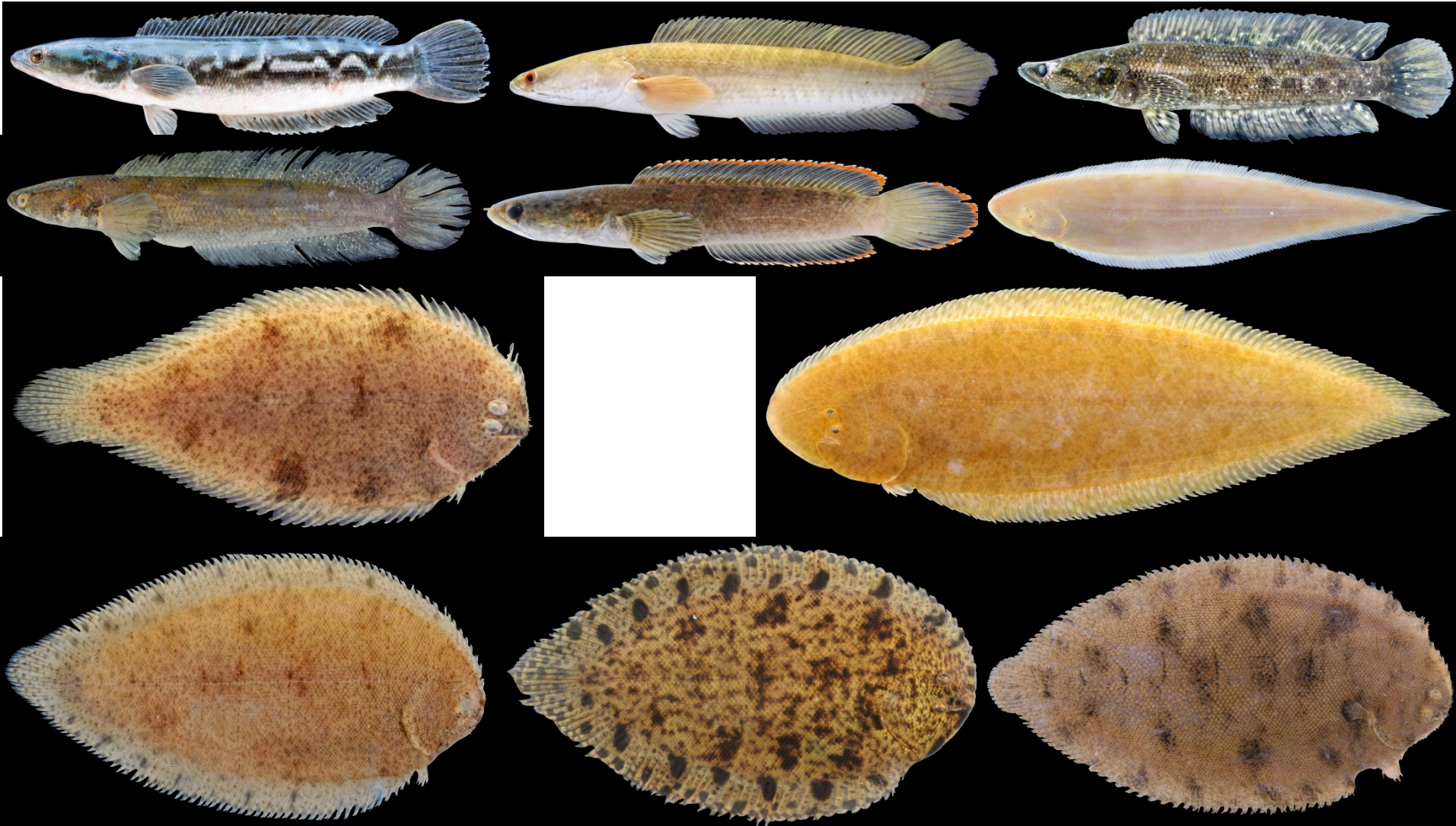


# We Should know or understand about adult Fish Species





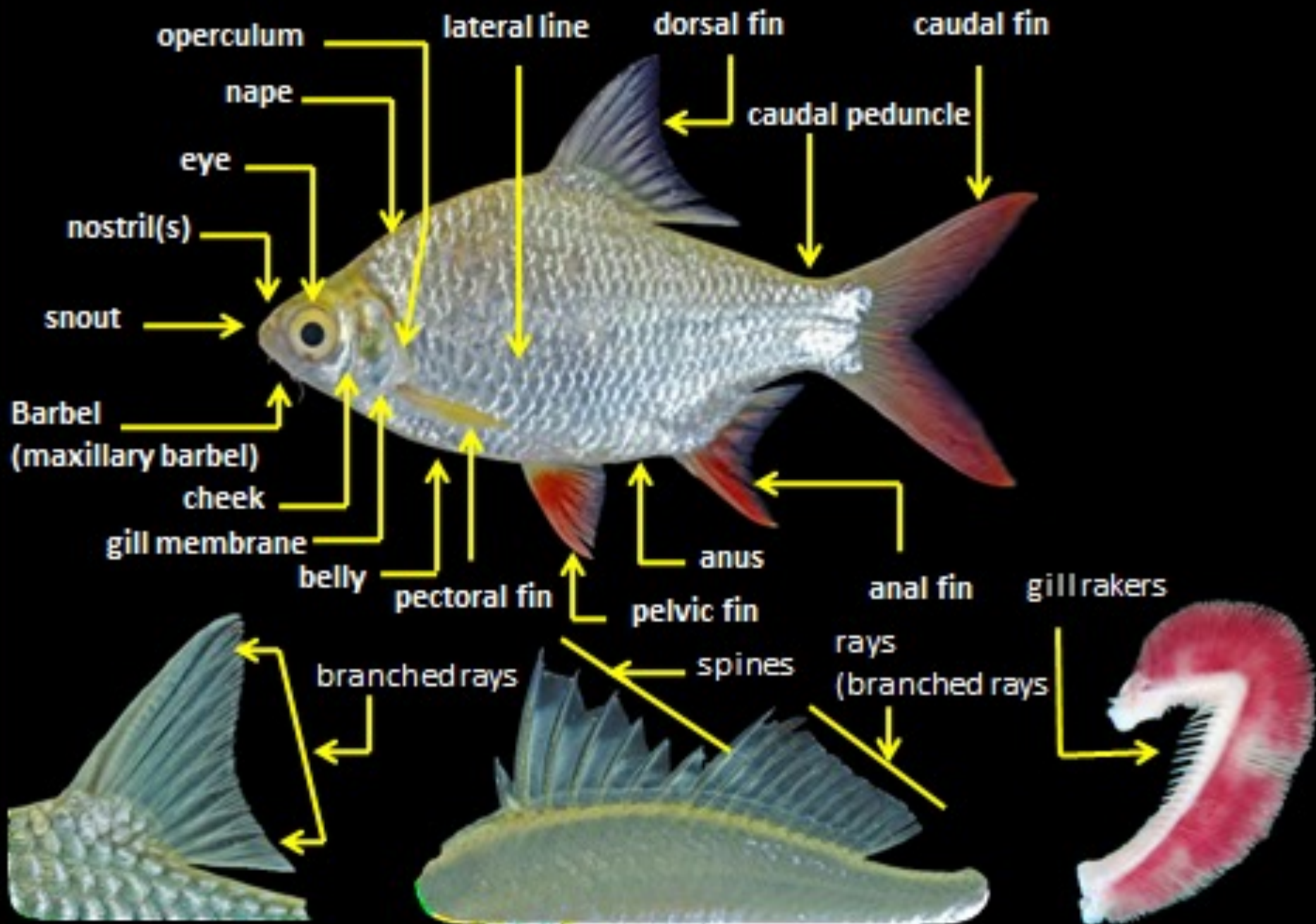
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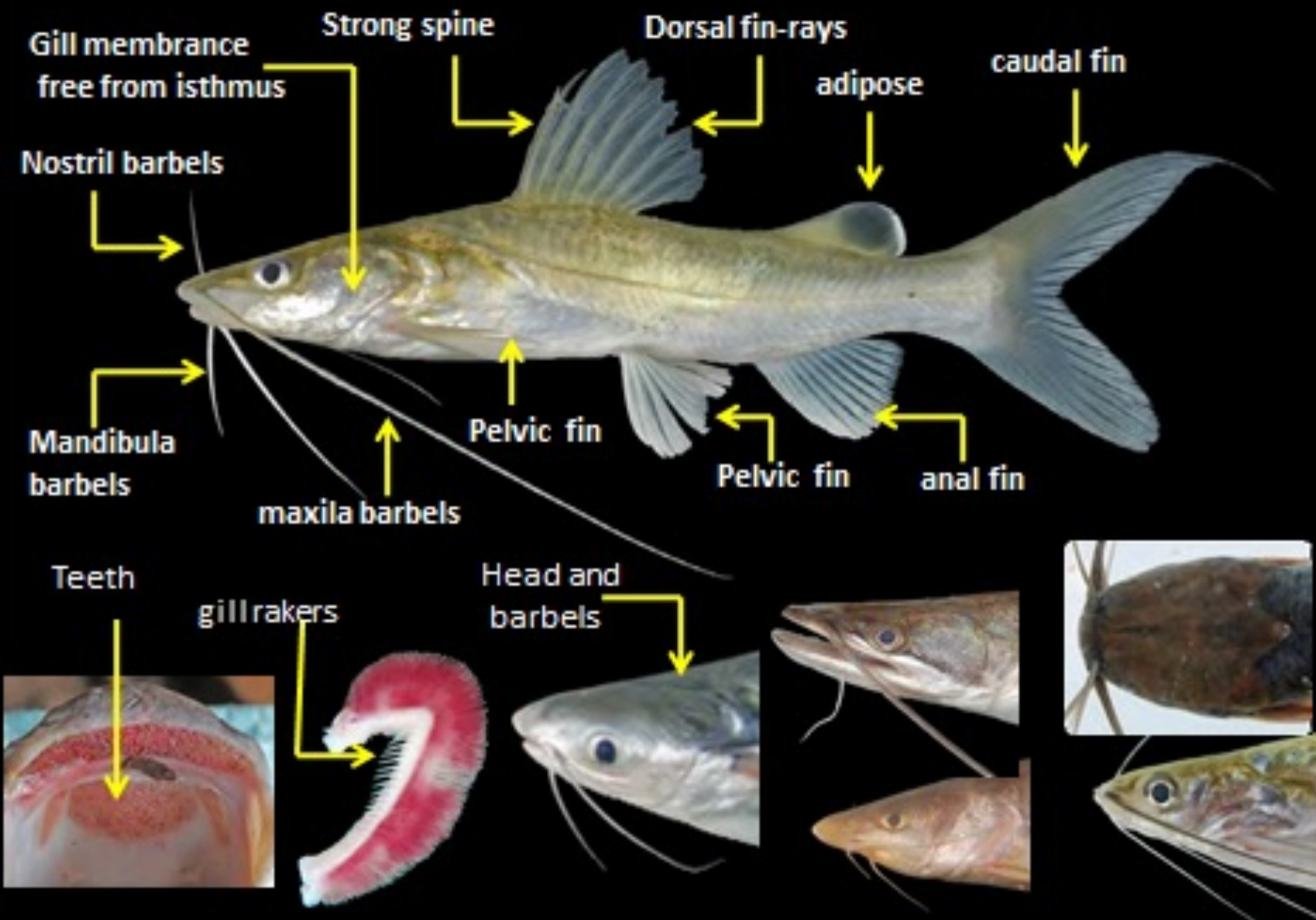


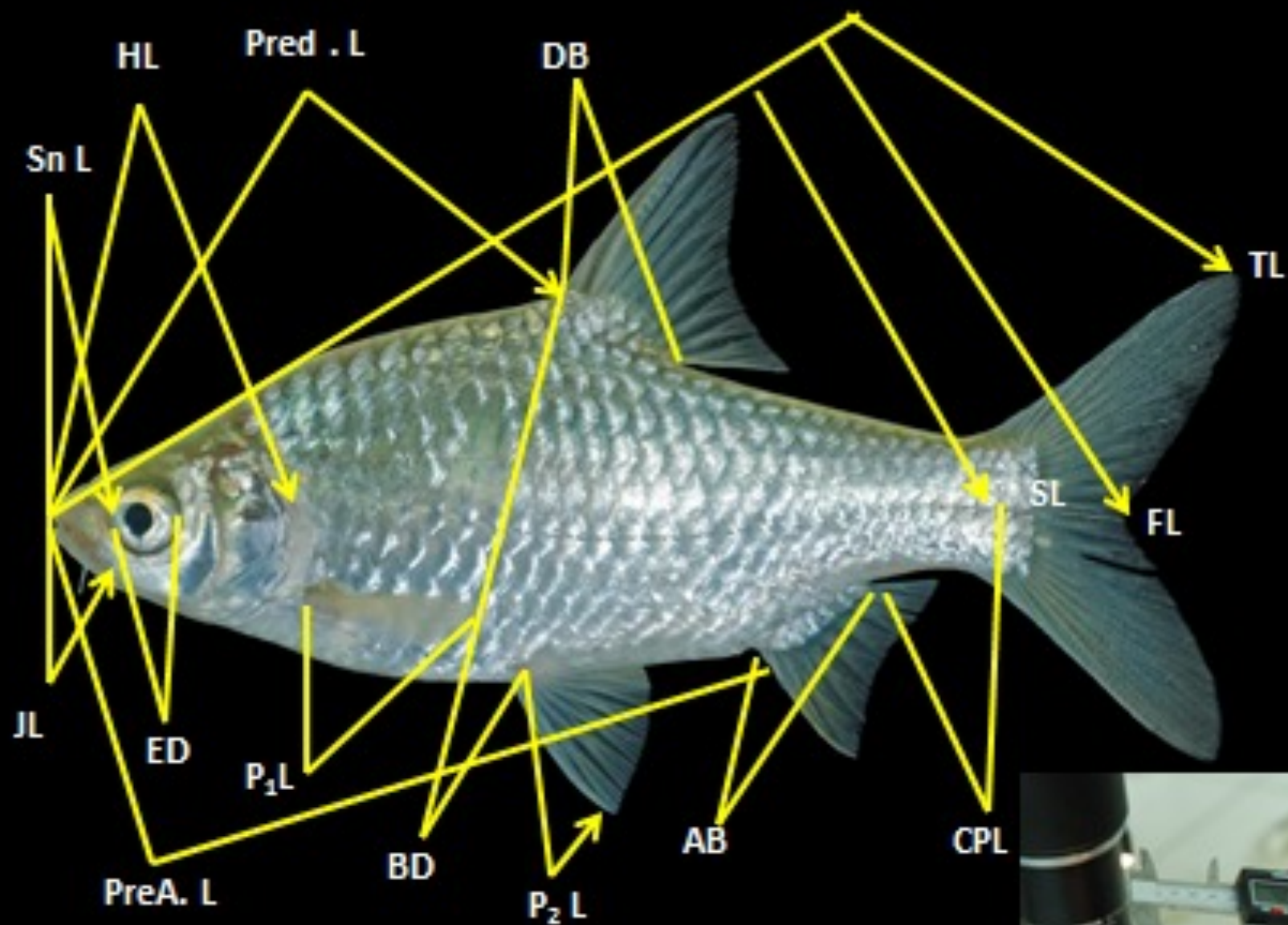
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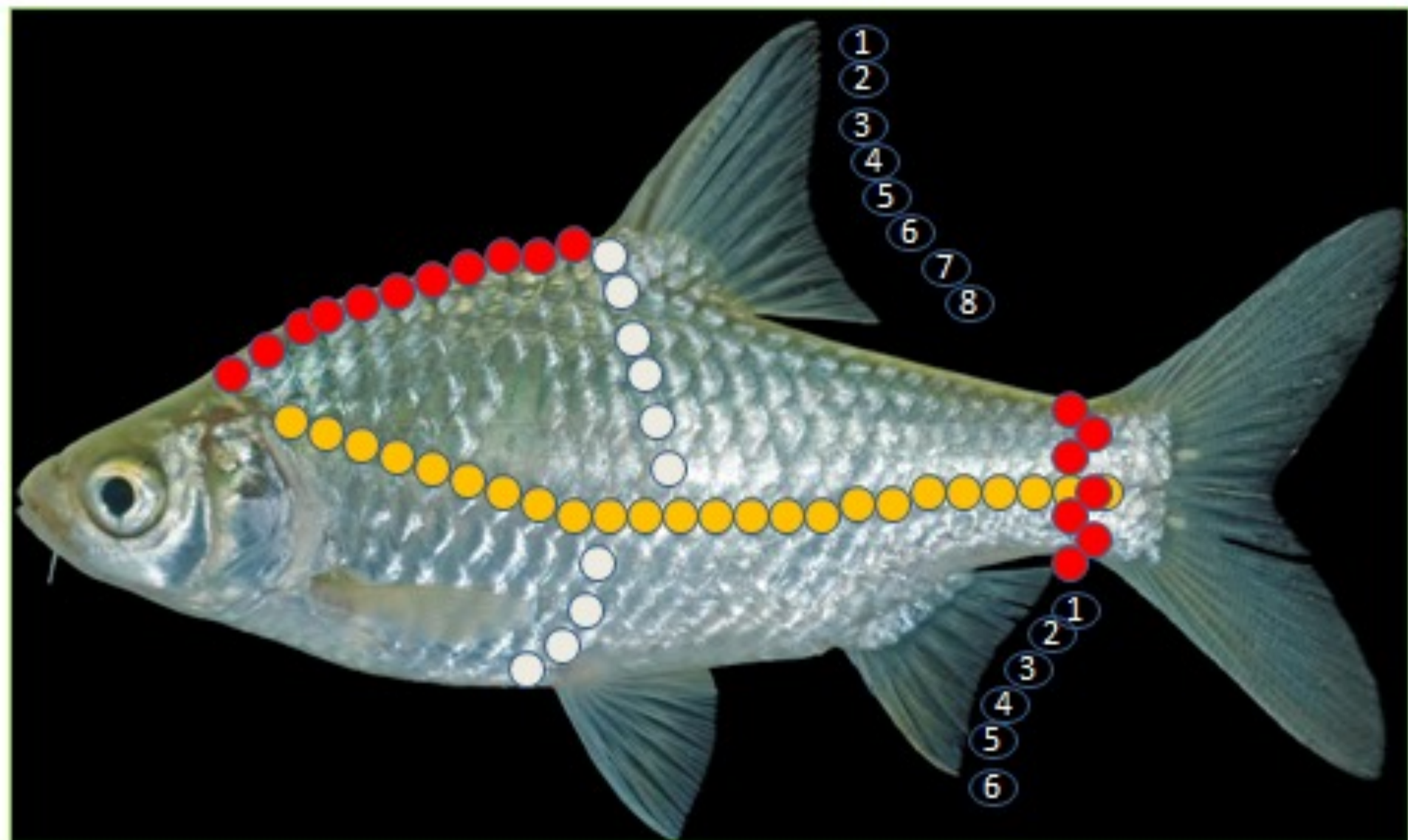






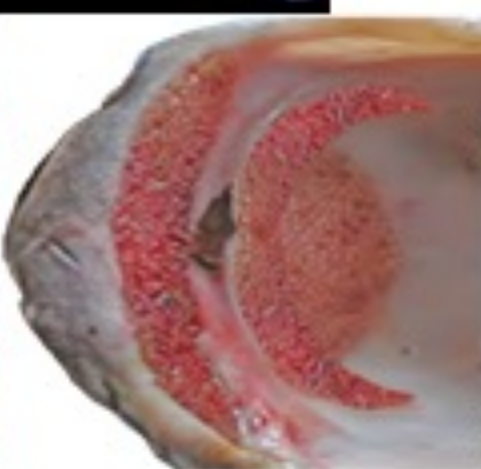


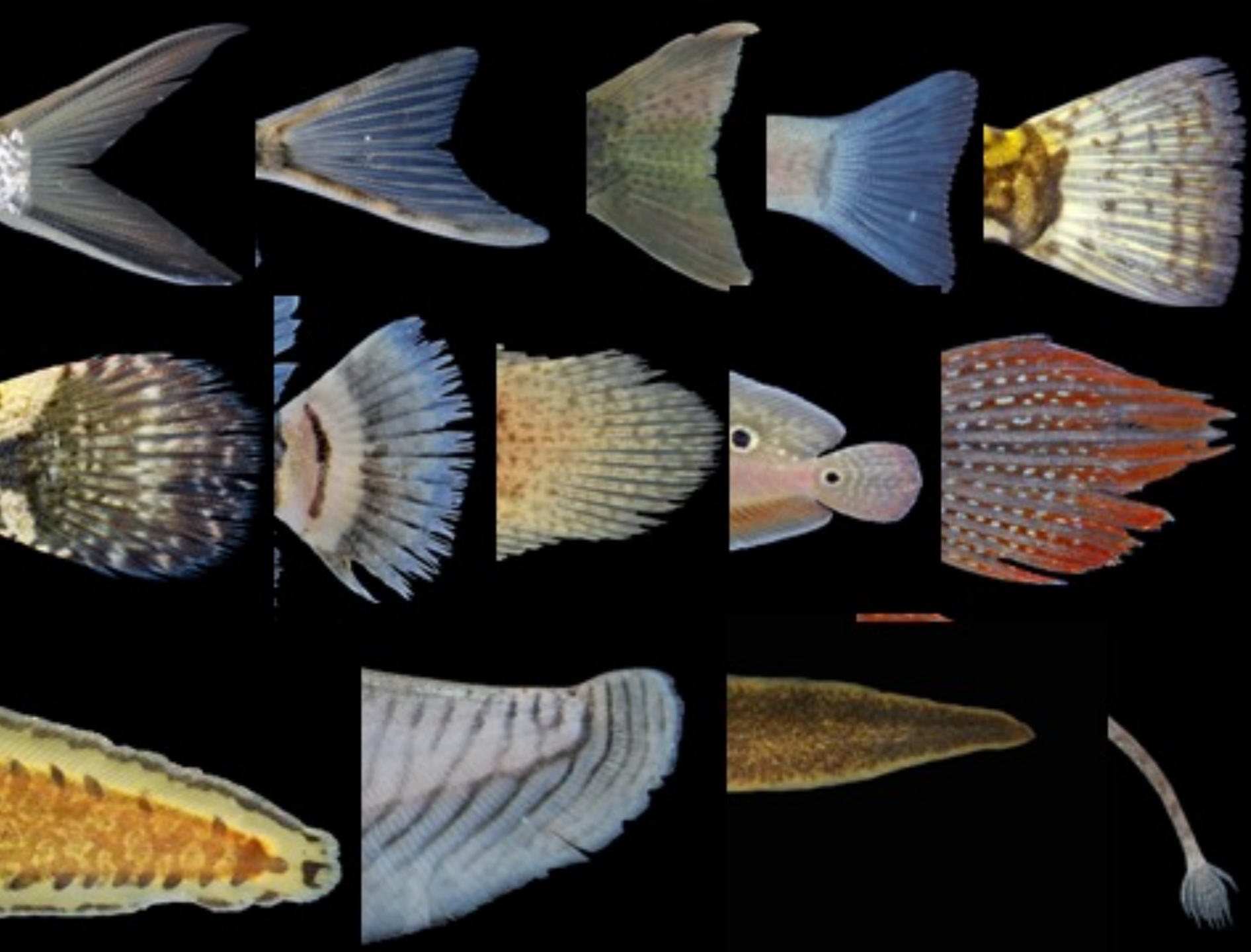






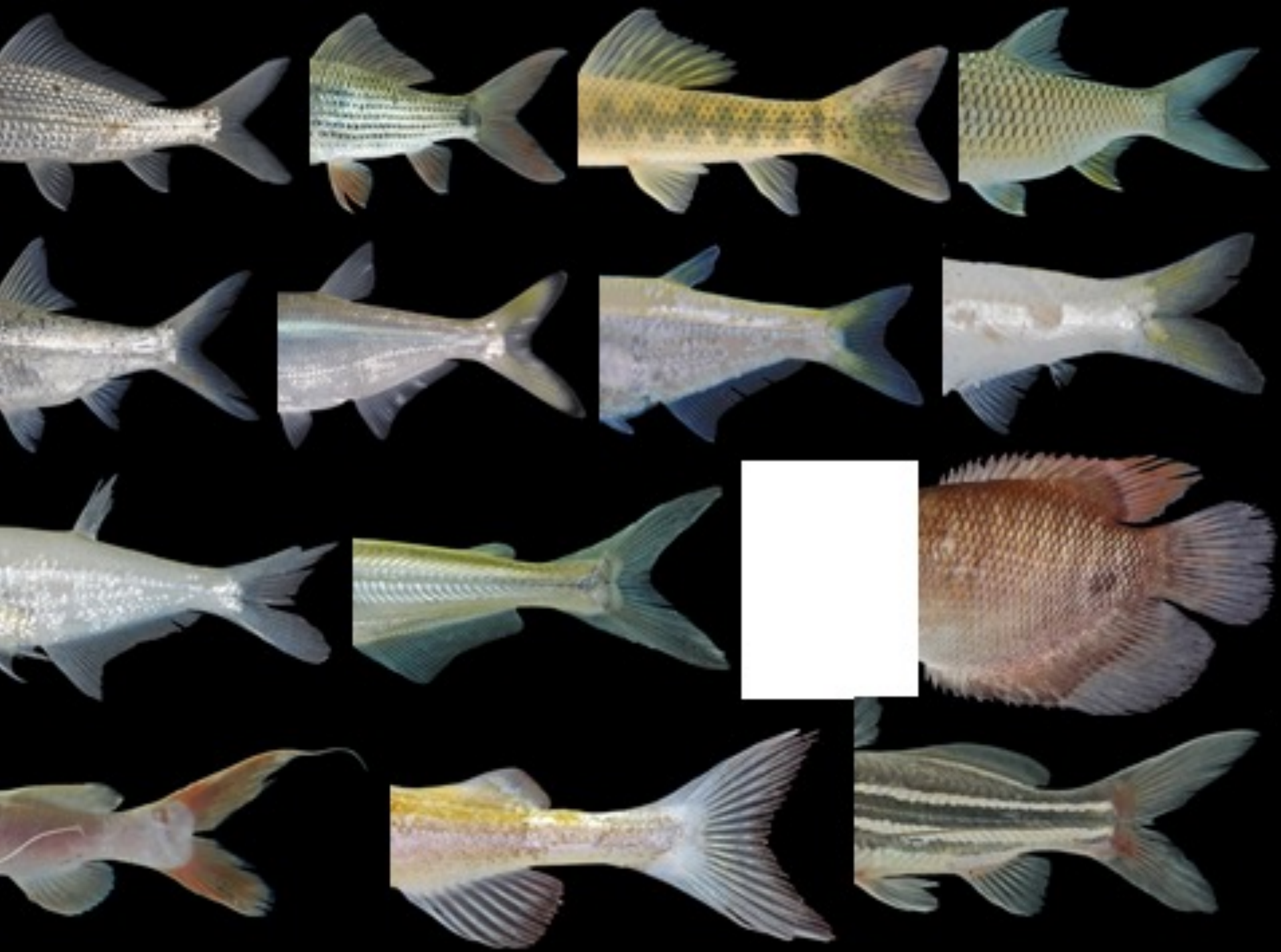










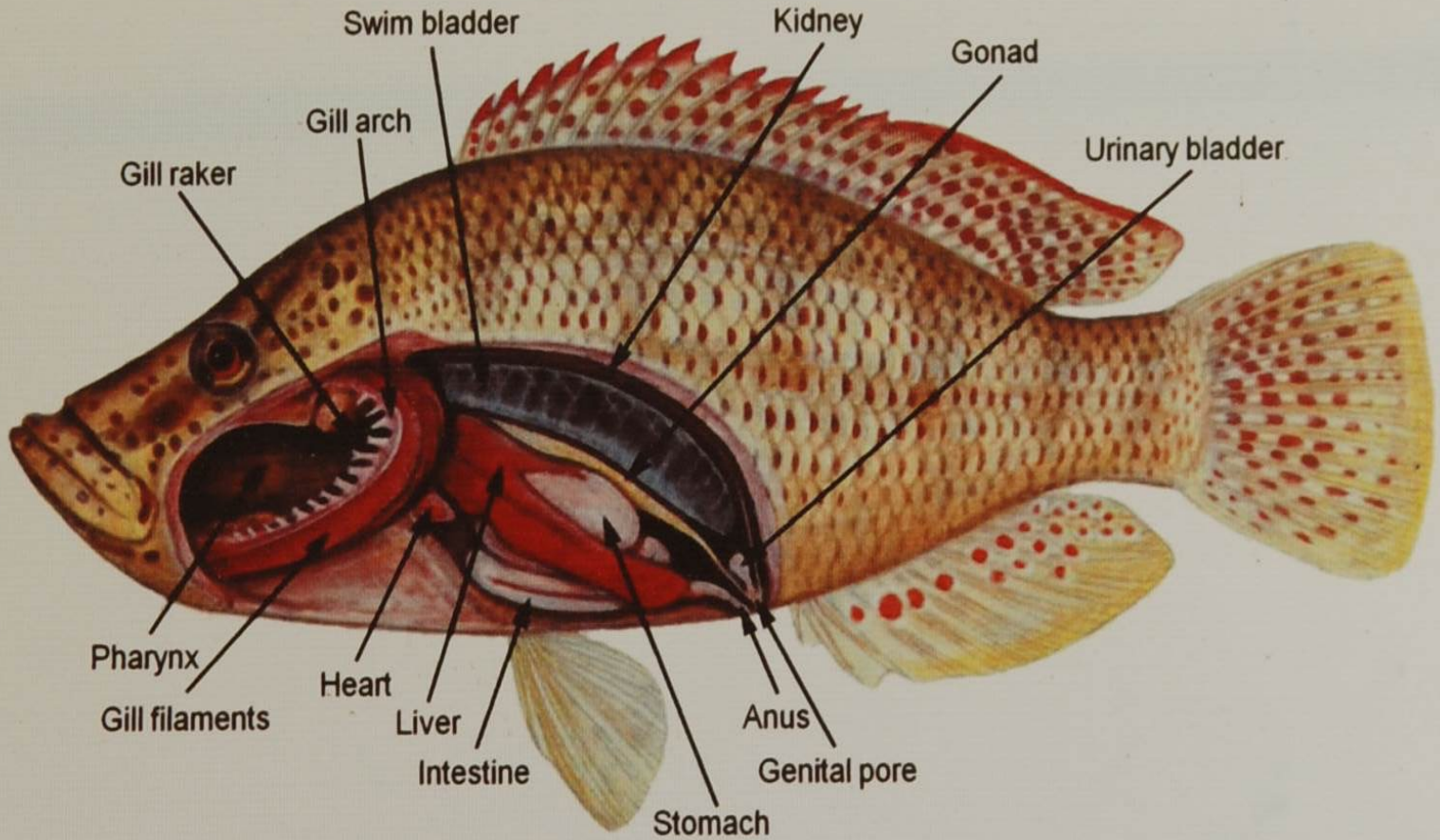




# កាយវិភាគរូបសាស្ត្ររបស់ត្រី Anatomy of Fish



រូបសាស្ត្រខាងក្នុងរបស់ត្រី  
Internal Anatomy of Fish



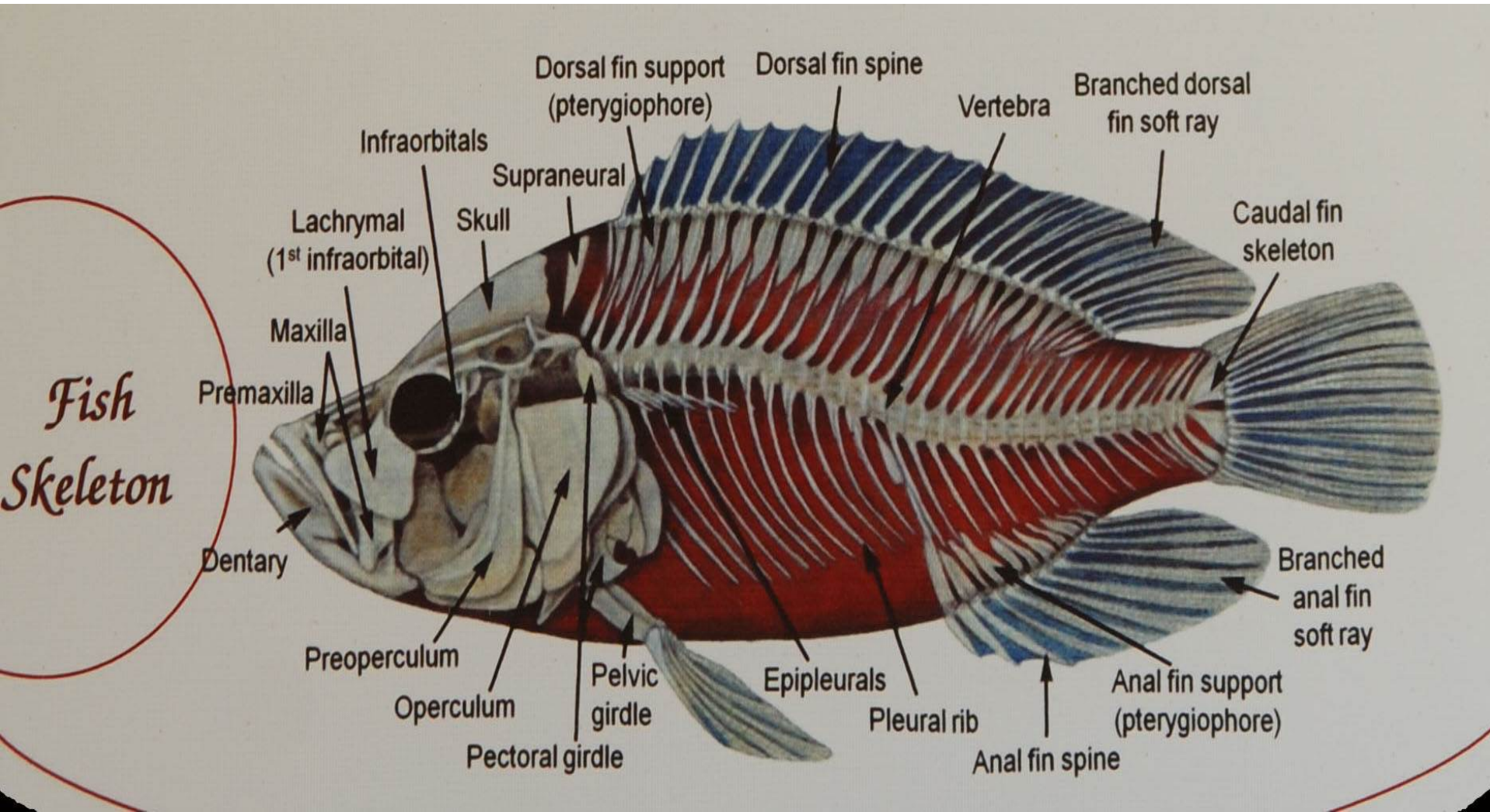
*Fish  
Internal  
Anatomy*

# កាយវិភាគរូបសាស្ត្ររបស់ត្រី

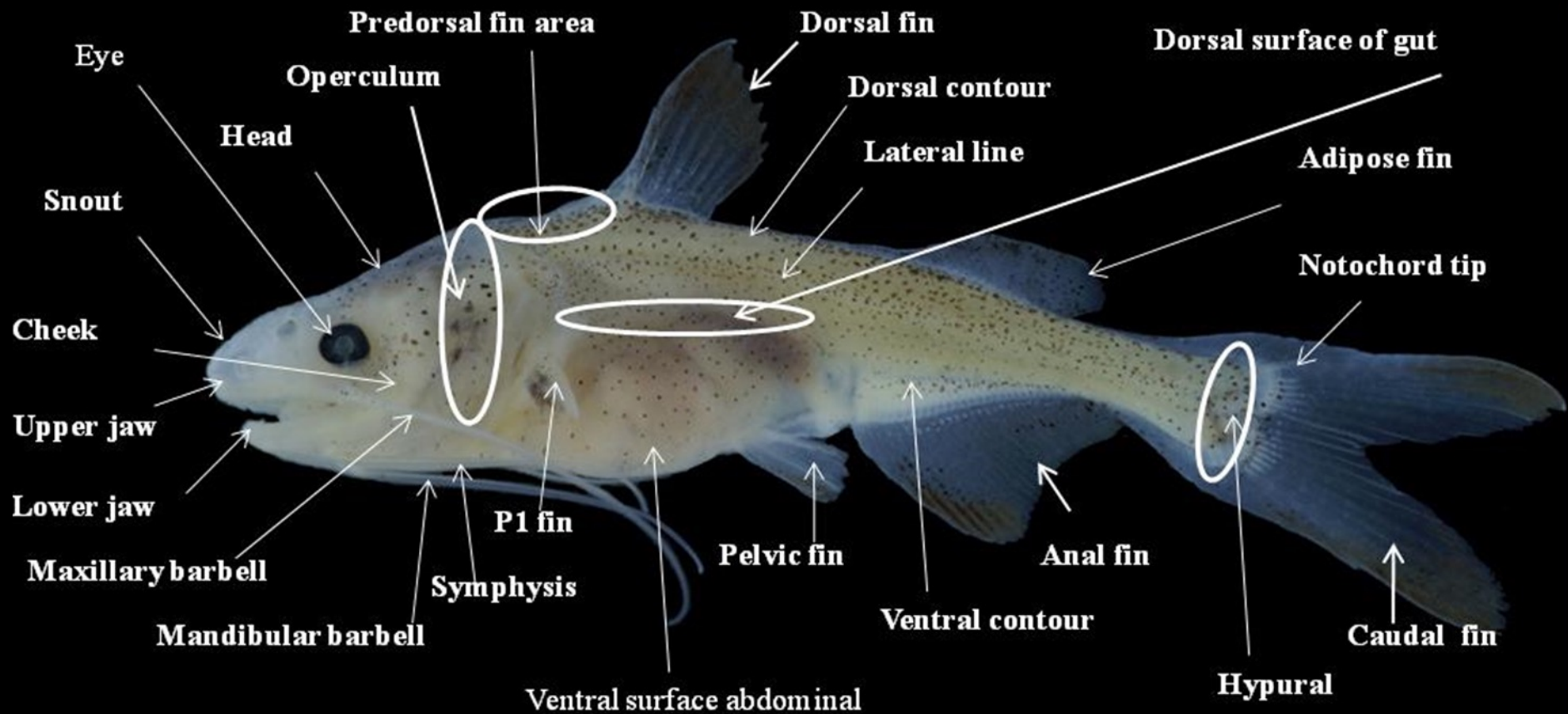
## Anatomy of Fish

### គ្រោងឆ្អឹងរបស់ត្រី

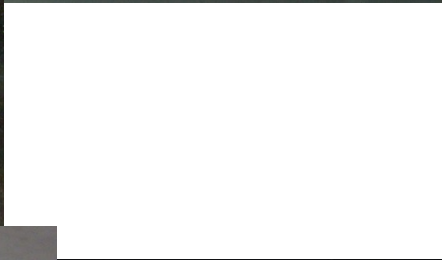
### Skeleton of Fish





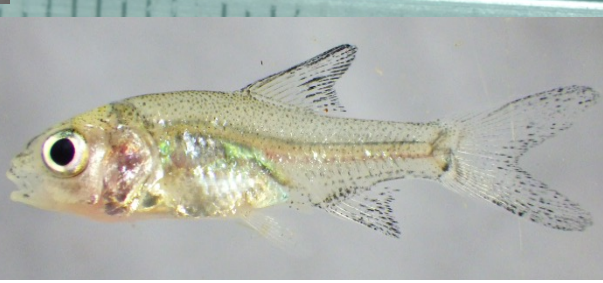
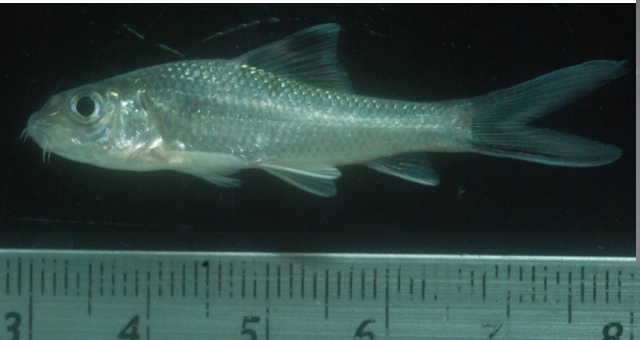
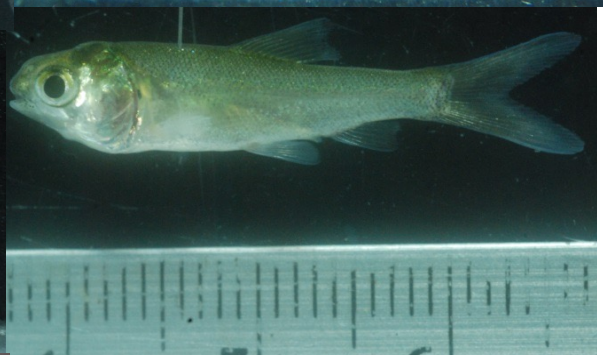


# fish larvae Identification



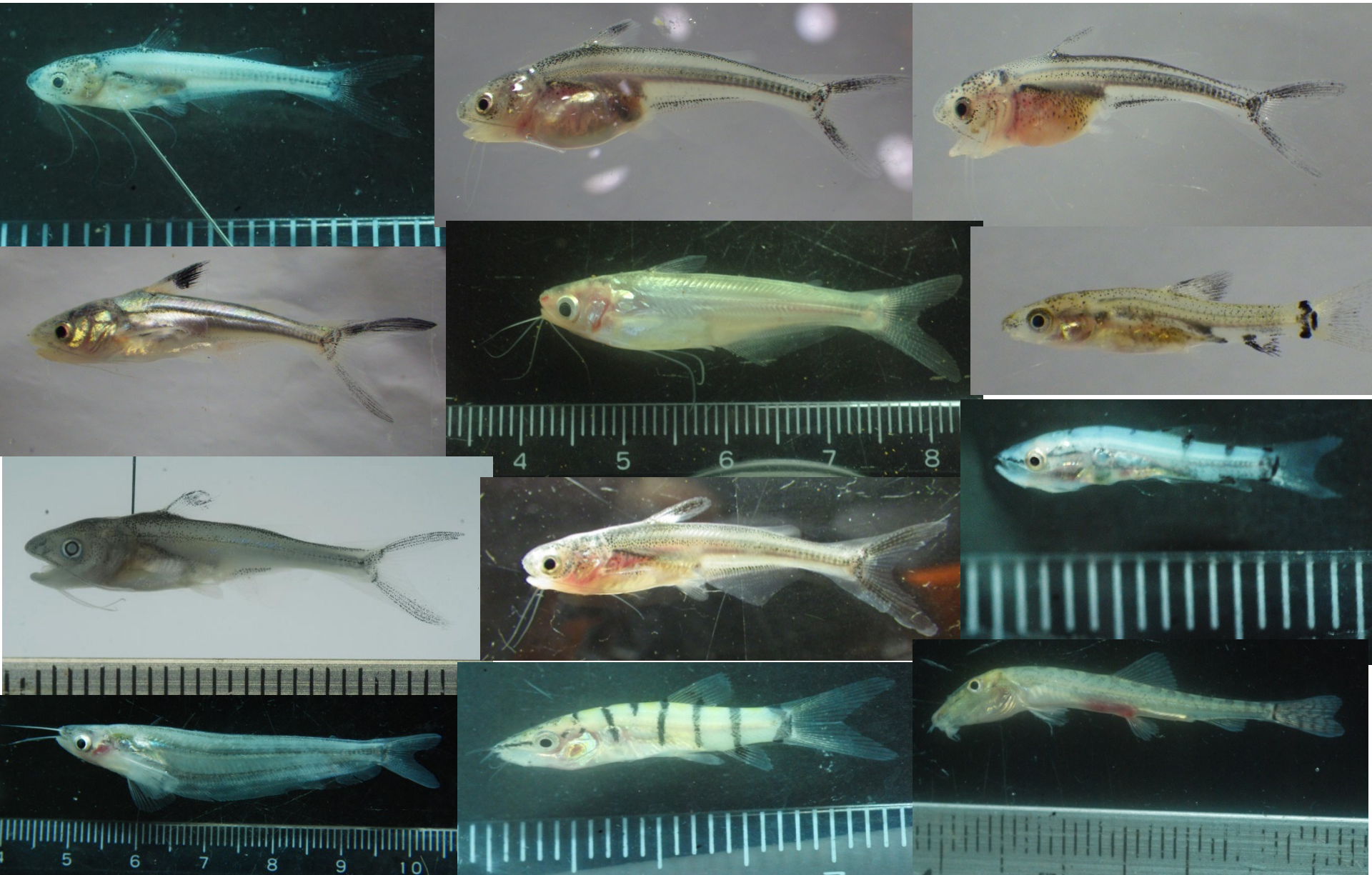


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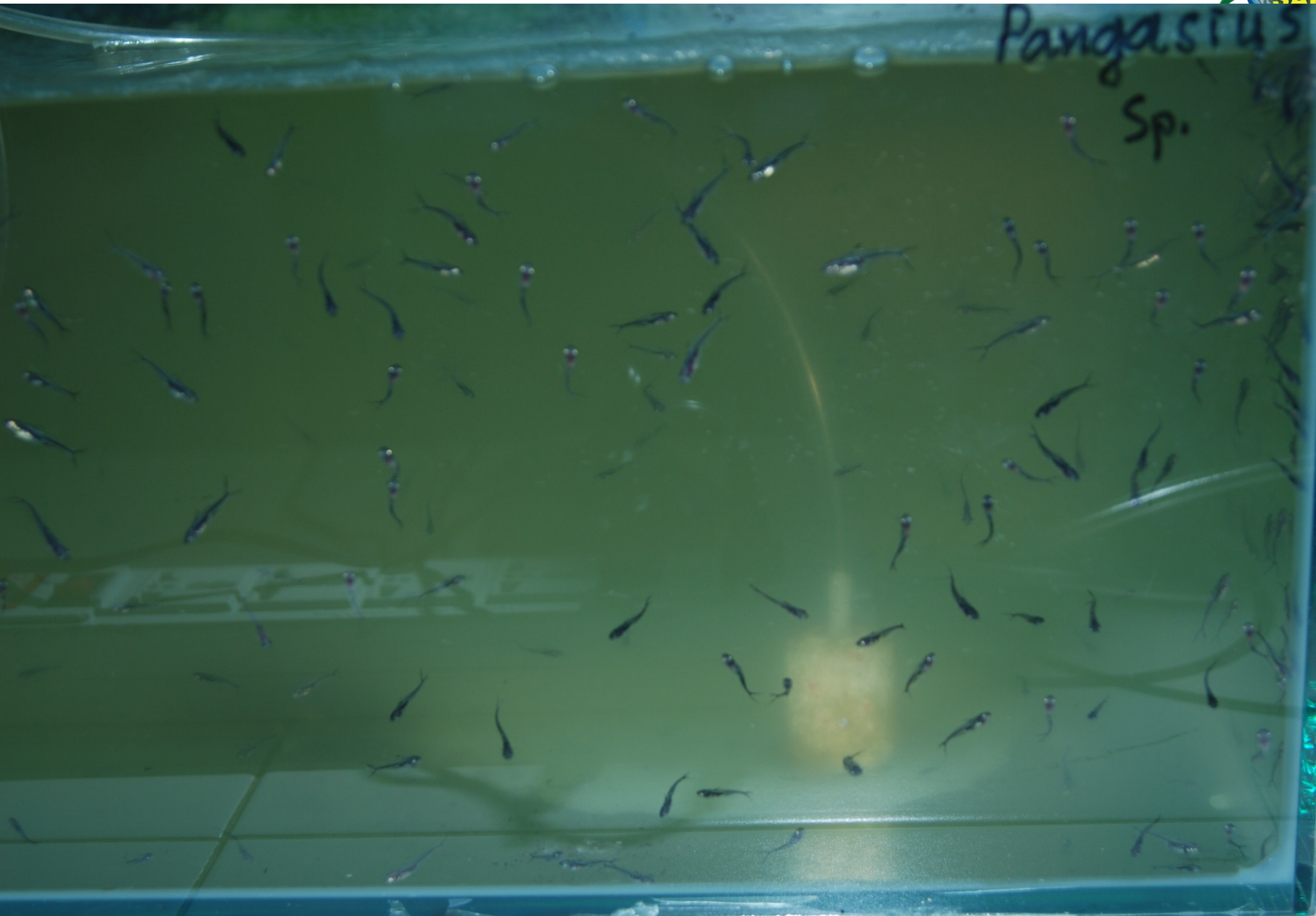


# fish larvae Identification





Pangasius  
Sp.





# Result of Fish Larvae Collection by Bongo Net

- Samples were collected every day but we selected the date of fish larvae peak on (12-19 July 2017) for analysis and identification. Species has 24 sample bottles.
- mean 24 samples collected in the Mekong Rivers at (6:00, 12:00, 18:00, and 24:00 hours) every six hours during 30 minutes.
- Quantity of fish larvae during 30 minutes (a bottle) in date peak has suppurates little (1404-3625 fish) For medium (5341-9880 fish) and High (10333-81283 fish).

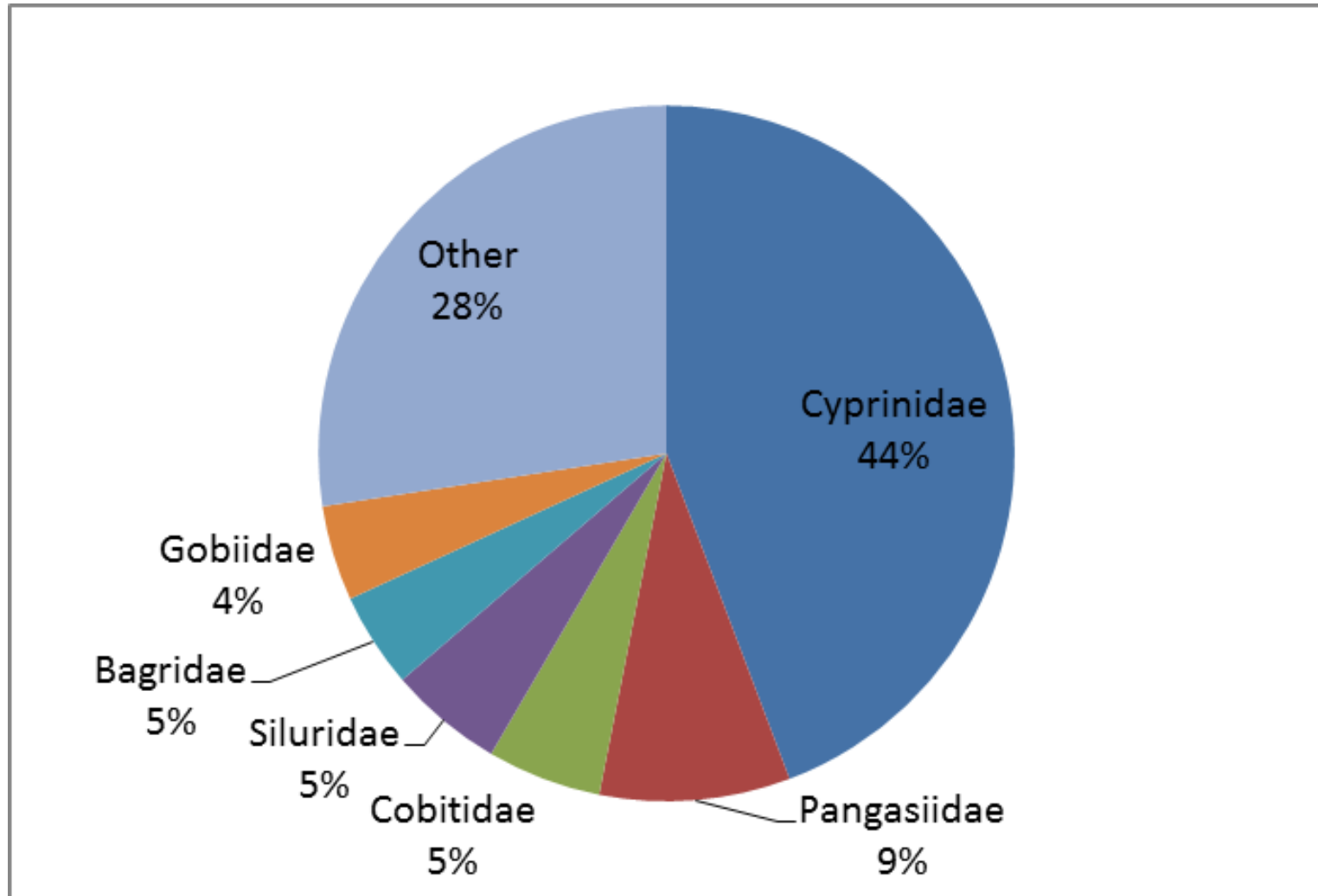


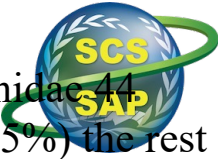
## . RESULTS

A total of 113 fish species belonging to 25 families was identified in the Mekong and Tonle Sap Rivers which Cyprinidae 50 species (44%), Pangasiidae 10 species (9%), Siluridae and Cobitidae each family has 6 species (5%) and the rest 19 families (28%) each family has 1-3 species.



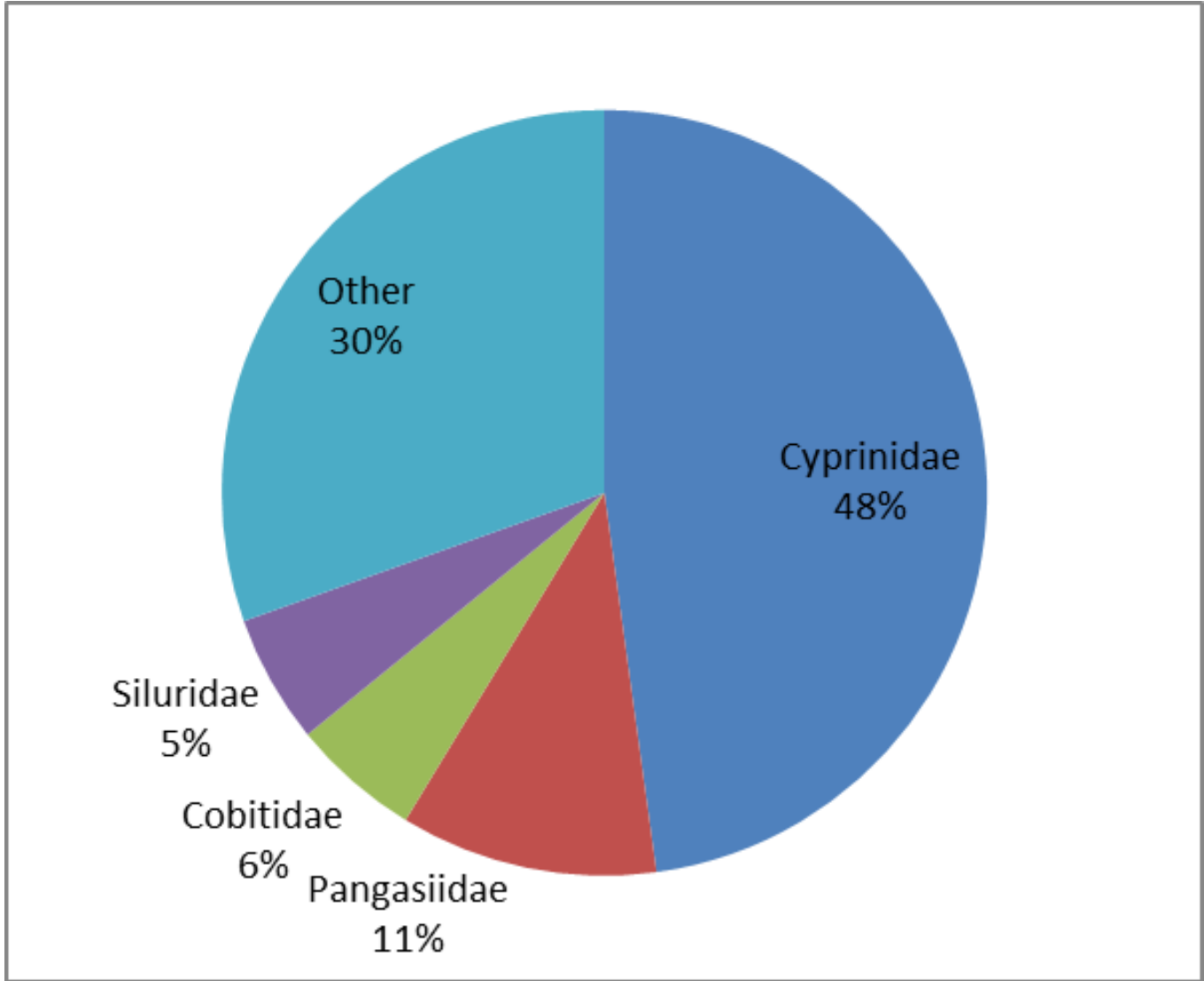
- 3.1. Species composition in the Mekong and Tonle Sap Rivers





## 2. Species composition in the Mekong River

In the Mekong River a total of 92 species belonging to 21 families was identified of which Cyprinidae 44 species (48%), Pangasiidae 10 species (11%), Siluridae and Cobitidae each family has 5 species (5%) the rest 17 families (30%) each family has 1-3 species

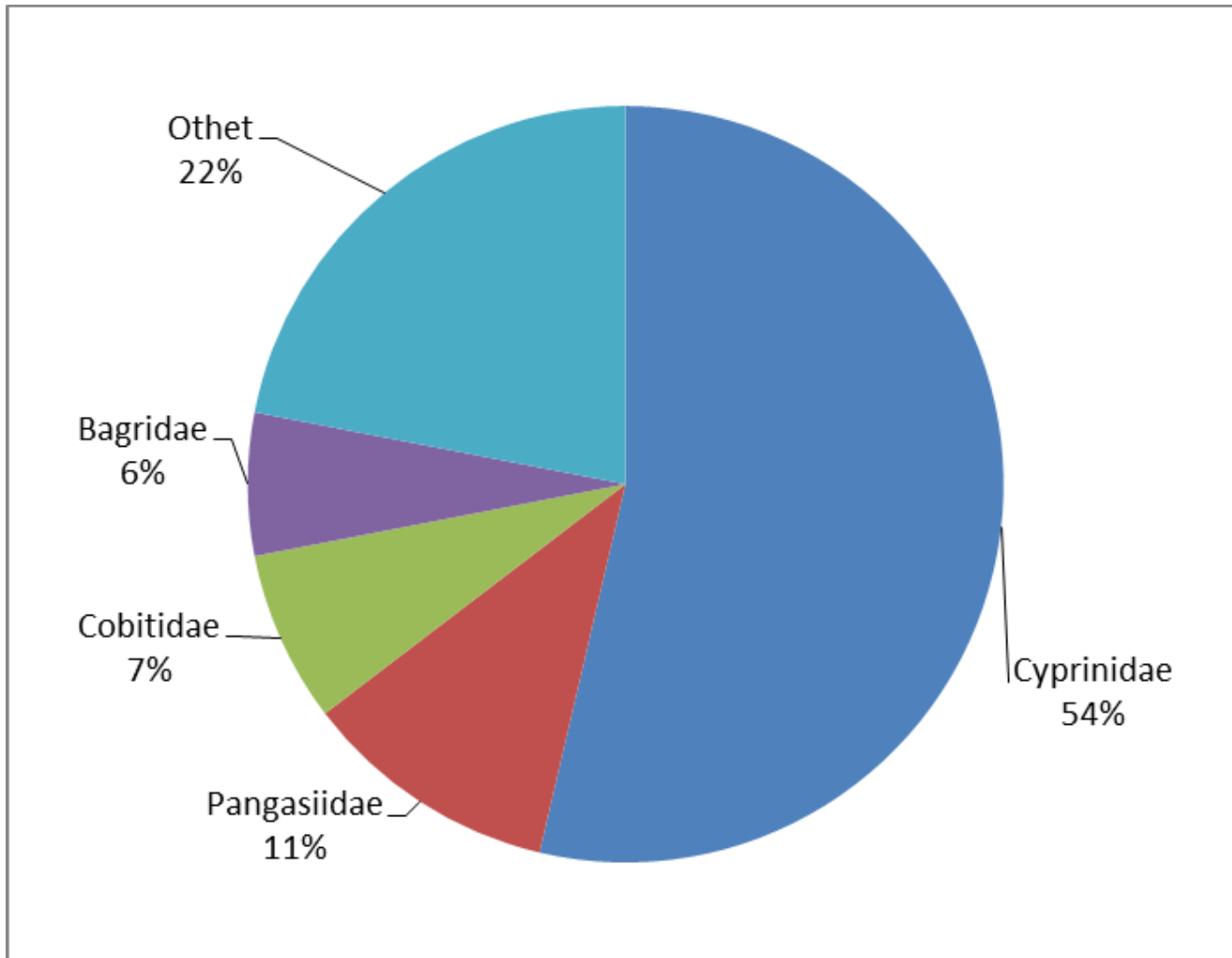






### 3.3. Species composition in the Tonle Sap River

In the Tonle Sap River there are 97 species belonging to 22 families identified of which Cyprinidae 44 species (48%), Pangasiidae 10 species (11%) Cobitidae 6 species (7%) the rest 18 families each family has 1- 4 species





### 3.12. Similarity indices in the Mekong

*Henicorhynchus* spp. was the most abundant species in the Mekong (31.74%) and in the Tonle Sap (88.74) (Table 1 & Table 2) In the table 3 shown no differences in fish larva abundances and composition were found in the Mekong and Tonle Sap rivers. Species diversity in Mekong Rivers (Shannon  $H' = 2.10$ ) was higher than in the Tonle Sap.

- **Table 1 Percentage of quantities by species in the Mekong River**

Species name	Quantity	Percentage (%)
<i>Henicorhynchus</i> spp.,	14,111	31.74
<i>Pangasius</i> sp.1	10,257	23.07
<i>Pangasius bocourti</i>	7,990	17.97
<i>Yasuhikotakia modesta</i>	2,544	5.72
<i>Cirrhinus siamensis</i>	1,883	4.24
<i>Pangasius conchophilus</i>	1,637	3.68
<i>Pangasius</i>	1,463	3.29
<i>Pangasius pleurotaenia</i>	720	1.62
<i>Thryssocypris tonlesapensis</i>	623	1.40
<i>Clupeoides borneensis</i>	364	0.82
Other	2,868	6.45



Table 2 Percentage of quantities by species in the Tonle Sap River



Species name	Quantity	Percentage (%)
<i>Henicorhynchus spp.</i> ,	376,987	88.54
<i>Pangasius sp.1</i>	34,413	8.08
<i>Pangasius bocourti</i>	4,071	0.96
<i>Pangasius</i>	3,338	0.78
<i>Syncrossus helodes</i>	956	0.22
<i>Yasuhikotakia modesta</i>	944	0.22
<i>Cirrhinus siamensis</i>	839	0.20
<i>Thryssocypris tonlesapensis</i>	662	0.16
<i>Pangasius larnaudiei</i>	550	0.13
<i>Gyrinocheilus pennocki</i>	368	0.09
Other	2,654	0.62

Figure 16 Diversity indices in the Mekong River since 2004-2018

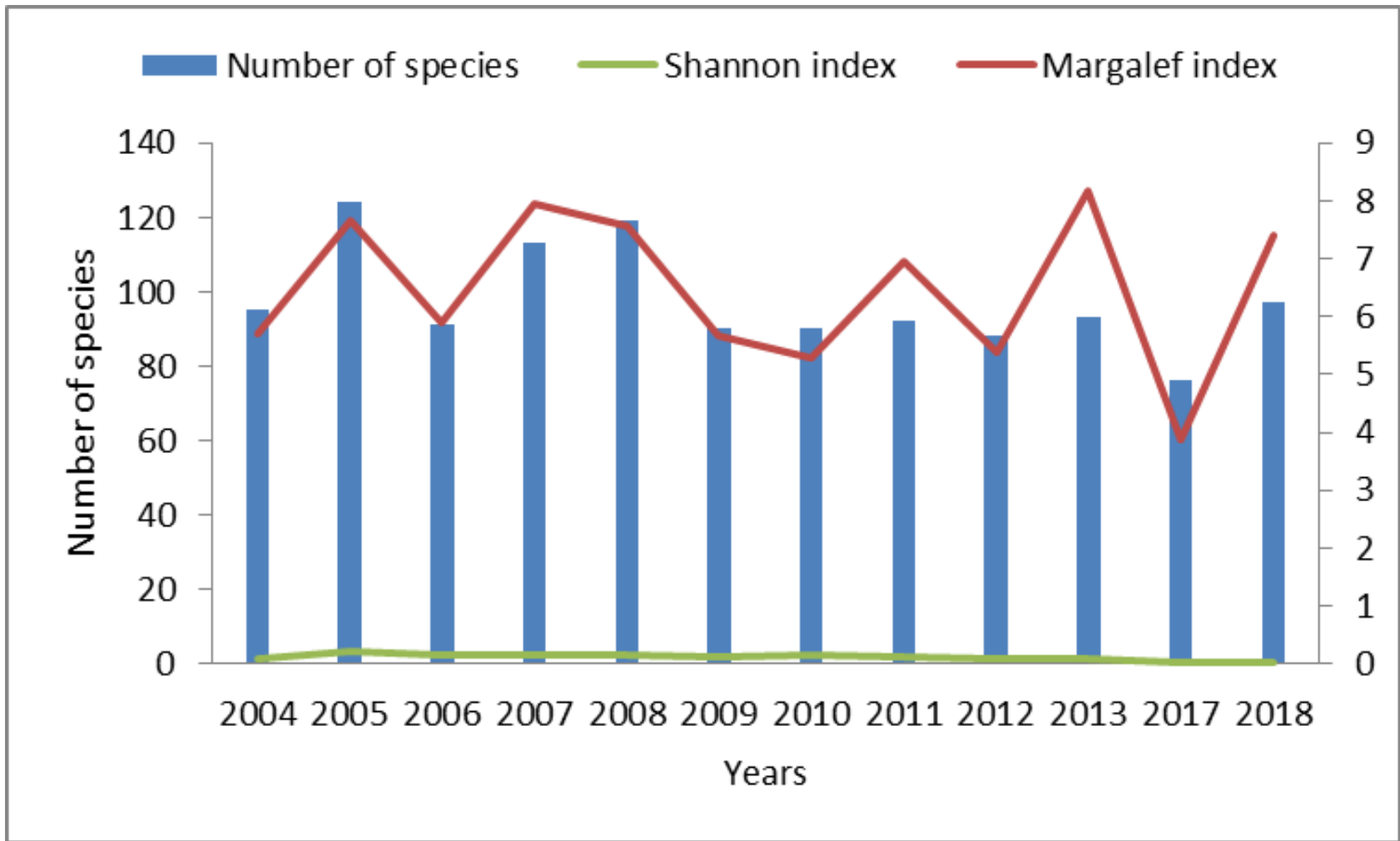
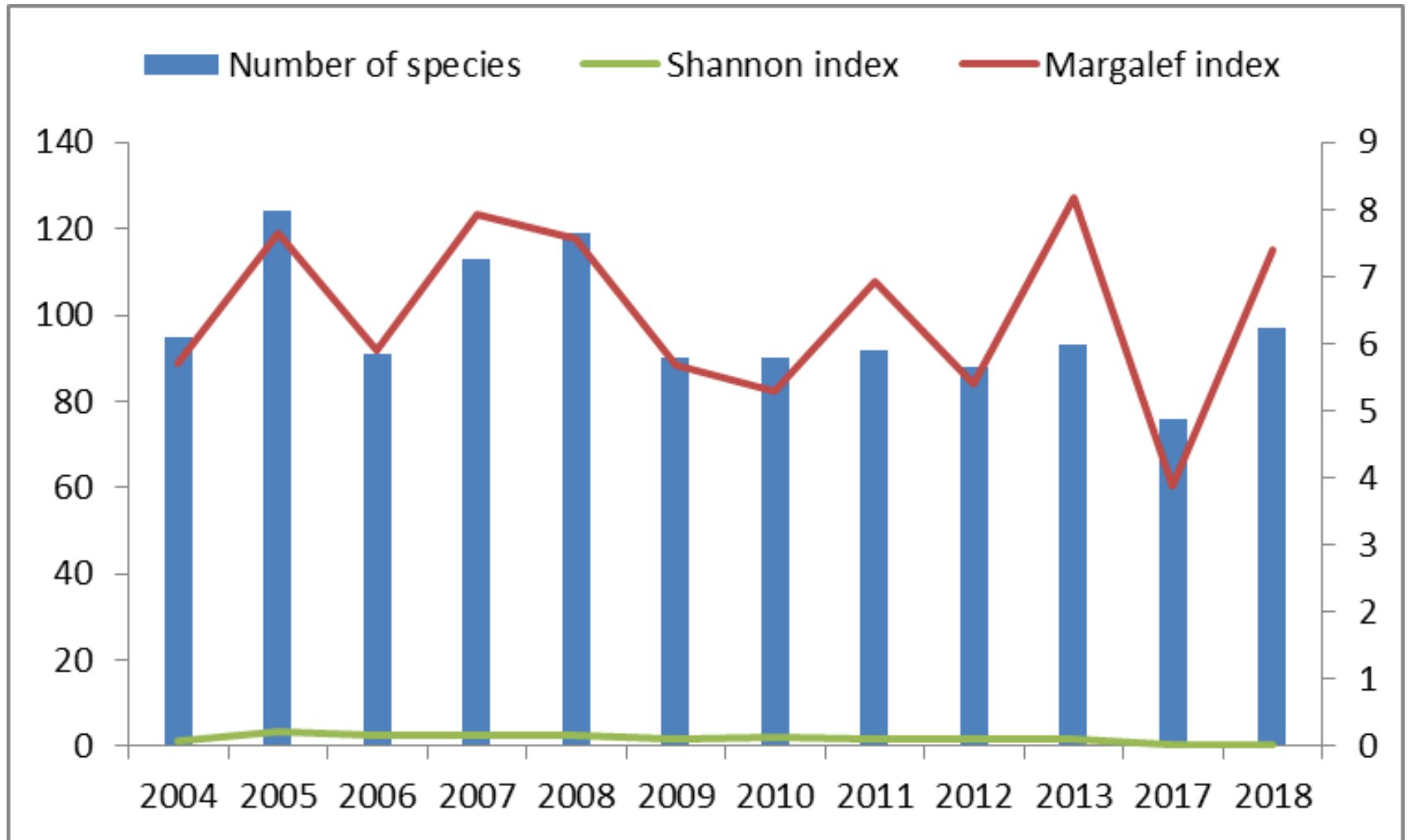
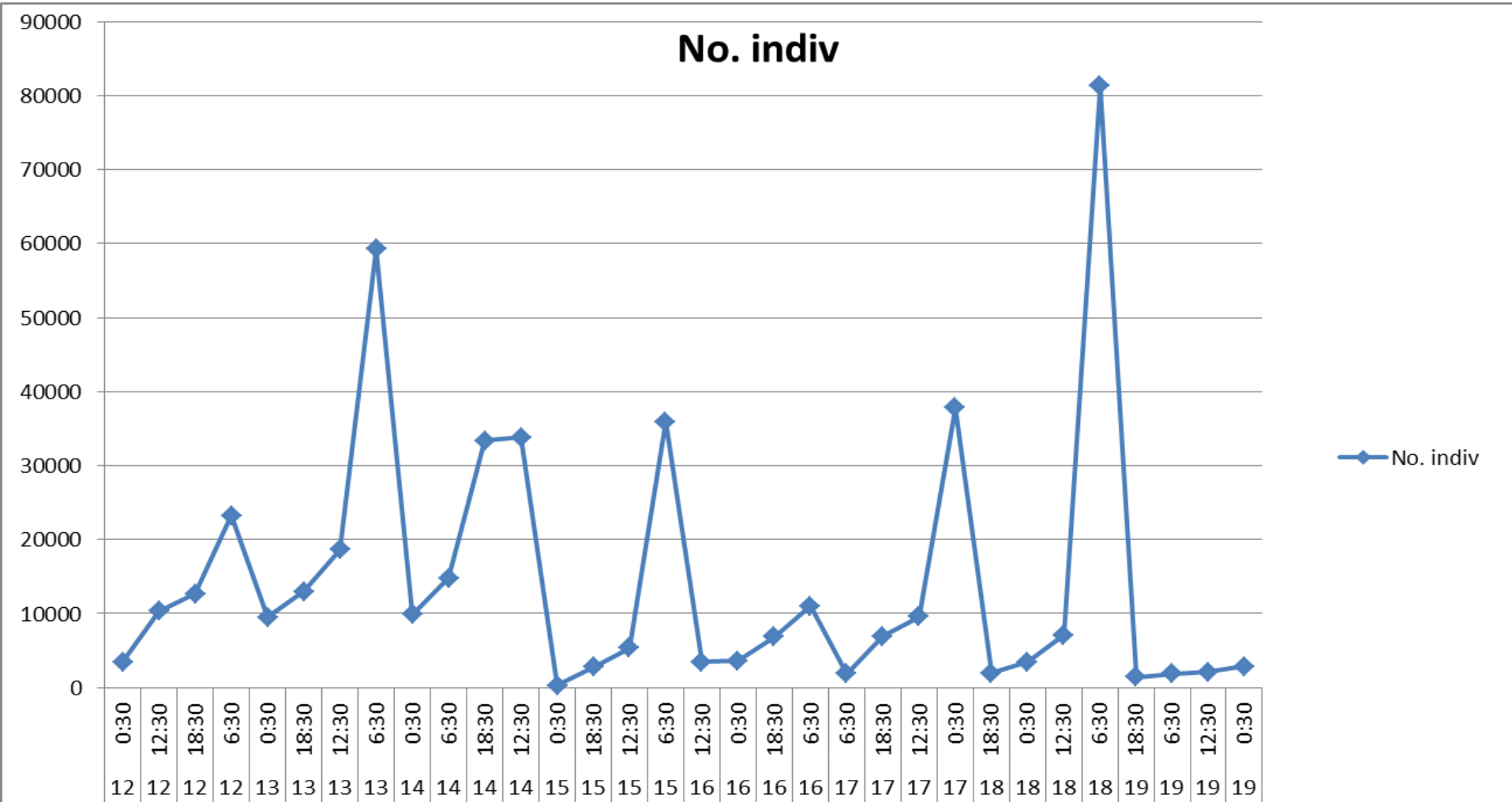




Figure 17 Diversity indices in the Tonle Sap River since 2004-2018



# Result of Fish Larvae Collection by Bongo Net





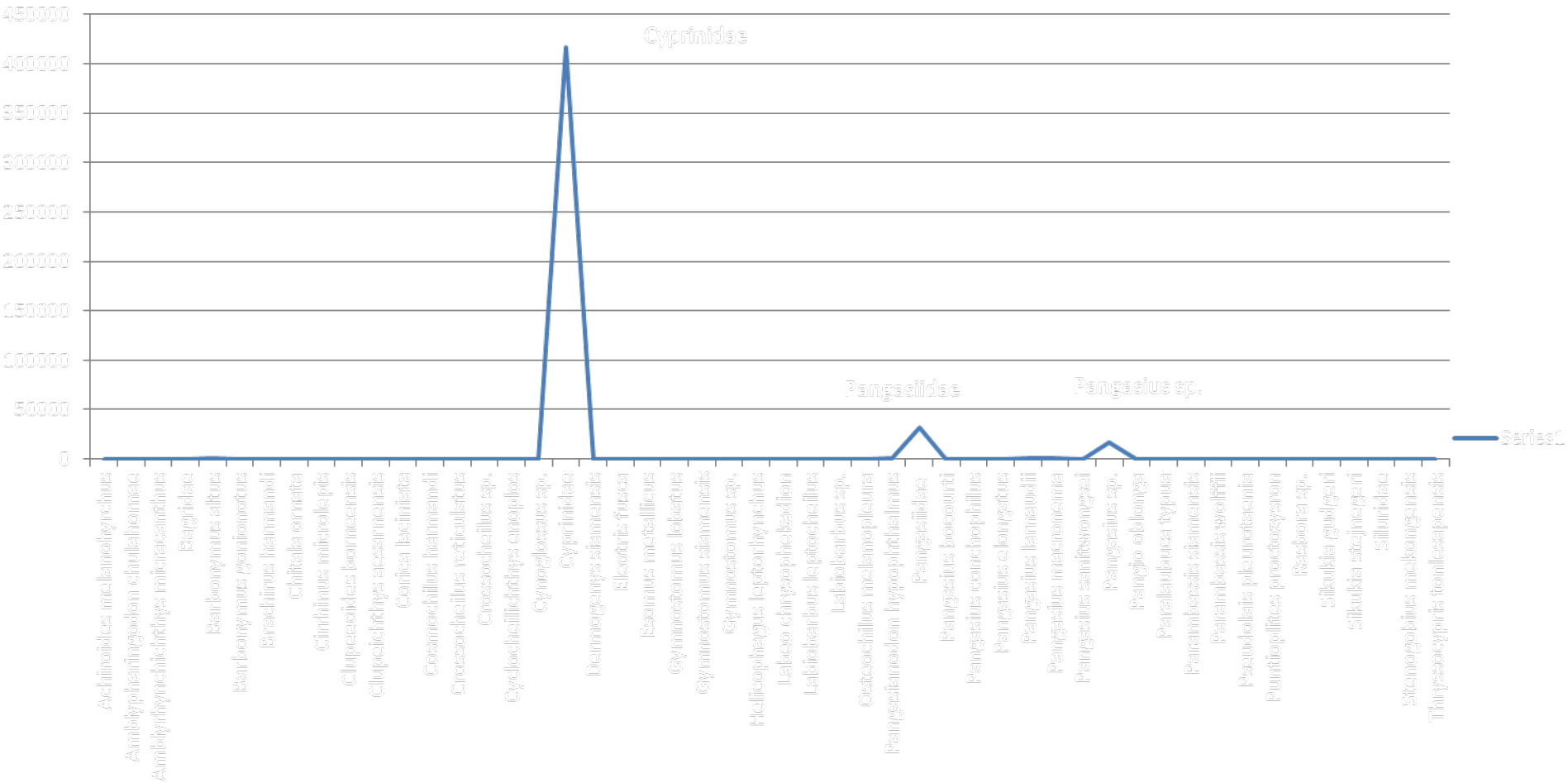
# Result of Fish Larvae Collection by Bongo Net



- 24 sample bottles have quantity 46948 fish and 50 Species.
- 16 Diurnal species abundant is that 417052 *Cyprinidae*, 31790 *Pangasiidae*, 16492 *Pangasius* sp., 938 *Pangasianodon hypophthalmus*, 347 *Pangasius macronema*, 199 *Barbonymus altus*, 156 *Pangasius larnaudii*, 141 *Cirrhinus microlepis*, 107 *Clupeoides borneensis*, 67 *Siluridae*, 51 *Barbonymus gonionotus*, 33 *Pangasius macronema*, 31 *Cyclocheilichthys enoplos*, 25 *Cosmochilus harmandi*, 13 *Sikukia stejnegeri* and 12 *Puntioplites proctozysron*.



# Result of Fish Larvae Collection by Bongo Net









Thank you