



Inland Fisheries Research and Development Institute (IFReDI)



For Sustainable Development of Inland Fisheries in Cambodia

## BIOLOGICAL REVIEWS OF IMPORTANT CAMBODIAN FISH SPECIES, BASED ON FISHBASE 2004.

**Volume 1:** *Channa striata*, *Channa micropeltes*; *Barbonymus altus*; *Barbonymus gonionotus*; *Cyclocheilichthys apogon*; *Cyclocheilichthys enoplos*; *Henicorhynchus lineatus*; *Henicorhynchus siamensis*; *Pangasius hypophthalmus*; *Pangasius djambal*

Chheng Phen, Touch Bun Thang, Eric Baran, Leng Sy Vann



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Volume I:

Snakeheads *Channa striata*, *Channa micropeltes*;

Cyprinids *Barbonymus altus*; *Barbonymus gonionotus*; *Cyclocheilichthys apogon*;  
*Cyclocheilichthys enoplos*; *Henicorhynchus lineatus*; *Henicorhynchus*  
*siamensis*;

Catfishes *Pangasius hypophthalmus*; *Pangasius djambal*.

**Chheng Phen, Touch Bun Thang, Eric Baran, Leng Sy Vann**



formerly known as "ICLARM - The World Fish Center"

**Our Commitment:**

to contribute to food security and poverty eradication in developing countries.

**A Way to Achieve This:**

through research, partnership, capacity building and policy support, we promote sustainable development and use of living aquatic resources based on environmentally sound management.

We believe this work will be most successful when undertaken in partnership with governments and nongovernment institutions and with the participation of the users of the research results.

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Chheng Phen  
Touch Bun Thang  
Eric Baran  
Leng Sy Vann

2005

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# Contents

<b>I. Monograph on <i>Channa striata</i></b> .....	
1.1. Summary information on the family Channidae.....	1
1.2. Information on the genus <i>Channa</i> and its synonyms.....	1
1.3. Synonyms, misidentifications, etc. used for <i>Channa striata</i> .....	2
1.4. Distribution of <i>Channa striata</i> .....	3
1.5. Introductions of <i>Channa striata</i> .....	4
1.6. Summary information (no. of records) available for <i>Channa striata</i> .....	5
1.7. Morphology of <i>Channa striata</i> .....	7
1.8. Genetic information for <i>Channa striata</i> .....	7
1.9. FAO Aquaculture Production Data for <i>Channa striata</i> .....	8
1.10. Weight proportions and chemical composition of <i>Channa striata</i> .....	10
1.11. Oxygen consumption of <i>Channa striata</i> .....	10
1.12. General information on the reproduction of <i>Channa striata</i> .....	11
1.13. Ecology of <i>Channa striata</i> .....	11
1.14. Food items for <i>Channa striata</i> .....	12
1.15. Diet composition of <i>Channa striata</i> .....	13
1.16. Maximum weight/length/age of <i>Channa striata</i> .....	13
1.17. Length-Weight relationships of <i>Channa striata</i> .....	14
1.18. Growth and mortality of <i>Channa striata</i> .....	14
1.19. Diseases reported for <i>Channa striata</i> .....	14
1.20. FAO annual catch data (in tonnes) for <i>Channa striata</i> .....	14
1.21. References used for <i>Channa striata</i> .....	21
<b>II. Monograph on <i>Channa micropeltes</i></b> .....	
2.1. Summary information on the family Channidae.....	29
2.2. Information on the genus <i>Channa</i> and its synonyms.....	29
2.3. General information on <i>Channa micropeltes</i> .....	30
2.4. Synonyms, misidentifications, etc. used for <i>Channa micropeltes</i> .....	30
2.5. Common names for <i>Channa micropeltes</i> .....	31
2.6. Distribution of <i>Channa micropeltes</i> .....	31
2.7. Introductions of <i>Channa micropeltes</i> .....	32
2.8. Summary information (no. of records) available for <i>Channa micropeltes</i> .....	32
2.9. Morphology of <i>Channa micropeltes</i> .....	33
2.10. Genetic information for <i>Channa micropeltes</i> .....	33
2.11. FAO Aquaculture Production Data for <i>Channa micropeltes</i> .....	34
2.12. General information on the reproduction of <i>Channa micropeltes</i> .....	35
2.13. Food items for <i>Channa micropeltes</i> .....	35
2.14. Maximum weight/length/age of <i>Channa micropeltes</i> .....	35
2.15. Length-Weight relationships of <i>Channa micropeltes</i> .....	35
2.16. FAO annual catch data (in tonnes) for <i>Channa micropeltes</i> .....	36
2.17. References used for <i>Channa micropeltes</i> .....	37
<b>III. Monograph on <i>Barbonymus altus</i></b> .....	
3.1. Summary information on the family Cyprinidae.....	41
3.2. Information on the genus <i>Barbonymus</i> and its synonyms.....	41
3.3. General information on <i>Barbonymus altus</i> .....	41
3.4. Synonyms, misidentifications, etc. used for <i>Barbonymus altus</i> .....	42
3.5. Common names for <i>Barbonymus altus</i> .....	42
3.6. Distribution of <i>Barbonymus altus</i> .....	43
3.7. Summary information (no. of records) available for <i>Barbonymus altus</i> .....	43
3.8. Morphology of <i>Barbonymus altus</i> .....	44
3.9. Genetic information for <i>Barbonymus altus</i> .....	44
3.10. General information on the reproduction of <i>Barbonymus altus</i> .....	45
3.11. Ecology of <i>Barbonymus altus</i> .....	45
3.12. Food items for <i>Barbonymus altus</i> .....	45
3.13. References used for <i>Barbonymus altus</i> .....	46

<b>IV. Monograph on <i>Barbonymus gonionotus</i></b> .....	
4.1. Summary information on the family Cyprinidae.....	51
4.2. Information on the genus <i>Barbonymus</i> and its synonyms .....	51
4.3. General information on <i>Barbonymus gonionotus</i> .....	51
4.4. Synonym names for <i>Barbonymus gonionotus</i> .....	52
4.5. Common names for <i>Barbonymus gonionotus</i> .....	53
4.6. Distribution of <i>Barbonymus gonionotus</i> .....	53
4.7. Introductions of <i>Barbonymus gonionotus</i> .....	54
4.8. Summary information (no. of records) available for <i>Barbonymus gonionotus</i> ..	55
4.9. Morphology of <i>Barbonymus gonionotus</i> .....	56
4.10. Genetic information for <i>Barbonymus gonionotus</i> .....	57
4.11. Weight proportions and chemical composition of <i>Barbonymus gonionotus</i> ..	58
4.12. FAO aquaculture production data for <i>Barbonymus gonionotus</i> .....	58
4.13. General information on the reproduction of <i>Barbonymus gonionotus</i> .....	59
4.14. Ecology of <i>Barbonymus gonionotus</i> .....	59
4.17. Food items for <i>Barbonymus gorionotus</i> .....	59
4.18. Length-Weight relationships of <i>Barbonymus gonionotus</i> .....	60
4.19. Diseases reported for <i>Barbonymus gonionotus</i> .....	61
4.20. FAO annual catch data (in tonnes) for <i>Barbonymus gonionotus</i> .....	61
4.21. References used for <i>Barbonymus gonionotus</i> .....	62
<b>V. Monograph on <i>Cyclocheilichthys apogon</i></b> .....	
5.1. Summary information on the family Cyprinidae.....	67
5.2. Information on the genus <i>Cyclocheilichthys</i> and its synonyms.....	67
5.3. General information on <i>Cyclocheilichthys apogon</i> .....	68
5.4. Synonyms, misidentifications, etc. used for <i>Cyclocheilichthys apogon</i> .....	68
5.5. Common names for <i>Cyclocheilichthys apogon</i> .....	69
5.6. Distribution of <i>Cyclocheilichthys apogon</i> .....	69
5.7. Summary information (no. of records) available for <i>Cyclocheilichthys apogon</i> .....	70
5.8. Morphology of <i>Cyclocheilichthys apogon</i> .....	70
5.9. Genetic information for <i>Cyclocheilichthys apogon</i> .....	70
5.10. Ecology of <i>Cyclocheilichthys apogon</i> .....	71
5.11. Food items for <i>Cyclocheilichthys apogon</i> .....	71
5.12. Diet composition of <i>Cyclocheilichthys apogon</i> .....	72
5.13. Growth and mortality of <i>Cyclocheilichthys apogon</i> .....	72
5.14. References used for <i>Cyclocheilichthys apogon</i> .....	73
<b>VI. Monograph on <i>Cyclocheilichthys enoplos</i></b> .....	
6.1. Summary information on the family Cyprinidae.....	77
6.2. Information on the genus <i>Cyclocheilichthys</i> and its synonyms.....	77
6.3. General information on <i>Cyclocheilichthys enoplos</i> .....	78
6.4. Synonyms, misidentifications, etc. used for <i>Cyclocheilichthys enoplos</i> .....	79
6.5. Common names for <i>Cyclocheilichthys enoplos</i> .....	79
6.6. Distribution of <i>Cyclocheilichthys enoplos</i> .....	79
6.7. Summary information (no. of records) available for <i>Cyclocheilichthys enoplos</i> .....	80
6.8. Morphology of <i>Cyclocheilichthys enoplos</i> .....	80
6.9. Genetic information for <i>Cyclocheilichthys enoplos</i> .....	81
6.10. Ecology of <i>Cyclocheilichthys enoplos</i> .....	82
6.11. Food items for <i>Cyclocheilichthys enoplos</i> .....	82
6.12. References used for <i>Cyclocheilichthys enoplos</i> .....	83
<b>VII. Monograph on <i>Henicorhynchus lineatus</i></b> .....	
7.1. Summary information on the family Cyprinidae.....	87
7.2. Information on the genus <i>Henicorhynchus</i> and its synonyms.....	87
7.3. General information on <i>Henicorhynchus lineatus</i> .....	87
7.4. Synonyms, misidentifications, etc. used for <i>Henicorhynchus lineatus</i> .....	88
7.5. Common names for <i>Henicorhynchus lineatus</i> .....	88
7.6. Distribution of <i>Henicorhynchus lineatus</i> .....	88
7.7. Summary information (no. of records) available for <i>Henicorhynchus lineatus</i> .....	89
7.8. Morphology of <i>Henicorhynchus lineatus</i> .....	89
7.9. References used for <i>Henicorhynchus lineatus</i> .....	90



<b>VIII. Monograph on <i>Henicorhynchus siamensis</i>.....</b>	
8.1. Summary information on the family Cyprinidae.....	93
8.2. Information on the genus <i>Henicorhynchus</i> and its synonyms.....	93
8.3. General information on <i>Henicorhynchus siamensis</i> .....	93
8.4. Synonyms, misidentifications, etc. used for <i>Henicorhynchus siamensis</i> .....	94
8.5. Common names for <i>Henicorhynchus siamensis</i> .....	95
8.6. Distribution of <i>Henicorhynchus siamensis</i> .....	95
8.7. Summary information (no. of records) available for <i>Henicorhynchus siamensis</i> ..	96
8.8. Morphology of <i>Henicorhynchus siamensis</i> .....	96
8.9. General information on the reproduction of <i>Henicorhynchus siamensis</i> ..	96
8.10. Ecology of <i>Henicorhynchus siamensis</i> .....	97
8.11. Food items for <i>Henicorhynchus siamensis</i> .....	98
8.12. References used for <i>Henicorhynchus siamensis</i> .....	99
<b>IX. Monograph on <i>Pangasius hypophthalmus</i>.....</b>	
9.1. Summary information on the family Pangasiidae.....	103
9.2. Information on the genus <i>Pangasius</i> and its synonyms.....	103
9.3. General information on <i>Pangasius hypophthalmus</i> .....	104
9.4. Synonyms, misidentifications, etc. used for <i>Pangasius hypophthalmus</i> ..	105
9.5. Common names for <i>Pangasius hypophthalmus</i> .....	105
9.6. Distribution of <i>Pangasius hypophthalmus</i> .....	105
9.7. Introductions of <i>Pangasius hypophthalmus</i> .....	106
9.8. Summary information (no. of records) available for <i>Pangasius hypophthalmus</i> ..	107
9.9. Morphology of <i>Pangasius hypophthalmus</i> .....	107
9.10. Genetic information for <i>Pangasius hypophthalmus</i> .....	108
9.11. General information on the reproduction of <i>Pangasius hypophthalmus</i> ..	109
9.12. Ecology of <i>Pangasius hypophthalmus</i> .....	109
9.13. Food items for <i>Pangasius hypophthalmus</i> .....	110
9.14. Length-Weight relationships of <i>Pangasius hypophthalmus</i> .....	110
9.15. Diseases reported for <i>Pangasius hypophthalmus</i> .....	110
9.16. FAO aquaculture production data for <i>Pangasius hypophthalmus</i> .....	112
9.17. References used for <i>Pangasius hypophthalmus</i> .....	113
<b>X. Monograph on <i>Pangasius djambal</i>.....</b>	
10.1. Summary information on the family Pangasiidae.....	119
10.2. Information on the genus <i>Pangasius</i> and its synonyms.....	119
10.3. General information on <i>Pangasius djambal</i> .....	120
10.4. Synonyms, misidentifications, etc. used for <i>Pangasius djambal</i> .....	120
10.5. Common names for <i>Pangasius djambal</i> .....	121
10.6. Distribution of <i>Pangasius djambal</i> .....	121
10.7. Summary information (no. of records) available for <i>Pangasius djambal</i> .....	121
10.8. Morphology of <i>Pangasius djambal</i> .....	122
10.9. General information on the reproduction of <i>Pangasius djambal</i> .....	122
10.10. Ecology of <i>Pangasius djambal</i> .....	122
10.11. Food items for <i>Pangasius djambal</i> .....	123
10.12. References used for <i>Pangasius djambal</i> .....	124



## Introduction

This document results from the extraction and the editing by the authors of the information available in FishBase 2004.

FishBase is a biological database on fishes developed by the WorldFish Center (formerly ICLARM, the International Center for Living Aquatic Resources Management) in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and with the support of the European Commission (EC).

These synopses present a standardized printout of the information on the above-mentioned species incorporated in FishBase as of 11 May 2004 and are inspired by the format suggested for such documents by H. Rosa Jr. (1965, FAO Fish. Syn. (1) Rev 1, 84 p.).

We cannot guarantee the total accuracy of the information herein; also we are aware that it is incomplete and readers are invited to send complementary information and/or corrections, preferably in the form of reprints or reports to the FishBase Project, WorldFish Center, MC P.O. Box 2631, Makati, Metro Manila, 0718, Philippines.

## Some hints on how to use the synopses

The following definitions are meant to help you better understand the way this synopsis presents information and documents its sources.

Please refer to the FishBase book for more details, and do not hesitate to contact FishBase staff if you have suggestions or information that would improve the format or the contents of this synopsis.

- SpecCode** : Numeric FishBase code, assigned to a species and used for internal purposes only.
- StockCode** : Numeric FishBase code, assigned to the species in general, a wild population, or a cultured strain. Since, to date, only a few species have been separated into stocks, the StockCode usually refers to the species in general.
- MainRef.** : Numeric FishBase code corresponding to the reference used as a source for most of the information within a table.
- Ref.** : Numeric FishBase code corresponding to the reference associated with a specific entry or set of entries; when left empty, the source of information is the MainRef. Note that thereferences listed at the end of this synopsis are arranged according to their numeric codes, and not alphabetically.
- Empty fields** : Imply information that is currently not available to the FishBase project and/or information which is available but which has not been entered as of 31-Mar-04 . Note that the character 0 (zero) is used as a valid numerical value, and does not indicate that no information is available.
- Choice fields** : Much of the information in this synopsis was entered via multiple choice fields; the available alternatives must be considered when evaluating the wisdom of a given choice.
- Remarks or Comment fields** : The free text included in such fields may have been taken verbatim from the source in "Ref.", in which case this should be regarded as a direct citation (but lacking quotation marks); alternatively, the text may have been modified/adapted from one or several sources. In the latter case, additional "Ref." numbers may be incorporated in the text.

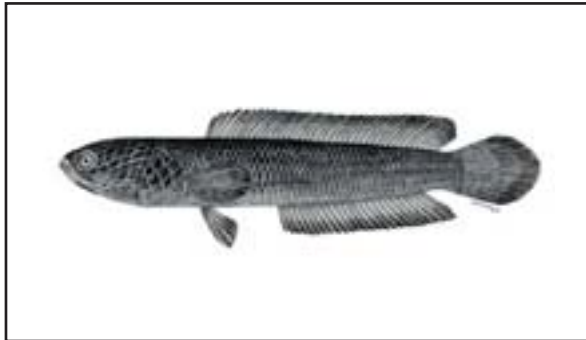


# CHANNA STRIATA

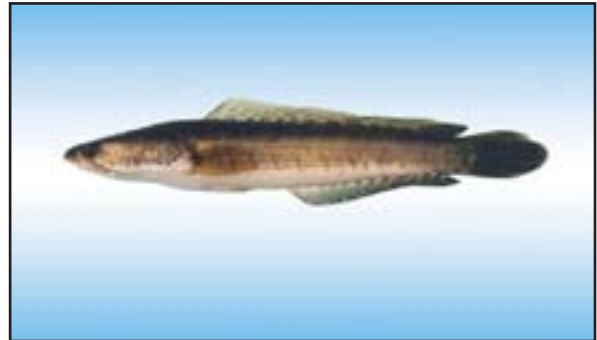
(Bloch, 1793)

Snakehead murrel or striped snakehead

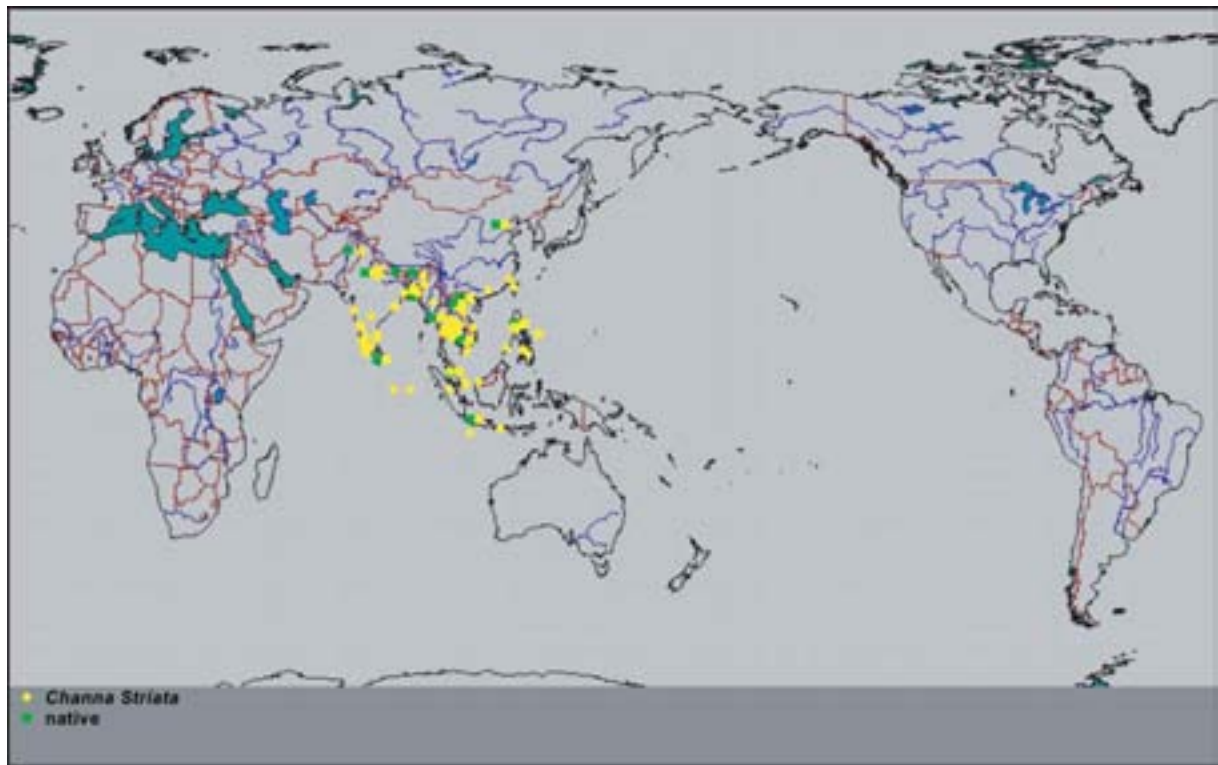
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Picture by [Escudero P.T](#)



Picture by [Baird, I.G](#)





## 1.1. Summary information on the family *Channidae*

MainRef.: 007463

Family : Channidae (Snakeheads)  
Order : Perciformes  
Class : Actinopterygii (ray-finned fishes)  
Number of genera : 2  
Number of species : 21  
Occurs in :  Marine  
           Brackish  
           Freshwater

Aquarium fishes : some

Species currently in FishBase: Genera: 2 Species: 31 (Including subspecies) Complete: Yes

### Remarks:

Distribution: tropical Africa (three species) and southern Asia. Elongate body; lower jaw protruding. Dorsal and anal fin bases long. Pelvic fins may be lacking in some; with 6 rays when present. No spines in fins. Scales ctenoid or cycloid. Air-breathing through suprabronchial organ. About 1.2 m maximum length. Important in aquaculture and commonly used in rice-fish farming. Some species are widely introduced. Number of species: 26 (Ref. 36343). Etymology: Greek, channe, -es = anchovy ( Ref. 45335).

## 1.2. Information on the genus *Channa* and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

***Bostrychoides*** Status: synonym Gender: masculine  
Lacepède, 1801, p. 144, CAS Ref: 2710  
Type by monotypy.  
Type species: *Bostrychoides oculatus* Lacepède, 1801  
Current genus: *Channa*

***Channa*** Status: valid Gender: feminine  
Scopoli (exGronow), 1777, p. 459, CAS Ref: 3990  
Type by subsequent monotypy.  
Type species: *Channa orientalis* Bloch & Schneider, 1801  
Current genus: *Channa*

***Channa*** Status: not available Gender: feminine  
Gronow, 1763, p. 135, CAS Ref: 1910  
Current genus: *Channa*

***Ophicephalus*** Status: synonym Gender: masculine  
Bloch, 1793, p. 137, CAS Ref: 4868  
Type by subsequent designation.  
Type species: *Ophicephalus striatus* Bloch, 1793  
Current genus: *Channa*

***Philypnoides*** Status: synonym Gender: masculine  
Bleeker, 1849, p. 19, CAS Ref: 319  
Type by monotypy.  
Type species: *Philypnoides surakartensis* Bleeker, 1849  
Current genus: *Channa*

**Psiloides**

Status: other

Gender : masculine

Fischer, 1813,p. 74, 111, CAS Ref: 1331

Type by being a replacement name.

Type species: *Bostrychoides oculatus*

Lacepède, 1801

Current genus: *Channa***Pterops**

Status: synonym

Gender: masculine

Rafinesque, 1815, p. 84, 91, CAS Ref: 3584

Type by being a replacement name.

Type species: *Bostrychoides oculatus*

Lacepède, 1801

Current genus: *Channa***1.3. General information on *Channa striata*****Classification**

Class : Actinopterygii (Ray-finned fishes)

MainRef. 006028

Order : Perciformes

Family : Channidae (Snakeheads)

Subfamily :

Species : *Channa striata*

Author : (Bloch, 1793)

Author Ref. 001571

**Environment**

Freshwater : Yes Habitat : Benthopelagic

Brackish : Yes Migrations :

Saltwater : No Depth range : 1 to10 m

**Importance**

Landing statistics : From 10,000 to 50,000 tonnes

Ref. 004931

Main source of landing :

Importance to fisheries : Highly commercial

Main catching method :

Other methods :	<input checked="" type="checkbox"/> Seines	<input checked="" type="checkbox"/> Gillnets	<input type="checkbox"/> Castnets	<input checked="" type="checkbox"/> Traps	<input type="checkbox"/> Spears
	<input type="checkbox"/> Trawls	<input type="checkbox"/> Dredges	<input type="checkbox"/> Liftnets	<input checked="" type="checkbox"/> Hooks+Lines	<input type="checkbox"/> Other

Used for aquaculture : Commercial

Ref. 012108

Used as bait : Never/rarely

Ref.

Aquarium fish : Public aquariums

Ref. 004537

Game fish : No

Ref.

Dangerous fish : Potential pest

Ref.

Electrobiology : No special ability

Ref.

**Size and age**

Maximum length (cm) (male/unsexed) : 100 SL (female) :

Ref. 002686

Common length (cm) (male/unsexed) : 61 TL (female) :

Ref. 044091

Maximum weight (g) (male/unsexed) : 3,000.00 (female) :

Ref. 040637

**Remarks:**

Inhabits ponds, streams and rivers, preferring stagnant and muddy water of plains (Ref. 41236). Found mainly in swamps, but also occurs in the lowland rivers. More common in relatively deep (1-2 m), still water. Very common in freshwater plains (Ref. 4515). Occurs in medium to large rivers, brooks, flooded fields and stagnant waters including sluggish flowing canals (Ref. 12975). Survives dry season by burrowing in bottom mud of lakes, canals and swamps as long as skin and air-breathing apparatus remain moist (Ref. 2686) and subsists on the stored fat (Ref. 1479). Feeds on fish, frogs, snakes, insects, earthworms, tadpoles (Ref. 1479) and crustaceans (Ref. 2847). Undertakes lateral migration from the Mekong mainstream, or other permanent water bodies, to flooded areas during the flood season and returns to the permanent water bodies at the onset of the dry season (Ref.37770).

During winter and dry season, its flesh around coelomic cavity is heavily infested by a larval trematode *Isoparorchis hypselobargi*. Other parasites infecting this fish include *Pallisentis ophicephali* in the intestine and *Neocamallanus ophicephali* in the pyloric caecae (Ref. 1479). Processed into pra-hoc, mam-ruot, and mam-ca-loc (varieties of fish paste) in Kampuchea (Ref.4929). Perhaps the main food fish in Thailand, Indochina and Malaysia (Ref. 2686). Firm white flesh almost bone-free, heavy dark skin good for soup and usually sold separately (Ref. 2686). In Hawaiian waters the largest specimen taken reportedly exceeded 150 cm (Ref. 44091).

#### 1.4. Synonyms, misidentifications, etc. used for *Channa striata*

<b>Synonym</b>	<b>Author</b>	<b>Status</b>	<b>Ref.</b>
<i>Ophiocephalus philippinus</i>	Peters, 1869	junior synonym	033021
<i>Ophiocephalus planiceps</i>	Cuvier, 1831	junior synonym	041236
<i>Channa striata</i>	Bloch, 1793	new combination	027732
<i>Ophiocephalus striatus</i>	Bloch, 1793	original combination	006028
<i>Ophiocephalus striatus</i>	Bloch, 1793	original combination	001479
<i>Channa striatus</i>	Bloch, 1793	misspelling	027732
<i>Ophiocephalus vagus</i>	Peters, 1869	junior synonym	002854

#### 1.5. Common names for *Channa striata*

Striped snakehead	English	Australia	002847
Stripped snakehead	English	Bangladesh	047891
Ptuok	Khmer	Cambodia	036651
Ros	Khmer	Cambodia	036651
Trey phtuok	Khmer	Cambodia	012693
Trey ras	Khmer	Cambodia	036654
Trey raws	Khmer	Cambodia	012693
Trey ros (or ras)	Khmer	Cambodia	002686
Chevron snakehead	English	Hawaii (USA)	044091
Pongee	English	Hawaii (USA)	044091
Pa kaw	Laotian	Lao People's Dem. Rep.	009497
Pakho	Laotian	Lao People's Dem. Rep.	002686
Nga-yan	Burmese	Myanmar	002686
Nga-yau-auk	Burmese	Myanmar	007100
Striped snake head murrel	English	Myanmar	005736
Snakehead	English	Thailand	006459
Pla chon	Thai	Thailand	006459
Chevron snakehead	English	United Kingdom	012693
Snakehead murrel	English	United Kingdom	001739
Chevron snakehead	English	USA (contiguous states)	004537
Striped snakehead	English	USA (contiguous states)	004537
Cá lóc	Vietnamese	Viet Nam	036625
Cá lóc (lóc)	Vietnamese	Viet Nam	
Cá trầu	Vietnamese	Viet Nam	

## 1.6. Distribution of *Channa striata*

MainRef.: 004833

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Latitudinal range: 35° N - 18° S    Temperature range: 23 - 27 °C

Ref.: 1672

Status of threat: NL.

<b>Country</b>	<b>Status</b>	<b>Ref.</b>
<b>Bangladesh</b>	<b>native</b>	<b>001479</b>
Very abundant in beels, haors, ponds, ditches and swamps throughout the country. Also Ref. 4854,4833, 27732, 39989,41236,43640.		
<b>Bhutan</b>	<b>native</b>	<b>009418</b>
Occurs in natural waters (Ref. 9418). Found in Gaylegphug River (Ref. 40882).		
<b>Cambodia</b>	<b>native</b>	<b>012693</b>
Occurs in the Mekong basin (Ref. 27732). Found around the Tonle Sap River, the Tonle Sap Great Lake (Ref. 36651, 36686), Ratanakiri, Boum Long, Kompong Chnang, Réam, Beng Kebal Damrey, Sihanoukville and Angkor (Ref. 36654). Much more common in flood-plain lakes and smaller streams than in the Mekong mainstream (Ref. 37770). Also Ref. 3902, 27732, 33813, 36662, 37772, 45353.		
<b>China</b>	<b>native</b>	<b>027732</b>
Occurs in the Mekong basin in Yunnan (Ref. 27732). Also Ref. 4833, 35840, 36654, 43640.		
<b>Hawaii (USA)</b>	<b>introduced</b>	<b>005360</b>
Brought to Hawaii by Asian immigrants in the 1800s; found only on the island of O'ahu, where it is abundant in the Wahiawa Reservoir and several smaller reservoirs on the north side of the island; considered to be one of the best eating fish among freshwater fishermen (Ref. 44091)		
<b>India</b>	<b>native</b>	<b>004833</b>
Occurs throughout India (Ref. 45255). Also Ref. 27732, 29108, 36654, 41236,43634, 43640, 44148, 44149.		
<b>Indonesia</b>	<b>native</b>	<b>007050</b>
Known from Sulawesi, Lesser Sundas, Moluccas (Refs. 7050; 27732). Previously unknown from Irian Jaya, New Guinea, but was collected in streams near Bintuni on the Vogelkop Peninsula 1989 (Ref. 2847). An introduced species (Ref. 1739). Also Ref. 4537, 43640.		
<b>Korea, Republic of</b>	<b>introduced</b>	<b>001739</b>
<b>Lao People's Dem. Rep.</b>	<b>native</b>	<b>027732</b>
Known from the Mekong basin. Found in the middle Xe Bangfai and the middle Nam Theun Rivers (Ref.27732) and Ban Hang Khone, about 3 km below the fall line of the great waterfalls of the Mekong River system at Lee Pee (Ref. 9497). Recorded from the Khone Falls (Ref. 37772). Migrates into the flooded forest on Don Khone and Don Saddam to forage (Ref. 37772). Also Ref. 4792, 2686, 30857, 37767, 37772, 43281.		
<b>Madagascar</b>	<b>introduced</b>	<b>013686</b>
Also Ref. 13333.		
<b>Malaysia</b>	<b>native</b>	<b>004835</b>
<b>Mauritius</b>	<b>introduced</b>	<b>001739</b>
<b>Myanmar</b>	<b>native</b>	<b>005736</b>
Also Ref. 4833,41236,43640.		
<b>Nepal</b>	<b>native</b>	<b>009496</b>
Occurs in Koshi, Gandaki and Karnali Rivers (Ref. 6351). Recorded from Kosi and Narayani zones at 76-120 m altitude. Also Ref. 4833, 41236, 43640.		
<b>New Caledonia</b>	<b>introduced</b>	<b>001739</b>
<b>Pakistan</b>	<b>native</b>	<b>012076</b>
Occurs throughout the plains of Pakistan. Recorded from the river Nulli-ni, near Kota Meer Muhammad. Also Ref. 4854, 4833, 41236, 43640.		
<b>Papua New Guinea</b>	<b>introduced</b>	<b>002847</b>
Two specimens observed by G. Hitchcock in August 2000 at Balamuk and Wando villagers (Ref. 50786).		
<b>Philippines</b>	<b>native</b>	<b>012165</b>
Status to be confirmed. Recorded as introduced (Ref. 6565). Collected from Lagu creek and Layog River at Balinsasayao, Leyte in 1993 (Ref. 7223); museum specimens from various		

localities, LRS-83116 (Ref. 13460); known from Laguna de Bay; Lake Mainit (Ref. 4867); Lake Lanao, Lanao del Sur; Lake Sebu in Cotabato; Lake Balinsasayao in Negros Oriental, near Dumaguete (Ref. 2854); and Lake Buluan (Ref. 13492). Fairly common in Lake Bombon (=Taal) (Ref. 12165). Caught in Lake Manguao by gill net and by hook and line (Ref. 13489). An important food fish. Previously cultured in the past (Ref. 7306, 12548). Also Ref. 2847, 12547, 12744, 36654, 41236.

**Sri Lanka** *native* **006028**

Occurs throughout the lowlands. More common in areas such as Tissamaharama and Wirawila. Also known from brackish water in the canals leading to Negombo lagoon and from the Vadamarachchi lagoon in Jaffna. Also Ref. 4833, 41236, 43640.

**Thailand** *native* **001632**

Known from the river systems of Peninsular and Southeast Thailand, Salween, MaeKlong, Chao Phraya and Mekong (Ref. 26336). Found throughout the length and breadth of the coastal plains and central plains, eastern plateau and piedmont districts. Very popular fish as it is a daily food for both the rich and the poor. Preserved by sun drying (Ref. 6459). Also Ref. 7306, 27732, 37772, 37773, 43640.

**USA (contiguous states)** *introduced* **045309**

Established in Oahu, Hawaii since the late 1800s. It has not been introduced to other Hawaiian waters, it is just confined to reservoirs on Oahu. The species is now being cultured as a food fish in Oahu.

**Viet Nam** *native* **044416**

Known from northern Vietnam (Ref. 44416). Also found in the Mekong basin (Ref. 36625). Also Ref. 27732.

**Total native = 15, Total introduced = 7**

## 1.7. Introductions of *Channa striata*

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year	: 1959	Established	: no	Ref.	001739
Introduced	: to Fiji	from	Unknown		
Reason	: aquaculture				
Comments	: Also introduced for subsistence (Ref. 6366). Released in streams of Viti Levu. Species did not become established.				

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year	: unknown	Established	: unknown	Ref.	009420
Introduced	: to Guam	from	Unknown		
Reason	: unknown				

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year	: Pre 18th century	Established	: yes	Ref.	001739
Introduced	: to Indonesia	from	Southern China		
Reason	: unknown				
Comments	: Well established. Collected in streams near Bintuni on the Vogelkop Peninsula, Irian Jaya in 1989.				

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year	: unknown	Established	: unknown	Ref.	001739
Introduced	: to Indonesia	from	Unknown		
Reason	: unknown				



**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : 1975 - 1976                      Established: yes                      Ref. 013686  
Introduced : to Madagascar              from Far East  
Reason : ornamental  
Comments : The *Ophicephalus* is a carnivorous and very prolific species. During the reproduction it is extremely voracious and eats any kind of fish. For this reason local farmers are asking for its eradication, but the control is quite difficult as the consumers do not like its flesh. What's more the fisheries production is decreasing in lakes where the *Ophicephalus* is present.

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : unknown                      Established : yes                      Ref. 013686  
Introduced : to Mauritius              from Unknown  
Reason : angling/sport  
Comments : Known to occur in some reservoirs (e.g. Valetta and La Nicoliere)

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : unknown                      Established : yes                      Ref. 001739  
Introduced : to New Caledonia              from Unknown  
Reason : unknown

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : unknown                      Established : yes                      Ref. 006349  
Introduced : to Papua New Guinea              from Unknown  
Reason : unknown  
Comments : Has been observed in Bensbach River in August 2000 at Balamuk and Wando villages. Regarded as a particularly voracious predator of native fishes (Ref. 50786).

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : 1908                      Established : yes                      Ref. 006565  
Introduced : to Philippines              from Malaysia  
Reason : aquaculture  
Comments : Used widely in rice-fish culture. Marketed alive.

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : 19th century                      Established : yes                      Ref. 045309  
Introduced : to USA                      from Southern China  
Reason : unknown  
Comments : Established in Oahu, Hawaii since the late 1800s. It has not been introduced to other Hawaiian waters; it is just confined to reservoirs on Oahu. The species is now being cultured as a food fish in Oahu.

**Asia:** Pakistan to Thailand and south China. Several countries report adverse ecological impact after introduction.

Year : 1900-1924                      Established : yes                      Ref. 001972  
Introduced : to Hawaii                      from China  
Reason : accidental (alone or together with other species)  
Comments : Introduced in the 1900s from China (Ref. 1972). Accidentally introduced and found to be established in reservoirs on Oahu Island. Commonly transported live by long distance seafarers in ancient times (Ref. 1739).

## 1.8. Summary information (no. of records) available for *Channa striata*

Ecology	1	Max. sizes	5	Strains	0
Food items	4	FAO catches	15502	Diseases	54
Food consumption	0	Genetics	6	Ciguatera	0
Diet composition	1	Allele frequency	0	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	11
Predators	0	Reproduction	1	Gill area	1
Morphology	1	Spawning	9	Swimming type	1
Processing	1	Eggs	0	Swimming speed	0
Growth/mortality	3	Egg dev't.	0	Vision	0
Maturity	1	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	11
L/W relat.	2	Aquaculture	0	Occurrence	424

## 1.9. Morphology of *Channa striata*

### Diagnostic Characters

Body sub-cylindrical; head depressed; caudal fin rounded (Ref. 2847). The dorsal surface and sides are dark and mottled with a combination of black and ochre, and white on the belly; a large head reminiscent of a snake's head; deeply-gaping, fully toothed mouth; very large scales (Ref. 44091).

### Descriptive Characters

Striking features : none  
 Body shape lateral : elongated  
 Operculum present : yes  
 Type of eyes : more or less normal  
 Position/type of mouth : more or less normal  
 Cross section : other (see Diagnosis)  
 Dorsal head profile: more or less straight

### Teeth Presence

lower jaw : present  
 upper jaw : present

### Pigmentation on trunk and tail

Horizontal stripes : absent  
 Vertical stripes : absent  
 Diagonal stripes : present dorsal and ventral reaching ventral contour  
 Curved stripes : absent  
 Spots : no spot  
 Dorsal fin (D1) : no spot on stripes  
 Caudal fin, anal : no spot on stripes  
 Anal fin (A1) : no spot on stripes

### Meristic Characters

#### Lateral Lines

Interrupted : yes  
 Scales on lateral line : 53-55  
 Barbels : 0

**Dorsal fins**

Dorsal attributes	: no striking attributes		
Number of fins	: 1	spines total : 0-0	soft-rays total: 38-43
Adipose fin	: absent	finlets dorsa : 0-0	finlets ventral: 0-0

**Anal fin**

Number of fins	: 1	spines total : 0-0	soft-rays total: 23-27
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**Paired fins**

Pectoral attributes	: more or less normal		
spines	:	soft-rays: 15- 17	
Pelvics attributes	: more or less normal		
position	: abdominal		
spines	:	soft-rays: 6 -6	

**1.10. Genetic information for *Channa striata***


---

Locality	: Unspecified		
Chromosome number (haploid)	: 20		Main Ref.: 004854
Chromosome number (diploid)	: 40		Ref: 008982
Genetic marker(s) present	: No		
DNA content (picogram, haploid)	: 0.75		Ref.: 004854
Chromosome arm no.	: 54		Ref: 008982

---

## Remarks:

M = 8, ST = 6 and T = 26

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Locality	: Kalyani, Western Bengal, india		
Chromosome number (haploid)	: 20		Main Ref.: 008945
Chromosome number (diploid)	: 40		Ref: 008945
Genetic marker(s) present	: No		
Chromosome arm no.	: 50		Ref: 008945

---

## Remarks:

Sex chromosomes not distinguishable. No banding technique used. Also in ref. 030184.

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Locality	: Delhi, India		
Chromosome number (haploid)	: 20		Ref: 029199
Chromosome number (diploid)	: 40		Ref: 029199
Genetic marker(s) present	: No		
Chromosome arm no.	: 50		Ref: 029199

---

## Remarks:

Also in Ref. 034370.

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Locality	: Assam, Meghalaya, India		
Chromosome number (haploid)	: 20		Ref: 029199
Chromosome number (diploid)	: 40		Ref: 029199
Genetic marker(s) present	: No		
Chromosome arm no.	: 54		Ref: 029199

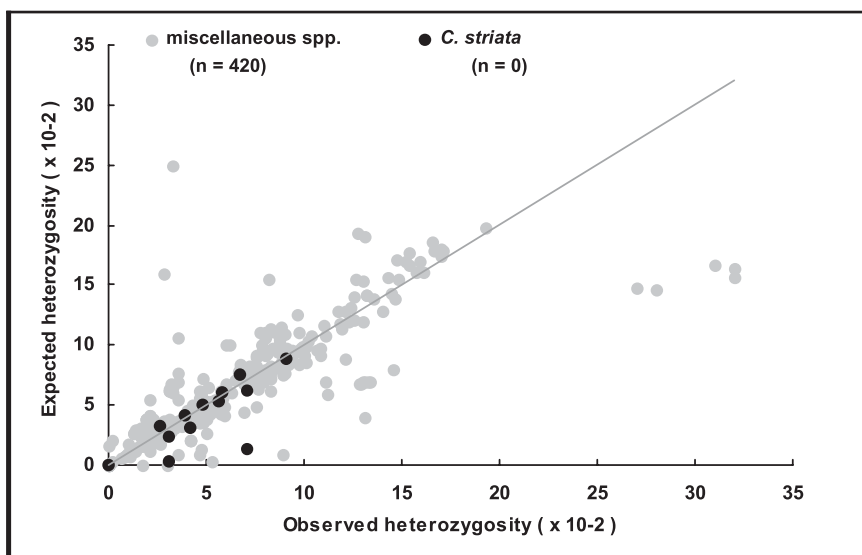
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Locality	: Kalyani, Western Bengal, India	
Chromosome number (haploid)	: 20	Main Ref.: 004845
Chromosome number (diploid)	: 40	Ref: 004845
Genetic marker(s) present	: No	
Chromosome arm no	: 50	Ref: 004845

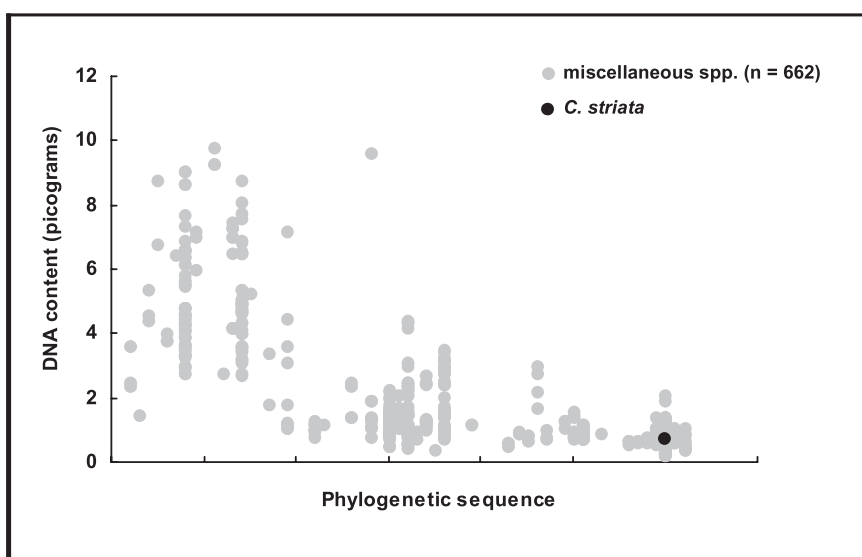
Remarks:  
DNA/2n: 0.73 pg(Ref. 034370).

Locality	: Kalyani, Western Bengal, india	
Chromosome number (haploid)	: 20	Main Ref.: 029199
Chromosome number (diploid)	: 40	Ref: 029199
Genetic marker(s) present	: No	
Chromosome arm no.	: 50	Ref: 029199

Expected vs observed heterozygosity of *Channa striata*



DNA content vs. phylogenetic sequence of *Channa striata*



## 1.11. FAO aquaculture production data for *Channa striata*

Country (Area)		1984	1985	1986	1987	1988	1989	1990
		1991	1992	1993	1994	1995	1996	1997
		1998	1999	2000	2001			
Philippines (4)	(t)	226	253	191	133	134	132	5
	(US\$'000)	257	288	219	131	142	147	9
	(t)	0	0	378	707	2,427	2,076	2,144
	(US\$'000)	0	0	688	1,456	3,598	2,856	3,158
	(t)	1,343	1,352	1,290	1,439			
	(US\$'000)	3,398	3,218	3,496	4,475			
Thailand (4)	(t)	4,863	7,364	5,986	3,294	4,040	3,732	3,800
	(US\$'000)	6,877	8,490	7,792	4,380	5,634	5,398	5,946
	(t)	5,560	4,714	5,909	6,500	5,790	7,750	6,921
	(US\$'000)	8,934	6,492	11,216	12,422	12,304	16,104	14,640
	(t)	5,336	4,005	4,447	5,300			
	(US\$'000)	7,442	6,585	7,214	8,480			
Total: 2	(mt)	5,089	7,617	6,177	3,427	4,174	3,864	3,805
	(US\$'000)	7,135	8,778	8,010	4,511	5,5445	5,544	5,954
	(mt)	5,560	4,714	6,287	7,207	8,217	9,826	9,065
	(US\$'000)	8,934	6,492	11,904	13,877	15,901	18,961	17,798
	(mt)	6,679	5,357	5,737	6,739			
	(US\$'000)	10,839	9,803	10,710	12,955			

## 1.12. Weight proportions and chemical composition of *Channa striata*

Level : species in general

Locality : Not stated.

Stockcode: 000357

MainRef.: 027117

### Gill area of *Channa striata*

Gill area : 163 (cm<sup>2</sup>)

Blood/water distance :

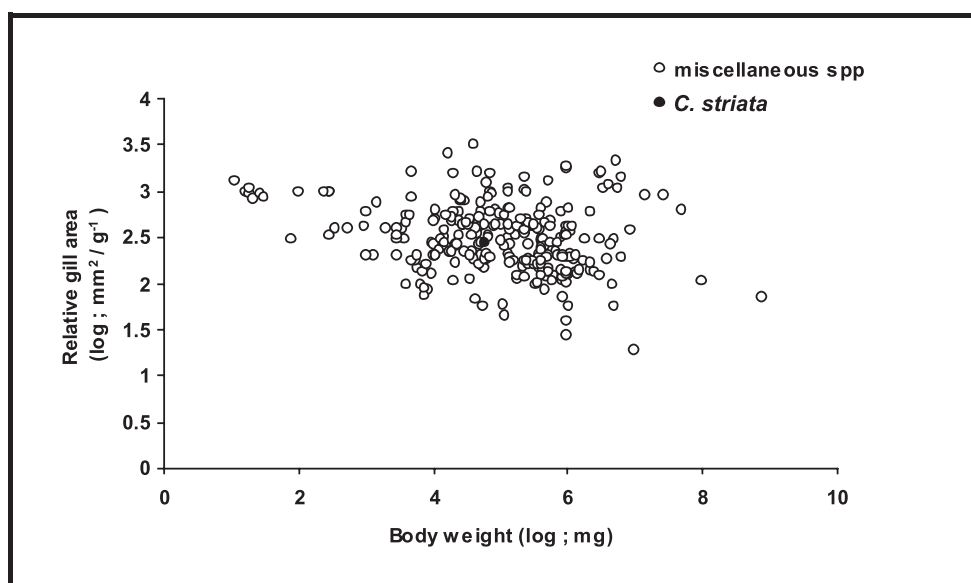
Body weight : 59.9 (g)

Gill area/weight : 2.72 (cm<sup>2</sup>/g)

MainRef. 002302

DataRef. 002321

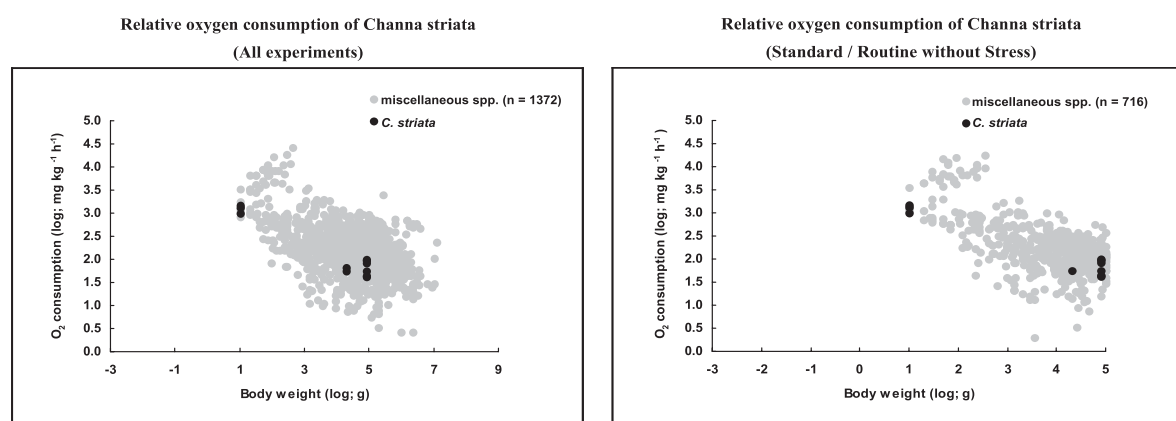
Relative gill area of *Channa Striata*





### 1.13. Oxygen consumption of *Channa striata*

(mg/kg/h)	at 20°C	Weight (g)	Temp. °C	Activity level	Applied stress	MainRef.
1493	777.3	0.01	28	routine	none specified	002120
1310	682.1	0.01	28	routine	none specified	002120
981	510.8	0.01	28	routine	none specified	002120
68.1	30.2	20	30	routine	other stress	002120
55.6	24.6	20	30	routine	none specified	002120
101	44.8	82	30	routine	none specified	002120
92.3	40.9	82	30	routine	none specified	002120
85.7	38.0	82	30	routine	none specified	002120
57	25.3	82	30	routine	none specified	002120
44.3	19.6	82	30	routine	none specified	002120
42.3	18.8	82	30	routine	none specified	002120



### 1.14. General information on the reproduction of *Channa striata*

Level : species in general

StockCode : 000357 MainRef : 001479

#### Mode and Type of Reproduction

Mode : dioecism

Fertilisation : external

Reproductivity : guarders, clutch tenders

Breeds in ditches, ponds and flooded paddy fields. Young shoal at the surface and are guarded by parents, hiding below the surface water. In captivity, as soon as the male bends its body close to the female during mating, milt is released following the release of the eggs (Ref. 45162).

#### Spawning Information for *Channa striata*

Locality : Mekong Mainstream

Stockcode : 000357

Season (% of mature females; 111 = presence of mature females):

MainRef.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
111 111 111 111 111 111 111 111 111 111 111 111

**Comment** : Eggs were observed from January-December, except in August. In Cambodia, eggs were encountered in May-June and November-December. In Sambor, Cambodia, fish guard their fry during June-July

Locality : India, Karnataka State

Stockcode: 000357

Season (% of mature females; 111 = presence of mature females):

MainRef.: 032692

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
111 111 111 111 111 111 111 111 111 111 111

DataRef.:039630



**Feeding**

Feeding type : plants/detritus+animals (troph. 2.8 and up)  
 Feeding habit : hunting macrofauna (predator)

Ref: 013497  
 Ref: 009497

Trophic level(s):	Original sample		Unfished population		Remarks	Ref: 013497
Estimation method:	Troph	s.e	Troph	s.e		
From diet composition:	3.7	0.60	3.7	0.60	Troph of recruits/juv.	
From indiv. food item:	3.5	0.42			Trophic level estimate	

**Additional remarks**

Feeds on smaller herbivorous fishes; enters the flooded forest in high water.

**1.16. Food items for *Channa striata***

Level : species in general				StockCode: 000357
Food item				Ref.
nekton				
finfish	n.a./other finfish	unidentified	unidentified	012693
zoobenthos				
benth. crust.	n.a./other benth. crustaceans	unidentified	unidentified	012975
zooplankton				
plank. crust.	cladocerans	unidentified	unidentified	028089
	plank. copepods	unidentified	unidentified	028089

**1.17. Diet composition of *Channa striata***

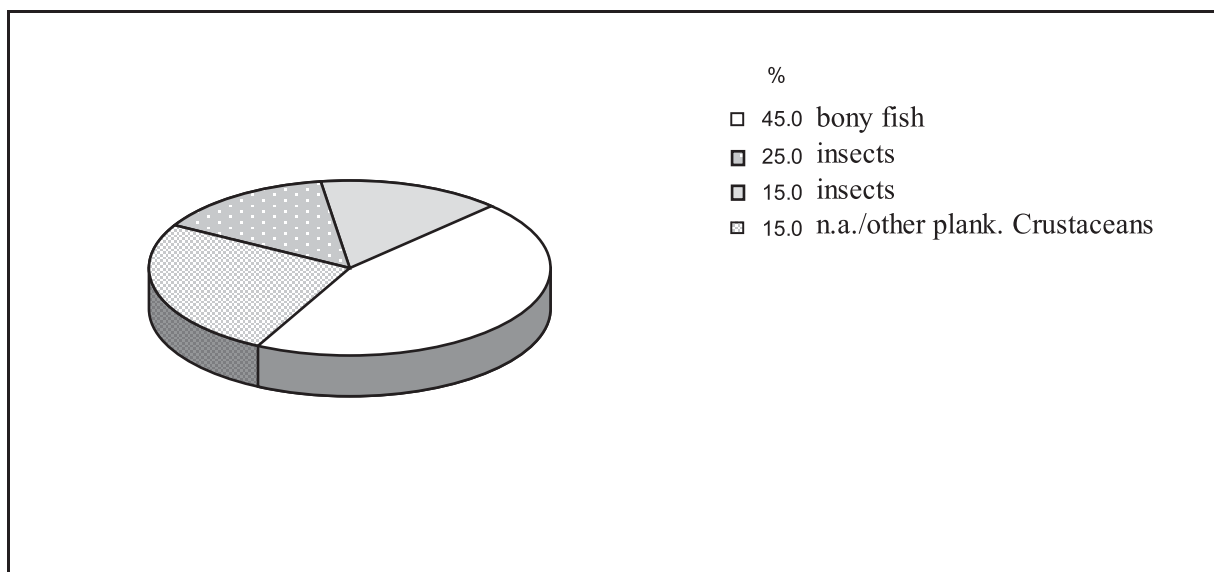
Level : species in general      StockCode : 000357      MainRef : 013497

Locality : Bukit Merah Reservoir, between September 1979 and August 1980

Stage of fish sampled : recruits/juv.      Number : 15

**Food group (%)**

- 45.0 bony fish, juv./adults
- 25.0 insects, both aquatic and terrestrial forms of Diptera, Odonata, etc., adults
- 15.0 insects, mainly Chironomidae, some Chaoboridae, Dysticidae, unid. larvae & nymphs, larvae
- 15.0 n.a./other plank. Crustaceans, Copepoda, Cladocera, Decapoda, juv./adults
- 100.0 Total

**Remarks**

Total = 1

## 1.18. Maximum weight/length/age of *Channa striata*

<b>Locality</b>		<b>India, Krishna and Godavari Rivers, Karnataka</b>	<b>StockCode : 000357</b>
Max weight	(g):	2500 total weight	Ref.: 043636
Max length	(cm) :	Same specimen for WL :	No Sex : unsexed
Max age	(yrs)No:	Same specimen for LT :	No
<b>Locality</b>		<b>India, Maharashtra</b>	<b>StockCode : 000357</b>
Max weight	(g):	1000 total weight	Ref.: 043634
Max length	(cm) :	Same specimen for WL :	No Sex : unsexed
Max age	(yrs)No:	Same specimen for LT :	No
<b>Locality</b>		<b>India, Tamil Nadu</b>	<b>StockCode : 000357</b>
Max length	(cm) :	19.5 Same specimen for WL : No	Sex : unsexed
Max age	(yrs)No:	Same specimen for LT :	No
<b>Locality</b>		<b>India, Western Ghats Rivers, Karnataka</b>	<b>StockCode : 000357</b>
Max length	(cm) :	45 Same specimen for WL :	No Sex : unsexed
Max age	(yrs) :	Same specimen for LT :	No
<b>Locality</b>		<b>Nepal, Rivers of terai and mid hills.</b>	<b>StockCode : 000357</b>
Max length	(cm) :	91.5 Same specimen for WL : No	Sex : unsexed
Max age	(yrs) :	Same specimen for LT :	No
Comment:			

Total = 5

## 1.19. Length-Weight relationships of *Channa striata*

(  $W = a * L^b$  with Length in cm and Weight in g )

<b>Locality :</b>			<b>StockCode : 000357</b>
Length range :	57 - 57	TL	Sample size : 1
a	0.0162		Correlation coefficient :
b	3		Ref.:
			Sex : unsexed

**Comment:** L-W relationship calculated from data in Ref. 40637.

<b>Locality : China Main,</b>			<b>StockCode : 000357</b>
Length range :	-	SL	Sample size :
a	0.0279		Correlation coefficient : 0.985
b	2.811		Ref.: 041847
			Sex : unsexed

Total = 2

## 1.20. Growth and mortality of *Channa striata*

Country	L (cm)	W (g)	Kt (/year)	t o (y)	Sex	Ref.
Sri Lanka	52 TL		0.21		unsexed	032692
China Main	36.8SL-	736	0.441	0.11	unsexed	041847
India	56.5 TL		0.42		unsexed	032692

## 1.21. Diseases reported for *Channa striata*

<b>StockCode: 000357</b>	<b>MainRef. : 042533</b>
Parasitic infestations (protozoa, worms, etc.): Acanthogyryus infestation	Ref. : 005435
Causative agent : <i>Acanthogyryus tilapiae</i>	
Occurrence : Barisal, Bangladesh, 1981	

**Remarks :** Infestation commonly occurs in the intestine. Besides 1981 (Ahmed and Rouf; Ahmed), the infestation was also recorded in 1997 (Ahmed and Ezaz) but with no specific locality cited.

- Parasitic infestations (protozoa, worms, etc.): Pallisentis disease Ref. : 042533  
 Causative agent : *Pallisentis sp.*  
 Occurrence : Chittagong, Bangladesh, 1974  
**Remarks** : Infestation commonly occurs in the body cavity, viscera, and intestine. Besides 1974 (Anonymous) the infestation was also recorded in 1978 (Ahmed and Begum) in the localities of Dhaka and Barisal and in 1968 (Ali) with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Fish louse infestation Ref. : 000060  
 Causative agent : *Argulus sp.*  
 Occurrence : Chittagong, Bangladesh, 1968  
**Remarks** : Infestation commonly occurs in the fins, gills and eyes. Besides infestation was also recorded in 1974 (Anonymous) in the localities of Barisal and Chittagong.
- Parasitic infestations (protozoa, worms, etc.): Contraecaecum disease Ref. : 042533  
 Causative agent : *Contraecaecum sp.*  
 Occurrence : Chittagong, Bangladesh, 1974  
**Remarks** : Infestation commonly occurs in the body cavity, stomach, intestine, viscera and pyloric caeca. Besides 1974 (Anonymous), the infestation was also recorded in 1968 (Ali) with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.) : Neocamallanus disease Ref. : 042533  
 Causative agent : *Neocamallanus sp.*  
 Occurrence : Chittagong, Bangladesh, 1974  
**Remarks** : Infestation commonly occurs in the pyloric caeca. Besides 1974 (Anonymous), the infestation was also recorded in 1968 (Ali) but with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.) : Anchistrocephalus disease Ref. : 042533  
 Neocamallanus sp. Chittagong, Bangladesh, 1974  
 Causative agent : *Anchistrocephalus sp.*  
 Occurrence : Chittagong, Bangladesh, 1974  
**Remarks** : Infestation commonly occurs in liver and intestine. Besides 1974 (Anonymous), the infestation was also recorded in 1968 (Ali) with no specific locality cited. The record from fresh water fishes of Bangladesh may involve a misidentification.
- Parasitic infestations (protozoa, worms, etc.): Phyllodistomum disease Ref.: 000235  
 Causative agent : *Phyllodistomum lancea*  
 Occurrence : Dhaka, Bangladesh, 1978  
**Remarks** : Infestation commonly occurs in the urinary bladder. Besides 1978 (Ahmed and Begum), the infestation was also recorded in 1981 (Ahmed) but with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Gnathostoma infestation Ref. : 026129  
 Causative agent : *Gnathostoma spinigerum*  
 Occurrence : Dhaka, Bangladesh, 1972  
**Remarks** : Infestation commonly occurs in the body cavity, stomach, intestine, viscera and muscles. Besides 1972 (Bashirullah), the infestation was also recorded in 1973 (Bashirullah) in Dhaka and/or Sylhet and in 1981 (Ahmed) with no specific locality cited. This nematode is the cause of gnathostomosis, which is a serious disease in man.
- Parasitic infestations (protozoa, worms, etc.): Euclinostomum infestation Ref. : 026129  
 Causative agent : *Euclinostomum multicaecum*  
 Occurrence : Dhaka, Bangladesh, 1982  
**Remarks** : Infestation commonly occurs in the stomach and muscles, kidney, liver, pharyngeal wall, and the external surface of the alimentary canal.



- Parasitic infestations (protozoa, worms, etc.): Isoparorchis Infestation Ref. : 042533  
 Causative agent : *Isoparorchis hypselobagri*  
 Occurrence : Dhaka, Bangladesh, 1972  
**Remarks** : Infestation commonly occurs in the swimbladder, body cavity, muscle, liver stomach, visceral surfaces and intestine. Besides 1972 (Bashirullah), the infestation was also recorded in 1973 (Bashirullah) in Dhaka and/or Sylhet, 1974 (Anonymous) in Chittagong, 1981 (Ahmed) and 1989 (Rahman) but with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Pallisentis infestation Ref. : 042533  
 Causative agent : *Pallisentis gaboos*  
 Occurrence : Dhaka, Bangladesh, 1978  
**Remarks** : Infestation commonly occurs in the intestine, body cavity and mesenteries. Besides 1978 (Ahmed and Begum), the infestation was also recorded in 1981 (Ahmed and Rouf; Ahmed) in the localities Barisal and Dhaka.
- Parasitic infestations (protozoa, worms, etc.) : Euclinostomum infestation Ref. : 042533  
 Causative agent : *Euclinostomum heterostomum*  
 Occurrence : Dhaka, Bangladesh, 1993  
**Remarks** : Infestation commonly occurs in the liver.
- Parasitic infestations (protozoa, worms, etc.): Camallanus infestation Ref. : 042533  
 Causative agent : *Camallanus intestinalus*  
 Occurrence : Dhaka, Bangladesh, 1974  
**Remarks** : Infestation commonly occurs the intestine.
- Parasitic infestations (protozoa, worms, etc.): Pallisentis infestation Ref. : 042533  
 Causative agent : *Pallisentis nagpurensis*  
 Occurrence : Dhaka and Barisal, Bangladesh, 1973  
**Remarks** : Infestation commonly occurs in the intestine. Besides 1973 (Ahmed and Rouf; Ahmed), the infestation was also recorded in 1973 (Bashirullah) in the locality of Dhaka and/or Sylhet and in 1993 (Khanum et al.) with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Procamallanus infestation Ref. : 042533  
 Causative agent : *Spirocamallanus mysti*  
 Occurrence : Dhaka and/or Sylhet, Bangladesh, 1973  
**Remarks** : Infestation commonly occurs in the stomach, intestine and liver. Besides 1973 (Bashirullah), the infestation was also recorded in 1981 (Ahmed) but with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Procamallanus infestation Ref. : 042533  
 Procamallanus (Procamallanus) spiculogubernaculus  
 Causative agent : *Procamallanus spiculogubernaculus*  
 Occurrence : Dhaka and/or Sylhet, Bangladesh, 1973  
**Remarks** : Infestation commonly occurs in the stomach and intestine. Besides 1973 (Bashirullah), the infestation was also recorded in 1981 (Ahmed) but with no specific locality cited.
- Viral diseases: Epizootic Ulcerative Syndrome Ref. : 044274  
 Causative agent : N.A.  
 Occurrence : Laguna de Bay, Philippines, 1991
- Parasitic infestations ( protozoa, worms, etc.): Fish louse infestation Ref. : 000060 and 026129  
 Causative agent : *Argulus sp.*  
 Occurrence : Luzon, Philippines, 1983  
**Remarks** : Infestation occurs commonly in the skin. Besides 1983 (Quines and Paycana), the infestation also occurred in 1988 (Natividad).

- Parasitic infestations (protozoa, worms, etc.): Clinostomoides infestation Ref. : 026129  
 Causative agent : *Clinostomoides brienii*  
 Occurrence : Luzon, Philippines, 1944  
**Remarks** : Infestation occurs most commonly in the gills, gill cavity, gall bladder, periocular tissue, brachioistegal musculature and pericardium. Besides 1944 (Tubangui and Masiluñgan), the infestation also occurred in 1988 (Velasquez).
- Parasitic infestations (protozoa, worms, etc.): Haplorchis infestation Ref. : 026129  
 Causative agent : *Haplorchis taichui*  
 Occurrence : Luzon, Philippines, 1939  
**Remarks** : Infestation commonly occurs in the musculature. Besides 1939 (Vazquez-Colet and Africa), the infestation was also recorded in 1973 (Velasquez) in Luzon and Mindanao.
- Parasitic infestations (protozoa, worms, etc.): Haplorchis infestation Ref. : 026129  
 Causative agent : *Haplorchis pumilio*  
 Occurrence : Luzon, Philippines, 1939  
**Remarks** : Infestation commonly occurs in the musculature.
- Parasitic infestations (protozoa, worms, etc.) : Anchor worm disease (Lernaeasp.) Ref.: 041805  
 Causative agent : *Lernaea sp.* 026129  
 Occurrence : Luzon, Philippines, 1988  
**Remarks** : The head of the parasite is embedded in the musculature with the body protruding externally.
- Parasitic infestations (protozoa, worms, etc.): Turbidity of the skin (freshwater fish) Ref.:041805  
 Causative agent : *Chilodonella sp.* 026129  
 Occurrence : Luzon, Philippines, 1990  
**Remarks** : Infestation commonly occurs in the skin.
- Parasitic infestations (protozoa, worms, etc.): Procerovum infestation Ref. : 026129  
 Causative agent : *Procerovum calderoni*  
 Occurrence : Luzon, Philippines, 1939  
**Remarks** : Infestation commonly occurs in the musculature and base of fins. Besides 1939 (Vazquez-Colet and Africa), the infestation also occurred in 1966 (Velasquez).
- Parasitic infestations (protozoa, worms, etc.): Camallanus disease Ref. : 026129  
 Causative agent : *Camallanus sp.*  
 Occurrence : Luzon, Philippines, 1982  
**Remarks** : Infestation occurs commonly in the intestine. Besides 1982 (Hopkins and Cruz), the infestation also occurred in 1983 (Quines and Paycana) and again in 1982 (Quines and Paycana).
- Parasitic infestations (protozoa, worms, etc.): False fungal infection (Epistylis sp.) Ref. : 041805  
 Causative agent : *Epistylis sp.* 026129  
 Occurrence : Luzon, Philippines, 1990  
**Remarks** : Infestation occurs most commonly in the skin.
- Parasitic infestations (protozoa, worms, etc.): Yellow grub Ref. : 000195  
 Causative agent : *Clinostomum complanatum* 026129  
 Occurrence : Luzon, Philippines, 1933  
**Remarks** : Infestation commonly occurs in the periocular tissues, gill cavity, brachioistegal musculature, and the pericardium. Besides 1933 (Tubangui), the infestation also occurred in 1988 (Velasquez).

- Parasitic infestations (protozoa, worms, etc.): Piscicola infestation Ref. : 005435  
 Fish leech Infestation 026129  
 Causative agent : *Piscicola sp.*  
 Occurrence : Luzon, Philippines, 1986  
**Remarks** : Infestation commonly occurs in the skin. Besides 1986 (Velasquez), the infestation was also recorded in 1988 by the same author.
- Parasitic infestations (protozoa, worms, etc.): Clinostomum infestation Ref. : 005435  
 (metacercaria) : Clinostomum sp. 026129  
 Causative agent : NA  
 Occurrence : Luzon, Philippines, 1983  
**Remarks** : Infestation occurs most commonly in the periocular tissues.
- Parasitic infestations (protozoa, worms, etc.): Cercaria disease (e.), Cercariosis Ref.:000193  
 Causative agent : *Diplostomum sp.* 026129  
 Occurrence : Luzon, Philippines, 1986  
**Remarks** : Infestation commonly occurs in the brain, intestine and musculature. Besides 1986 (Lopez), the infestation was also recorded in 1988 by the same author.
- Parasitic infestations (protozoa, worms, etc.): Trichodinosis Ref. : 000193  
 Trichodinella sp.; Trichodina infestation 026129  
 Causative agent : *Trichodina sp.*  
 Occurrence : Luzon, Philippines, 1990  
**Remarks** : Infestation occurs most commonly in the gills and skin.
- Parasitic infestations (protozoa, worms, etc.): False fungal infection (*Apiosoma sp.*) Ref. : 041805  
 Causative agent : *Apiosoma sp.* 026129  
 Occurrence : Luzon, Philippines, 1975  
**Remarks** : Infestation occurs most commonly in the gills and skin.
- Parasitic infestations (protozoa, worms, etc.): Skin flukes Ref. : 000060  
 Helminthose (skin and eventually gills afflicted) 026129  
 Causative agent : *Gyrodactilus sp.*  
 Occurrence : Luzon, Philippines, 1975  
**Remarks** : Infestation commonly occurs in the gills and skin.
- Parasitic infestations (protozoa, worms, etc.): Neodiplostomum disease Ref. : 026129  
 Causative agent : *Neodiplostomum sp.*  
 Occurrence : Luzon, Philippines, 1939  
**Remarks** : Infestation commonly occurs in the scales and skin. Besides 1939 (Vazquez-Colet and Africa), the infestation was also recorded in 1986 and 1988 (Velasquez).
- Parasitic infestations (protozoa, worms, etc.): Haplorchis Infestation Ref. : 026129  
 Causative agent : *Haplorchis yokogawai*  
 Occurrence : Luzon, Philippines, 1936  
**Remarks** : Infestation commonly occurs in the musculature. Besides 1936 (Garcia), the infestation also occurred in 1939 (Vazquez-Colet and Africa). This parasite has been associated with human myocardial complications and heart failure due to the blockage of coronary vessels caused by the parasites eggs entering the circulatory system by the intestinal mucosa. Ingestion of metacercaria in raw or inadequately cooked fish is the caused of human infections.

- Parasitic infestations (protozoa, worms, etc.): Euclinostomum infestation Ref. : 026129  
 Causative agent : *Euclinostomum multicaecum*  
 Occurrence : Luzon, Philippines, 1935  
**Remarks** : Infestation commonly occurs in the musculature. Besides 1935 (Tubangui and Masiluñgan), the infestation also occurred in 1960 (Velasquez).
- Parasitic infestations (protozoa, worms, etc.): Gnathostoma infestation Ref. : 026129  
 Causative agent : *Gnathostoma spinigerum*  
 Occurrence : Luzon, Philippines, 1936  
**Remarks** : Infestation commonly occurs in the musculature and visceral linings.
- Parasitic infestations (protozoa, worms, etc.): Neocamallanus infestation Ref. : 026129  
 Causative agent : *Neocamallanus ophicephali*  
 Occurrence : Luzon, Philippines, 1966  
**Remarks** : Infestation commonly occurs in the stomach, pyloric caeca and intestines. Besides 1966 (Velasquez), the infestation also occurred in 1980 (Velasquez), 1981 (Calhoun), 1982 (Boromthanasat), 1986 (Lopez) and 1988 (Lopez).
- Parasitic infestations (protozoa, worms, etc.): Centrocestus infestation Ref. : 026129  
 Causative agent : *Centrocestus caninus*  
 Occurrence : Luzon, Philippines, 1939  
**Remarks** : Infestation occurs most commonly in the gills.
- Parasitic infestations (protozoa, worms, etc.): Fish louse infestation Ref. : 026129  
 Causative agent : *Argulus indicus*  
 Occurrence : Luzon, Philippines, 1986  
**Remarks** : Infestation commonly occurs in the skin. Besides 1986 (Lopez), the infestation was also recorded in 1988 by the same author. Velasquez also reported the parasite in 1986 and 1988.
- Parasitic infestations (protozoa, worms, etc.): Clinostomum infestation Ref. : 026129  
 Causative agent : *Clinostomum philippinensis*  
 Occurrence : Luzon, Philippines, 1960  
**Remarks** : Infestation commonly occurs in pericardium, gill cavity and tissues under the pectoral fins. Besides 1960 (Velasquez), the infestation was also recorded in 1966 and 1988 in Luzon, and 1975 in Luzon and Mindanao by the same author.
- Parasitic infestations (protozoa, worms, etc.): Anchor worm disease, lernaecosis Ref. : 000060  
 Causative agent : *Lernaea cyprinacea* 026129  
 Occurrence : Luzon, Philippines, 1988  
**Remarks** : The parasites head is commonly embedded in the eye, nostril, and host. With the body protruding externally.
- Parasitic infestations (protozoa, worms, etc.): Opegaster infestation Ref. : 026129  
 Causative agent : *Opegaster minima*  
 Occurrence : Luzon, Philippines, 1944  
**Remarks** : Infestation commonly occurs in the intestine.
- Parasitic infestations (protozoa, worms, etc.): Taphrobothrium infestation Ref. : 042533  
 Causative agent : *Taphrobothrium japonense*  
 Occurrence : not specified, Bangladesh, 1993  
**Remarks** : (Location of infestation not specified)

- Parasitic infestations (protozoa, worms, etc.) , Polyonchobothrium Disease Ref. : 042533  
 Causative agent : Polyonchobothrium sp.  
 Occurrence : not specified, Bangladesh, 1993  
**Remarks** : (Location of infestation not specified.)
- Parasitic infestations (protozoa, worms, etc.): Bothriocephalus infestation Ref. : 042533  
 Causative agent : *Bothriocephalus cuspidatus*  
 Occurrence : not specified, Bangladesh, 1993  
**Remarks** : Infestation commonly occurs in the intestine and pyloric caeca. The parasite is a North American species, so this report from Bangladesh is probably based on a misidentification.
- Parasitic infestations (protozoa, worms, etc.): Paracamallanus infestation Ref. : 042533  
 Causative agent : *Paracamallanus sweeti*  
 Occurrence : not specified, Bangladesh, 1993  
**Remarks** : Infestation commonly occurs in the liver, esophagus, stomach and intestine.
- Parasitic infestations (protozoa, worms, etc.): Allogomtiorema infestation Ref. : 042533  
 Causative agent : *Allogomtiorema attu*  
 Occurrence : not specified, Bangladesh, 1993  
**Remarks** : Infestation commonly occurs in the stomach and intestine.
- Parasitic infestations (protozoa, worms, etc.): Pallisentis infestation Ref. : 042533  
 Causative agent : *Pallisentis ophiocephali*  
 Occurrence : not specified, Bangladesh, 1967  
 Remarks : Infestation commonly occurs in the stomach, viscera, muscles and intestine. Besides 1967 (Rahman and Ali), the infestation was also recorded in 1974 (Anonymous) and 1989 (Rahman) both with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Echinocephalus disease Ref. : 042533  
 Causative agent : *Echinocephalus sp.*  
 Occurrence : not specified, Bangladesh, 1968  
**Remarks** : Infestation commonly occurs in the intestine. Besides 1968 (Ali), the infestation was also recorded in 1974 (Anonymous) but with no specific locality cited.
- Parasitic infestations (protozoa, worms, etc.): Posthodiplostomum disease Ref. : 026129  
 Causative agent : *Posthodiplostomum sp.*  
 Occurrence : not specified, Philippines, 1976  
**Remarks** : Infestation commonly occurs in the scales. Besides 1976 (Velasquez), the infestation was also recorded in 1977 by the same author.
- Parasitic infestations (protozoa, worms, etc.): Posthodiplostomum disease Ref. : 000060  
 Infectious Ascites; Haeromorrhagic; Red Fin Disease  
 Causative agent : *Aeromonas*  
 Occurrence : not specified, 1971  
**Remarks** : The infection were recorded in 1971 (Bullock et al.), 1978 (Egusa) and later 1986 (Saitanu)
- Parasitic infestations (protozoa, worms, etc.): Posthodiplostomum infestation Ref. : 026129  
 Causative agent : *Posthodiplostomum grayi*  
 Occurrence : not specified, Philippines, 1943  
**Remarks** : Infestation commonly occurs in the body cavity.
- Parasitic infestations (protozoa, worms, etc.): Neocamallanus infestation Ref. : 026129  
 Causative agent : *Neocamallanus ophicephali*  
 Occurrence : Sylhet, Bangladesh, 1969  
**Remarks** : Infestation commonly occurs in the intestine and pyloric caeca. Besides 1969 (Khan and Yaseen), the infestation was also recorded in 1973 (Bashirullah) in Dhaka and/or Sylhet, 1974 (Bashirullah) and 1976 (Ahmed) in Dhaka, and recorded in 1974 (Anonymous), 1981 (Ahmed) and 1989 (Rahman) with no specific locality cited.



## 1.22. FAO annual catch data (in tonnes) for *Channa striata*

Country										
1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
2000	2001									
Philippines										
			FAO Area : 4							
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1,308	3,228	3,228	2,946	
7,025	7,863	7,609	25,751	11,420	12,009	12,009	7,521	6,933	7,199	
7,671	7,331	7,219	13,104	5,619	6,018	5,457	4,547	4,856	5,789	
6,386	6,698									
Thailand										
			FAO Area : 4							
4,320	4,680	5,040	5,400	5,850	6,300	6,750	7,290	7,830	8,370	
9,000	9,720	10,440	11,250	12,150	13,050	14,040	15,120	16,290	17,550	
17,700	18,300	24,100	24,100	24,900	27,047	19,706	17,979	24,481	21,613	
23,182	27,046	20,134	16,424	15,531	14,478	17,556	16,267	11,760	11,168	
13,001	14,440	13,986	18,591	21,400	21,810	25,509	24,099	16,664	17,995	
20,500	21,400									
Total										
4,320	4,680	5,040	5,400	5,850	6,300	6,750	7,290	7,830	8,370	
9,000	9,720	10,440	11,250	12,150	13,050	14,040	15,120	16,290	17,550	
17,700	18,300	24,100	24,100	24,900	27,047	21,014	21,207	33,209	24,559	
30,207	34,909	27,743	42,175	26,951	26,487	28,064	23,788	18,694	18,368	
20,672	21,771	21,205	31,695	27,019	27,828	30,966	28,646	21,520	23,784	
26,886	28,098									

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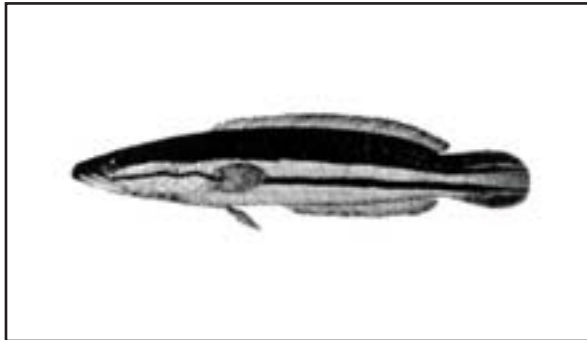


# CHANNA MICROPELTES

(Cuvier, 1831)

Giant snakehead

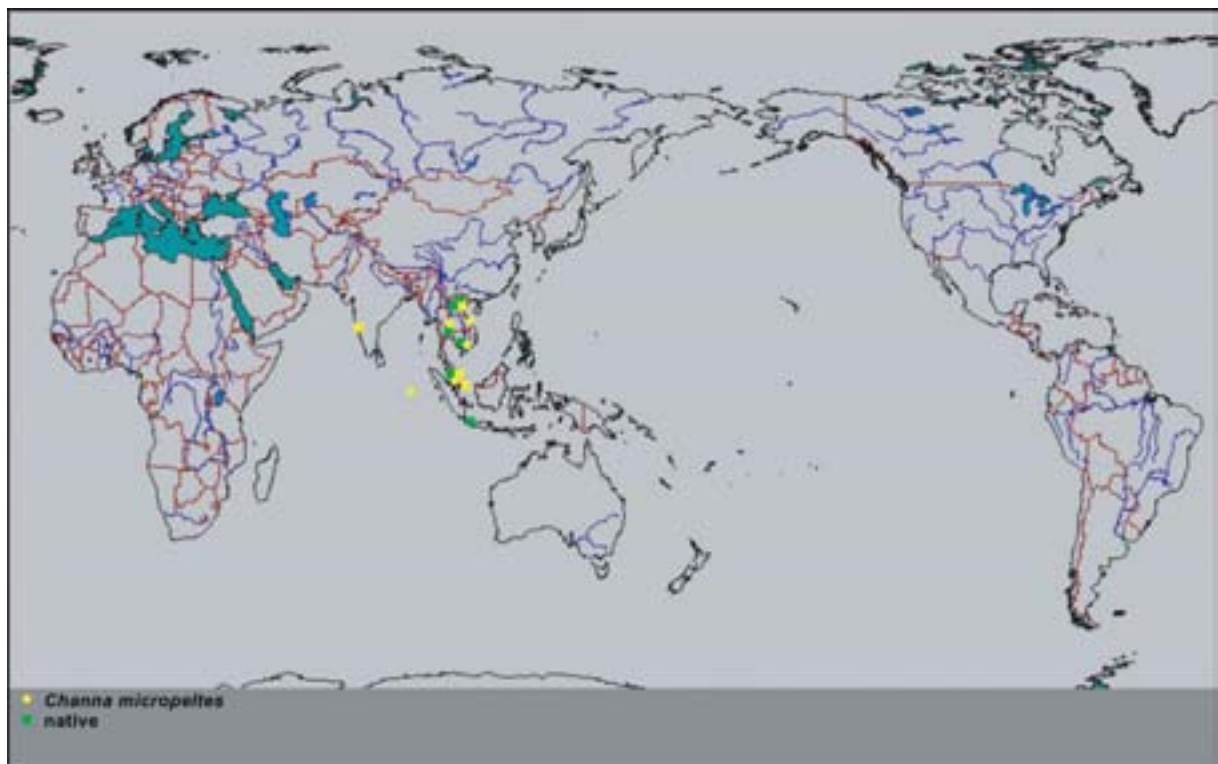
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## 2.1 Summary information on the family *Channidae*

Family	: Channidae (Snakeheads)	
Order	: Perciformes	MainRef. : 007463
Class	: Actinopterygii (ray-finned fishes)	FamCode : 431
Number of genera	: 2	
Number of species	: 21	
Occurs in	: <input type="radio"/> Marine	
	<input type="radio"/> Brackish	
	<input checked="" type="radio"/> Freshwater	

Species currently in FishBase : Genera: 2 Species: 31 (Including subspecies) Complete : Yes

### Remarks:

Distribution : tropical Africa (three species) and Southern Asia. Elongated body; lower jaw protruding. Dorsal and anal fin bases long. Pelvic fins may be lacking in some; with 6 rays when present. No spines in fins. Scales ctenoid or cycloid. Air-breathing through suprabronchial organ. About 1.2 m maximum length. Important in aquaculture and commonly used in rice-fish farming. Some species are widely introduced. Number of species: 26 (Ref. 36343).  
Etymology: Greek, channe, -es = anchovy (Ref. 45335).

## 2.2. Information on the genus *Channa* and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

<b>Bostrychoides</b>	Status : synonym	Gender : masculine
Lacepède, 1801, p. 144, CAS Ref: 2710		
Type by monotypy.		
Type species	: <i>Bostrychoides oculatus</i>	Lacepède, 1801
Current genus	: <i>Channa</i>	
<b>Channa</b>	Status : valid	Gender : feminine
Scopoli (exGronow), 1777, p. 459, CAS Ref: 3990		
Type by subsequent monotypy.		
Type species	: <i>Channa orientalis</i>	Bloch& Schneider, 1801
Current genus	: <i>Channa</i>	
<b>Channa</b>	Status : not available	Gender : feminine
Gronow, 1763, p. 135, CAS Ref: 1910		
Type species	:	
Current genus	:	
<b>Ophicephalus</b>	Status : synonym	Gender : masculine
Bloch, 1793, p. 137, CAS Ref: 4868		
Type by subsequent designation.		
Type species	: <i>Ophicephalus striatus</i>	Bloch, 1793
Current genus	: <i>Channa</i>	
<b>Philypnoides</b>	Status : synonym	Gender : masculine
Bleeker, 1849, p. 19, CAS Ref: 319		
Type by monotypy.		
Type species	: <i>Philypnoides surakartensis</i>	Bleeker, 1849
Current genus	: <i>Channa</i>	
<b>Psiloides</b>	Status : other	Gender : masculine
Fischer, 1813, p. 74, 111, CAS Ref: 1331		
Type by being a replacement name.		
Type species	: <i>Bostrychoides oculatus</i>	Lacepède, 1801
Current genus	: <i>Channa</i>	

**Pterops**

Status : synonym

Gender : masculine

Rafinesque, 1815, p. 84, 91, CAS Ref: 3584

Type by being a replacement name.

Type species : *Bostrychoides oculus*

Lacepède, 1801

Current genus : *Channa***2.3. General information on *Channa micropeltes*****Classification**

Class	: Actinopterygii (Ray-finned fishes)	MainRef. 002091
Order	: Perciformes	
Family	: Channidae (Snakeheads)	
Species	: <i>Channa micropeltes</i>	
Author	: (Cuvier, 1831)	Author Ref.

**Environment**

Freshwater	: Yes	Habitat	: Benthopelagic
Brackish	: No	Migrations	:
Saltwater	: No	Depth range	: 100

**Importance**

Landing statistics	: From 1,000 to 10,000 tonnes	Ref. 004931
Importance to fisheries	: Commercial	
Other methods	: <input checked="" type="checkbox"/> Seines <input checked="" type="checkbox"/> Gillnets <input type="checkbox"/> Castnets <input checked="" type="checkbox"/> Traps <input type="checkbox"/> Spears <input type="checkbox"/> Trawls <input type="checkbox"/> Dredges <input type="checkbox"/> Liftnets <input type="checkbox"/> Hooks+Lines <input type="checkbox"/> Other	
Used for aquaculture	: Commercial	Ref. 012108
Used as bait	: Never/rarely	Ref.
Aquarium fish	: Commercial	Ref. 004537
Game fish	: Yes	Ref. 004833
Dangerous fish	: Harmless	Ref.
Electrobiology	: No special ability	Ref.

**Size and age**

Maximum length (cm)	(male/unsexed) : 130 SL	(female) :	Ref. 030857
Common length (cm)	(male/unsexed) :	(female) :	Ref.
Maximum weight (g)	(male/unsexed) : 20,000.00	(female) :	Ref. 004835

**Remarks:**

Usually associated with deep water bodies (Ref. 27732). Found in large streams and canals (Ref. 4833), with standing or slowly flowing water (Ref. 12693). Preys mainly on fish but also feeds on some crustaceans. Utilized as a food fish (Ref. 4931).

**2.4. Synonyms, misidentifications, etc. used for *Channa micropeltes***

Synonym	Author	Status	Ref.
<i>Ophicephalus bivittatus</i>	Bleeker, 1845	junior synonym	002091
<i>Channa diplogramme</i>	nonDay, 1865	misidentification	027732
<i>Ophiocephalus micropeltes</i>	Cuvier, 1831	misspelling	040966
<i>Ophicephalus micropeltes</i>	Cuvier, 1831	original combination	002091
<i>Channa micropeltes</i>	Cuvier, 1831	new combination	002091
<i>Ophicephalus serpentinus</i>	Cuvier, 1831	junior synonym	002091
<i>Ophicephalus stevensii</i>	Bleeker, 1853	junior synonym	002091
<i>Ophiocephalus studeri</i>	Volz, 1903	junior synonym	002091

## 2.5. Common names for *Channa micropeltes*

Name	Language	Country	Ref.
Trey chhdaur	Khmer	Cambodia	012693
Trey chhdor	Khmer	Cambodia	036654
Trey diep	Khmer	Cambodia	012693
Malabar snakehead	English	India	004833
Kamal fish	Malay	Indonesia	
Pa do	Laotian	Lao People's Dem. Rep.	004792
Pa meng phou	Laotian	Lao People's Dem. Rep.	037767
Toman	Malay	Malaysia	004835
Singapore dalag	English	Philippines	012157
Snakehead fish	English	Thailand	006459
Pla ai pok	Thai	Thailand	009648
Pla cha do	Thai	Thailand	009648
Pla ma lang poo	Thai	Thailand	009648
Giant snakehead	English	United Kingdom	012693
Indonesian snakehead	English	United Kingdom	012108
Giant snakehead	English	USA (contiguous states)	004537
Red snakehead	English	USA (contiguous states)	004537
Cá bong	Vietnamese	Viet Nam	036625

## 2.6. Distribution of *Channa micropeltes*

**Asia:** Mekong and Chao Phraya Basins; the Malay Peninsula, and the islands of Sumatra and Borneo. Material from India referring to this species usually refers to a distinct species. **MainRef.: 027732**  
 Latitudinal range : 10° N - 1° N Temperature range : 25 - 28 °C Ref.: 1672

**Status of threat : NL.**

Country	Status	Ref.
Cambodia	native	012693
	Occurs in the Mekong Basin (Ref. 12693). Found around the Tonle Sap River, Great Lake (Ref. 36651, 36686) and Siem Reap (Ref. 36654). Also Ref. 27732, 33813, 36662, 37772.	
India	misidentification	004833
	Restricted to Kerala (Ref. 4833, 43640). Material from India referring to this species usually refers to a distinct species for which the earliest available name is <i>C. diplogramme</i> Day 1865 (Ref. 27732). Reported a decline of its population due to destructive fishing activities (Ref. 45212).	
Indonesia	native	002091
	Occurs in Sumatra and Borneo (Ref. 27732). Also Ref. 7050.	
Lao People's Dem. Rep.	native	043281
	Known from the Mekong Basin (Ref. 43281). Found in the lower Xe Bangfai, tributary of the Mekong Basin (Ref. 27732), around Pak Beng to the Khone Falls (Ref. 37772) and Ban Hang Khone, a village on an island in the middle of the mainstream Mekong River just below the Great Khone Waterfalls in Khong District, Champasak Province (Ref. 37767). Also Ref. 4792, 30857.	
Malaysia	native	004835
Myanmar	questionable	004833
Singapore	introduced	038466
Thailand	native	026336
	Occurs in the Chao Phraya and Mekong Basins (Refs. 27732, 9648), Maeklong, Peninsular and Southeast Thailand river systems (Ref. 26336). Captured from the wild for the ornamental fish trade (Ref. 6459) Also Ref. 7306, 37772, 37773, 43638.	
Viet Nam	native	027732
	Occurs in the Mekong Basin (Ref. 27732). Also Ref. 4835, 36625, 36654.	

**Total native = 6 Total introduced = 1**

## 2.7. Introductions of *Channa micropeltes*

**Asia** : Mekong and Chao Phraya Basins; the Malay Peninsula, and the islands of Sumatra and Borneo. Material from India referring to this species usually refers to a distinct species.

Year : 1989                      Established : unknown                      Ref. 012157  
 Introduced : to Philippines                      from Unknown  
 Reason : ornamental

**Asia** : Mekong and Chao Phraya Basins; the Malay Peninsula, and the islands of Sumatra and Borneo. Material from India referreing to this species usually refers to a distinct species.

Year : unknown                      Established : yes                      Ref. 038466  
 Introduced : to Singapore                      from Unknown  
 Reason : unknown

**Asia** : Mekong and Chao Phraya Basins; the Malay Peninsula, and the islands of Sumatra and Borneo. Material from India referring to this species usually refers to a distinct species.

Year : unknown                      Established : no                      Ref.  
 Introduced : to USA                      from Unknown  
 Reason : ornamental

### Remarks:

Collected from open waters in Maine, Massachusetts and Rhode Island. This tropical/subtropical species could not become established in those temperate waters. The pathway into these New England states was likely aquarists who released their 'pets' when they grew too large for their aquaria and/or it became too costly to feed them.

## 2.8. Summary information (no. of records) available for *Channa micropeltes*

**Level : species in general**

**StockCode: 027732**

**MainRef.: 027732**

**Asia** : Mekong and Chao Phraya Basins; the Malay Peninsula, and the islands of Sumatra and Borneo. Material from India referring to this species usually refers to a distinct species.

Ecology	1	Max. sizes	1	Strains	0
Food items	5	FAO catches	15502	Diseases	0
Food consumption	0	Genetics	1	Ciguatera	0
Diet composition	0	Allele frequency	0	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	0
Predators	0	Reproduction	1	Gill area	0
Morphology	1	Spawning	0	Swimming type	0
Processing	0	Eggs	0	Swimming speed	0
Growth/mortality	0	Egg dev't.	0	Vision	0
Maturity	0	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	3
L/W relat.	1	Aquaculture	0	Occurrence	54

## 2.9. Morphology of *Channa micropeltes*

Level: species in general

StockCode : 000358

Main Ref.: 027732

Appearance refers to : O females O males

### Diagnostic Characters

A broad, dark longitudinal stripe in adults; two black longitudinal stripes with a bright orange intermediate area in juveniles (Ref. 27732)

### Descriptive Characters

Body shape lateral	: elongated	Dorsal head profile:	more or less straight
Operculum present	: No		
Type of eyes	: more or less normal		
Horizontal stripes	: present		
Vertical stripes	: absent		
Operculum present	: absent		
Type of eyes	: absent		
Spots	: no spots		

### Meristic Characters

Lateral Lines	interrupted : No
Scales on lateral line	83 -94
Vertebrae	prenatal

### Dorsal fins

Number of fins	: 1	spines total	: soft-rays total
Adipose fin	: absent	finlets dorsal	: finlets ventra

### Caudal fin

Shape of fin	: more or less	truncate
Attributes	: more or less	normal
Paired fins		
Pectoral attributes	: more or less	normal
Pelvics attributes	: more or less	normal
position	: abdominal	behind origin of D1

## 2.10. Genetic information for *Channa micropeltes*

Level : species in general

MainRef: 012337

Locality : Unspecified

Chromosomenumber (haploid) : 22

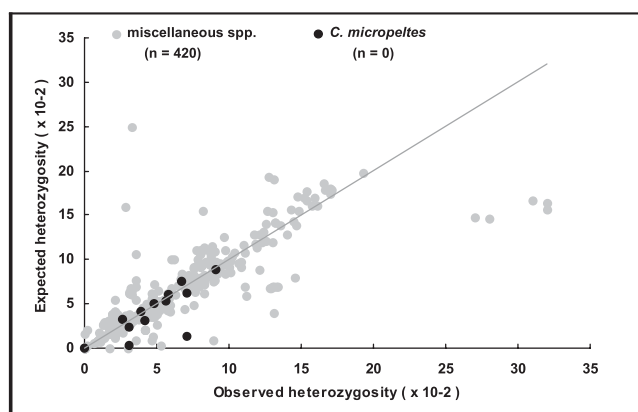
Ref: 012337

Chromosome number (diploid) : 44

Ref: 012337

Genetic marker(s) present : No

Expected vs observed heterozygosity of *Channa micropeltes*





## 2.11. FAO aquaculture production data for *Channa micropeltes*

Country (Area)		1984	1985	1986	1987	1988	1989	1990
		1991	1992	1993	1994	1995	1996	1997
		1998	1999	2000	2001			
Malaysia (4)	(t)	0	0	0	0	0	0	0
	(US\$'000)	0	0	0	0	0	0	0
	(t)	0	0	108	18	181	212	280
	(US\$'000)	0	0	240	38	319	443	579
	(t)	595	1,241	1,242	1,126			
	(US\$'000)	850	2,201	2,200	1,876			
<b>Singapore (4)</b>	(t)	0	0	0	0	0	0	0
	(US\$'000)	0	0	0	0	0	0	0
	(t)	0	0	0	0	65	43	100
	(US\$'000)	0	0	0	0	222	122	321
	(t)	200	380	500	613			
	(US\$'000)	479	1,233	2,219	2,155			
<b>Thailand (4)</b>	(t)	183	630	386	325	198	295	500
	(US\$'000)	166	497	331	285	164	313	548
	(t)	700	905	762	838	639	700	593
	(US\$'000)	823	1,074	1,005	1,113	769	998	609
	(t)	1,398	119	80	102			
	(US\$'000)	1,080	88	60	77			
	(mt)	183	630	386	325	198	295	500
	(US\$'000)	166	497	331	285	164	313	548
<b>Total: 3</b>	(mt)	700	905	870	856	885	955	973
	(US\$'000)	823	1,074	1,246	1,151	1,311	1,563	1,509
	(mt)	2,193	1,740	1,822	1,841			
	(US\$'000)	2,409	3,522	4,479	4,108			

## 2.12. General information on the reproduction of *Channa micropeltes*

**Mode and Type of Reproduction**      **StockCode : 000358**      **MainRef : 001672**  
 Mode : dioecism  
 Fertilization : external  
 Batch spawner : No  
 Reproductive guild : guarders

**Ecology of *Channa micropeltes***      **StockCode: 000358 000344**      **MainRef.: 012693**  
**Habitats**

Streams : Yes      Lake: Yes      Cave: No  
 Estuaries/lagoons/brackish seas: No  
 Intertidal : No      Soft: No      Rocky: No      Mangroves/marshes/swamps: No  
 Marine : No      Oceanic: No      Neritic : No      Coral reefs: No  
 Tropical      soft bottom: No      Hard bottm: No      Seagrass beds: No      Macrophyte: No

### Feeding

Feeding Type : Mainly animals (troh 2.8 and up)      Ref: 012693  
 Feeding Habit : Hunting macrofauna (predation)      Ref: 012975

**Trophic level(s) :**      **Original sample**      **Unfished population**      **Remarks**  
 Estimation method      Troph s.e      troph s.e  
 From indiv. food item : 3.9      0.56      -      -      propic level estimate

## 2.13. Food items for *Channa micropeltes*

StockCode: 000358

Food item				Ref.
<b>nekton</b>				
finfish	bony fish	unidentified	unidentified	033813
		unidentified	unidentified	004796
<b>others</b>				
herps	n.a./other reptiles	unidentified larvae	unidentified	004796
<b>zoobenthos</b>				
benth. crust.	n.a./other benth.	unidentified	unidentified	033813
	crustaceans			
worms	n.a./other annelids	Lumbricidae	unidentified	004796

## 2.14. Maximum weight/length/age of *Channa micropeltes*

Locality	India, not specified		StockCode : 000358
Max weigh (g): 20000	Total weight	Same specimen for WL : No	Ref. : 043641
Max length (cm): 100	TL	Same specimen for WL : No	Sex : Unsexed

## 2.15. Length-Weight relationships of *Channa micropeltes*

( $W = a \cdot L^b$  with Length in cm and Weight in g)

Locality			StockCode : 000358
Length range	: 70-70 TL	Sample: 1	MainRef: 040637
a	: 0.0219	Correlation coefficient :	
b	: 3		
Comment	: L-W relationship calculated from data in		Ref. 40637.

## 2.16. FAO annual catch data (in tonnes) for *Channa micropeltes*

Country	1950	19501	1952	1953	1954	1955	1956	1957	1958	1959
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	2000	2001								
<b>Indonesia, FAO Area : 4</b>										
	2,100	2,100	2,400	2,800	2,600	3,000	3,400	3,700	3,100	4,100
	4,000	4,500	4,600	4,700	4,700	4,600	5,600	5,800	5,000	5,000
	4,900	4,800	4,900	4,300	4,716	5,036	9,946	9,513	8,145	8,189
	8,801	8,482	7,619	8,866	9,599	10,103	9,024	10,071	10,424	9,554
	8,523	10,128	7,910	7,903	13,236	9,021	11,615	10,117	8,253	8,787
	7,771	7,060								

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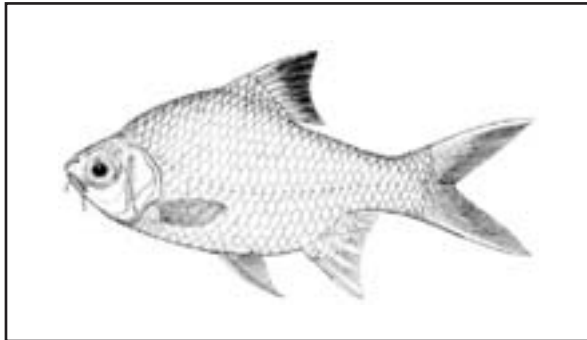
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# BARBONYMUS ALTUS

(Günther, 1868)

Red tailed tinfoil

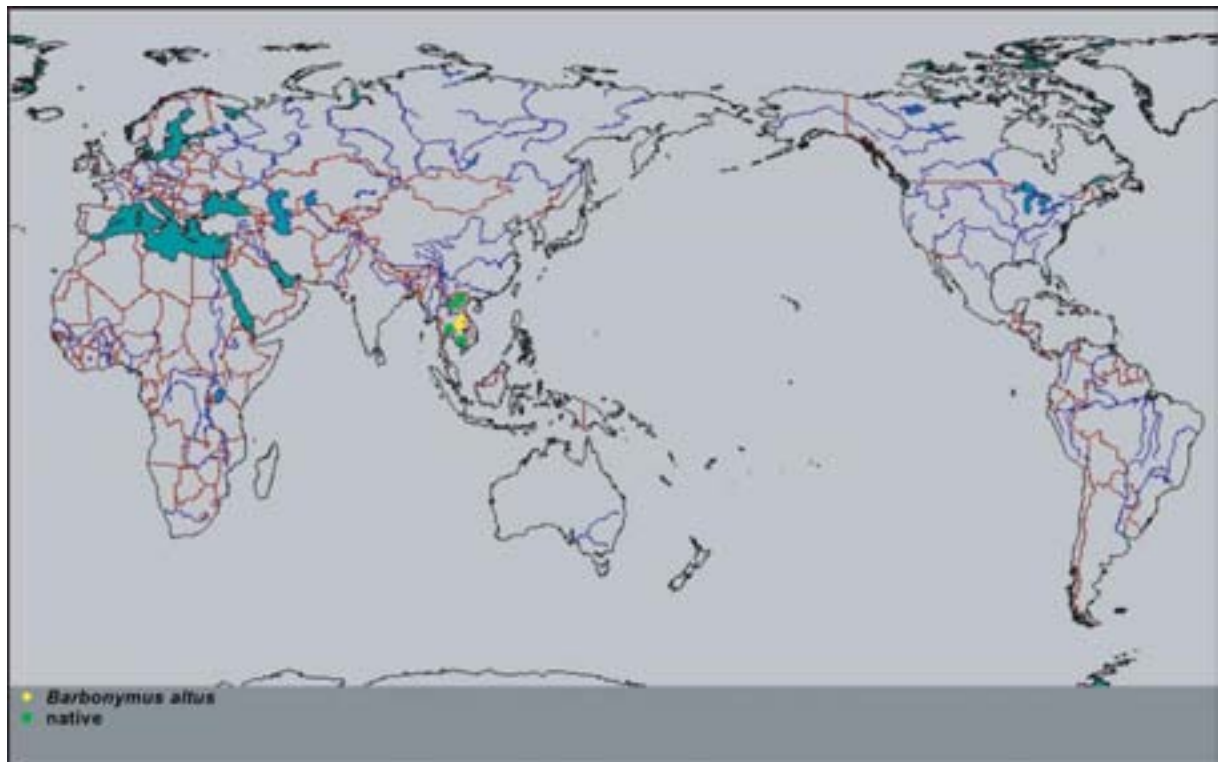
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Picture by [FAO](#)



Picture by [Warren, T](#)



### 3.1. Summary information on the family Cyprinidae

Family : Cyprinidae (Minnows or carps)  
 Order : Cypriniformes MainRef. : 007463  
 Class : Actinopterygii (ray-finned fishes) FamCode : 122  
 Number of genera : 210  
 Number of species : 2010  
 Occurs in :  Marine  
            Brackish  
            Freshwater

Aquarium fishes : many  
 First fossil record : Lower Tertiary Eocene Ref. : 004879  
 Species currently in FishBase, Genera : 331, Species: 2408 (Including subspecies), Complete: Yes



Distribution: North America (Northern Canada to Southern Mexico), Africa, and Eurasia. Pharynx with 1-3 rows of teeth, each row with a maximum of 8 teeth. Usually thin lips, plicae or papillae absent; mouth sometimes suckerlike (Garra and Labeo). With or without barbels. Premaxilla usually borders the upper jaw making the maxilla entirely or almost entirely excluded from the gape. Usually protrusible upper jaw. Dorsal fin with spinelike rays in some. Primitive number of chromosomes 2n=50, some with 48; polyploidy exists. Maximum length at least 2.5 m to probably 3 m in *Catlocarpio siamensis*; many species less than 5 cm. Mainly non-guarders, but in some species males build nests and/or protect the eggs.  
 Etymology: Greek, kyprinos = goldfish. 1828 (Ref. 45335).

### 3.2. Information on the genus Barbonymus and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

Barbonymus Status : no revision Gender: masculine  
 Kottelat, 1999, p. 595, CAS Ref: 24610  
 Type by original designation.  
 Type species : *Barbus schwanenfeldii* Bleeker, 1853  
 Current genus : Barbonymus

### 3.3. General information on *Barbonymus altus*

#### Classification

Class	: Actinopterygii (Ray-finned fishes)	MainRef.	027732
Order	: Cypriniformes		
Species	: <i>Barbonymus altus</i>		
Author	: (Günther, 1868)	Author Ref.	
	Date Eschmeyer, pers. comm.		

#### Environment

Freshwater	: Yes	Habitat	: Benthopelagic
Brackish	: No	Migrations	:
Saltwater	: No	Depth range	:



### Importance

Main catching method	:				
Other methods	:	<input checked="" type="checkbox"/> Seines	<input checked="" type="checkbox"/> Gillnets	<input type="checkbox"/> Castnets	<input checked="" type="checkbox"/> Traps <input type="checkbox"/> Spears
		<input type="checkbox"/> Trawls	<input type="checkbox"/> Dredges	<input type="checkbox"/> Liftnets	<input type="checkbox"/> Hooks+Lines <input type="checkbox"/> Other
Used for aquaculture	:	Commercial			Ref. 012693
Used as bait	:	Never/rarely			Ref.
Aquarium fish	:	Commercial based mainly on capture			Ref. 006459
Game fish	:	No			Ref.
Dangerous fish	:	Harmless			Ref.
Electrobiology	:	No special ability			Ref.

### Size and age

Maximum length (cm) (male/unsexed)	:	20 SL (female)	:	Ref. 030857
Common length (cm) (male/unsexed)	:	15 SL (female)	:	Ref. 012693

### Remarks:

Occurs at midwater depths in large and medium-sized rivers and floodplains. Feeds on various plant and animal matter. Commonly found near villages where it feeds on organic detritus disposed of by humans (Ref. 12693). Reported to be occasionally poisonous, causing vomiting, due the fruits it eats (Ref. 12369). Colonizes inundated forests and adults migrate back to the river in October. Young of the year follow thereafter when the water levels recede. Large-sized fish are marketed fresh while smaller ones are used to make prahoc and nuoc mam (Ref. 12693). Popular fish in the aquarium trade where it is sold under the name of "tinfoil barb" (Ref. 12693). Captured from the wild for the ornamental fish trade in Thailand (Ref. 6459). Cultured in floating cages in Viet Nam (Ref. 12693).

### 3.4. Synonyms, misidentifications, etc. used for *Barbonymus altus*

Synonym	Author	Status	Ref.
<i>Puntius altus</i>	Günther, 1868	new combination	26336
<i>Barbus altus</i>	Günther, 1868	original combination	1632
<i>Barbonymus altus</i>	Günther, 1868	new combination	43281
<i>Barbodes altus</i>	Günther, 1868	new combination	26336
<i>Puntius bocourti</i>	Bleeker, 1865	other	1632
<i>Barbodes foxi</i>	Fowler, 1937	junior synonym	26580

### 3.5. Common names for *Barbonymus altus*

Name	Language	Country	Ref.
Kahe	Khmer	Cambodia	036651
Trey kahe	Khmer	Cambodia	012693
Trey kahè	Khmer	Cambodia	036654
Trey kahe khor horm	Khmer	Cambodia	012693
Trey kaho	Khmer	Cambodia	036654
Pa wien fai	Laotian	Lao People's Dem. Rep.	009497
Pba wian fai	Laotian	Lao People's Dem. Rep.	012369
Wien fai	Laotian	Lao People's Dem. Rep.	040382
Red tailed tinfoil	English	Thailand	006459
Pla kra hea tong	Thai	Thailand	042982
Pla mong ka	Thai	Thailand	042982
Pla pak	Thai	Thailand	042982
Pla ta pien tong	Thai	Thailand	009648
Cá he vàng	Vietnamese	Viet Nam	036625

### 3.6 Distribution of *Barbonymus altus*

**MainRef.: 027732**

**Asia** : Mekong and Chao Phraya Basins (Ref. 27732). Recorded from the Maeklong, Peninsular and Southeast Thailand river systems (Ref. 26336).

Latitudinal range : ° - ° Temperature range: 22 - 27 °C Ref.: 2059

Status of threat : NL.

<b>Country</b>	<b>Status</b>	<b>Ref.</b>
<b>Cambodia</b>	<b>native</b>	<b>012693</b>
Occurs in the Mekong Basin (Ref. 12693,27732,26580), around the Tonle Sap River, Great Lake (Ref. 36651), Stung Sang and Sékong at Stung Treng (Ref. 36654).		
<b>Lao People's Dem. Rep.</b>	<b>native</b>	<b>027732</b>
Occurs in the Mekong and the lower Xe Bangfai (Ref. 27732). Found below the Mun-Chin River to the Knone Falls (Ref. 37772) and at Hat Village in Muang Khong District (Ref. 37769). Reported to migrate upstream during the dry season in December/January in Southern Laos (Ref. 37769). Recent decline in fisheries attributed to "lee" (large immobile wing traps used in rapids below Lee Pee). Upstream non-reproductive migration occurs in Jan-Feb lasting 1 week - 10 days and downstream migrations in May-July at night in Ban Hang Khone, just below the great waterfalls of the Mekong River (Ref. 9497). Observed to undergo migration at the fishing village of Ban Wernsonkhram on Don Hat (Hat Island) above the Lee Pee Waterfalls (Ref. 10431). This species is occasionally poisonous, causing vomiting, due to the fruits it has eaten (Ref. 12369). Museum: Mekong, CAS 96270 (near Ban Hang Khone), CAS 93464 (just below Khone falls) (Ref. 5515). Also Ref. 4792, 9497, 30857, 36654, 37767, 44002.		
<b>Thailand</b>	<b>native</b>	<b>026336</b>
Occurs in the Mekong, Chao Phraya (Ref. 27732), Maeklong, Peninsular and Southeast Thailand river systems (Ref. 26336 ). Found in Bangkok, Paknam and Kemarat. Captured from the wild for the ornamental fish trade (Ref. 6459). Museum: Mekong mainstream near Chiang Sen, CAS 96265 (Ref. 5515). Also Ref. 1632, 9648, 36654		
<b>Viet Nam</b>	<b>native</b>	<b>036625</b>
Found in Mekong Delta (Ref. 36625). Cultured in floating cages (Ref. 12693).		

### 3.7. Summary information (no. of records) available for *Barbonymus altus*

**Level : species in general**                      **StockCode: 027732**                      **MainRef.: 027732**

**Asia** : Mekong and Chao Phraya Basins (Ref. 27732). Recorded from the Maeklong, Peninsular and Southeast Thailand river systems (Ref. 26336)

**Level : species in general**

Ecology	1	Max. sizes	0	Strains	0
Food items	4	FAO catches	15502	Diseases	0
Food consumption	0	Genetics	1	Ciguatera	0
Diet composition	0	Allele frequency	20	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	0
Predators	0	Reproduction	0	Gill area	0
Morphology	1	Spawning	1	Swimming type	0
Processing	0	Eggs	0	Swimming speed	0
Growth/mortality	0	Egg dev't.	0	Vision	0
Maturity	0	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	0
L/W relat.	0	Aquaculture	0	Occurrence	20

### 3.8. Morphology of *Barbonymus altus*

Level : species in general      StockCode : 008482      MainRef.: 027732

Appearance refers to :    O females      O males

#### Diagnostic Characters

Broad red distal margin with no black submarginal stripe along each lobe of the caudal fin; red pelvic and anal fins; a black distal blotch on the dorsal fin; the body depth 1.8-2.2 times in standard length (Ref. 27732).

#### Descriptive Characters

Operculum present : No

#### Meristic Characters

Scales on lateral line

#### Dorsal fins

Number of fins : 1 -

### 3.9. Genetic information for *Barbonymus altus*

Level : species in general

Locality : Central Thailand, Thailand

Chromosome number (haploid) : 25

Chromosome number (diploid) : 50

Genetic marker(s) present : No

DNA content (picogram, haploid) :

Chromosome arm no : 84

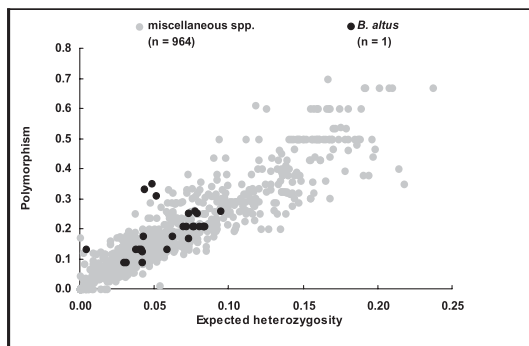
Sex-determining mechanism

MainRef.: 030184

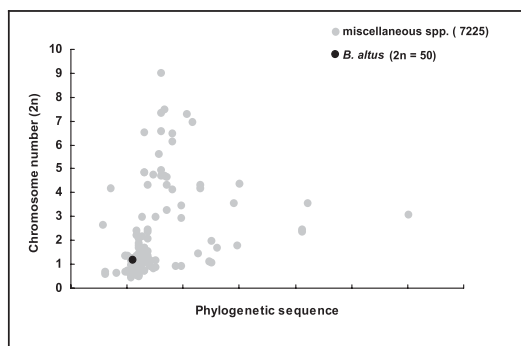
Ref: 030184

Ref: 030184

Polymorphism vs heterozygosity of *Barbonymus altus*



Chromosome number of (2n) *Barbonymus altus*



#### Electrophoretic data for *Barbonymus altus*

Ref.: 005950 Refers to species in general

Locality : Thailand Maeklong River, Bachiralongorn Dam Reservoir

Method : Starch gel electrophoresis

Total loci : 20 Heterozygosity (Observed) : 0.0000

Polymorphic loci : 0.0000 (Expected) : 0.0000

### 3.10. General information on the reproduction of *Barbonymus altus*

Locality : Laos , Mekong Basin at Hat Village, Muang Khong District

Stockcode: 008482

Season (% of mature females; 111 = presence of mature females)

Main Ref.: 037769

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
111 111

Data Ref.: 037769

### 3.11. Ecology of *Barbonymus altus*

Level : species in general

StockCode : 008482 / 008171 / 009497

**Habitats**

Ref.: 009497

Streams : Yes

Lakes : No

Caves : No (exclusively) : No

Estuaries/lagoons/brackish seas : No

Intertidal : No Soft : No

Rocky : No

Mangroves/marshes/swamps : No

Marine : No Oceanic : No

Neritic : No

Coral reefs : No

Tropical Soft bottom : No

Hard bottom : No

Seagrassbeds : No

Macrophyte : No

**Feeding**

Feeding Type : mainly plants/detritus (troph. 2-2.19)

Ref: 009497

Feeding Habit : grazing on aquatic plants

Ref: 009497

From indiv. food items : 2.4 0.18

Trophic level estimate

**Additional remarks**

Effects annual upstream and downstream non-reproductive and reproductive migrations.

### 3.12. Food items for *Barbonymus altus*

Level : species in general

StockCode: 008482

**Food item**

Ref.

**Detritus**

Detritus debris

unidentified

unidentified

012693

**Plants**

other plants benthic algae/weeds

unidentified

unidentified

009497

terrestrial plants

unidentified

unidentified

012369

**Zoobenthos**

other benth. n.a./other benth.

unidentified

unidentified

012693

invertebrates Invertebrates

**Total = 4**

### 3.13. References used for *Barbonymus altus*

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# BARBONYMUS GONIONOTUS

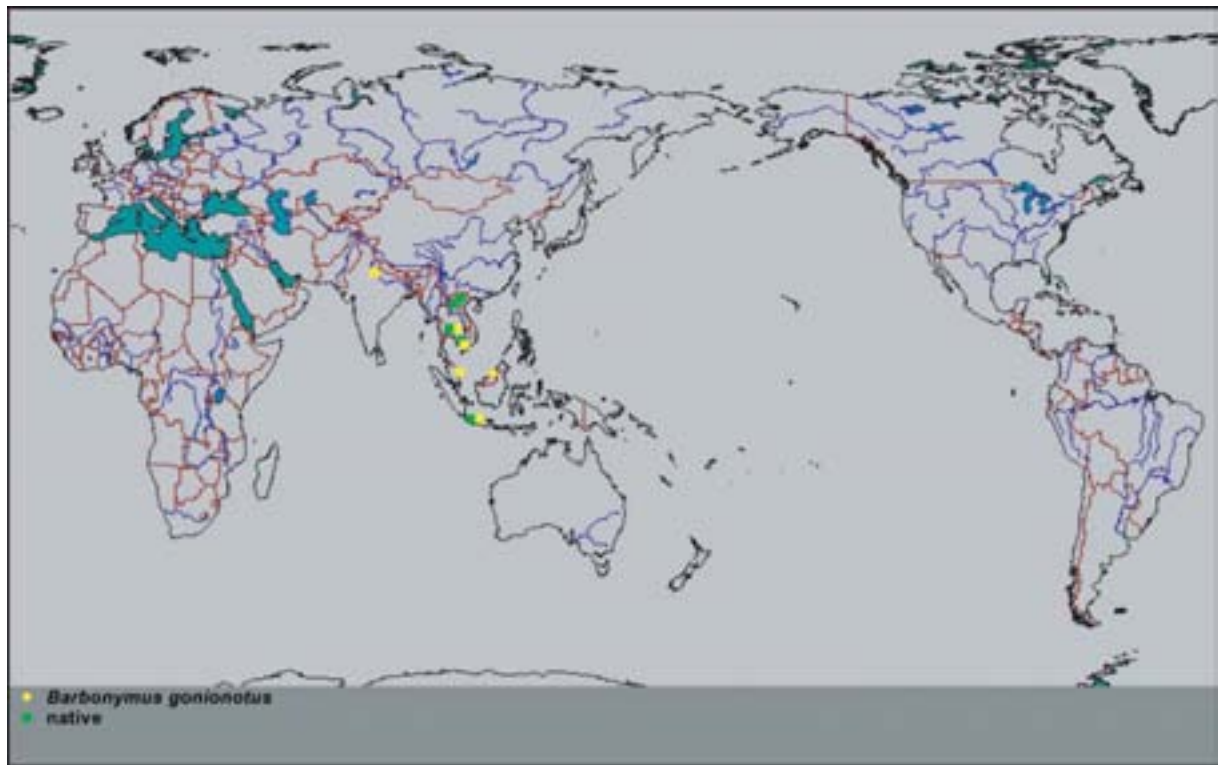
(Bleeker, 1850)

Java barb

ត្រីឆ្កិនប្រាសាទ



Picture by [Warren, T](#)



## 4.1. Summary information on the family Cyprinidae

Family : Cyprinidae (Minnows or carps) MainRef. : 007463  
Order : Cypriniformes  
Class : Actinopterygii (ray-finned fishes) FamCode : 122  
Number of genera : 210  
Number of species : 2010  
Occurs in : O Marine  
                  O Brackish  
                  O Freshwater  
Aquarium fishes : many  
First fossil record : Lower Tertiary Eocene Ref. : 004879  
Species currently in FishBase: Genera: 331 Species: 2408 (Including subspecies) Complete: Yes

### Remarks:

Distribution: North America (Northern Canada to Southern Mexico), Africa, and Eurasia. Pharynx with 1-3 rows of teeth, each row with a maximum of 8 teeth. Usually thin lips, plicae or papillae absent; mouth sometimes suckerlike (*Garra* and *Labeo*). With or without barbels. Premaxilla usually borders the upper jaw making the maxilla entirely or almost entirely excluded from the gape. Usually protrusible upper jaw. Dorsal fin with spinelike rays in some. Primitive number of chromosomes  $2n=50$ , some with 48; polyploidy exists. Maximum length at least 2.5 m to probably 3 m in *Catlocarpio siamensis*; many species less than 5 cm. Mainly non-guarders, but in some species males build nests and/or protect the eggs.  
Etymology: Greek, kyprinos = goldfish. 1828 (Ref. 45335).

## 4.2. Information on the genus *Barbonymus* and its synonyms

After Eschmayer, March 2003 (Ref. 46206)

**Barbonymus** Status : no revision Gender : masculine  
Kottelat, 1999, p. 595, CAS Ref: 24610  
Type by original designation.  
Type species : *Barbus schwanenfeldii* Bleeker, 1853  
Current genus : *Barbonymus*

## 4.3. General information on *Barbonymus gonionotus*

### Classification

Class : Actinopterygii (Ray-finned fishes) MainRef. : 007050  
Order : Cypriniformes  
Family : Cyprinidae (Minnows or carps)  
Subfamily :  
Species : *Barbonymus gonionotus* MainRef. : 0067050  
Author : (Bleeker, 1850)

### Environment

Freshwater : Yes Habitat : Benthopelagic  
Brackish : No Migrations : Potamodromous  
Saltwater : No Depth range : 15

### Importance

Landing statistics	: From 1,000 to 10,000 tonnes	Ref. : 004931
Importance to fisheries	: Commercial	
Main catching method		
Other methods	: <input checked="" type="checkbox"/> Seines <input type="checkbox"/> Gillnets <input checked="" type="checkbox"/> Castnets <input type="checkbox"/> Traps <input type="checkbox"/> Spears	
	: <input type="checkbox"/> Trawls <input type="checkbox"/> Dredges <input type="checkbox"/> Liftnets <input checked="" type="checkbox"/> Hooks+Lines <input type="checkbox"/> Other	
Used for aquaculture	Commercial	Ref. : 012108
Used as bait	Never/rarely	Ref.
Aquarium fish	Commercial based mainly on breeding	Ref. : 006299
Game fish	No	Ref.
Dangerous fish	Harmless	Ref.
Electrobiology	No special ability	Ref.

### Size and age

Maximum length (cm) (male/unsexed) : 40.5 TL (female) : Ref. : 008609

### Remarks:

Occurs at midwater to bottom depths in rivers, streams, floodplains, and occasionally in reservoirs. Seems to prefer standing water habitats instead of flowing waters. Inhabits the flooded forest during high water period (Ref. 12693). Feeds on plant matter (e.g. leaves, weeds, Ipomea reptans and Hydrilla ) and invertebrates (Ref. 4835). A migratory species but not considered to be a long-distance migrant. Regarded as local migrant which moves from the Mekong up into small streams and canals and onto flooded areas during the rainy season and back again during receding water (Ref. 37770). Some reports indicated that upstream migration of this fish is triggered by the first rains and rising water levels. When it finds a tributary, canal or stream it moves upstream and eventually onto flooded areas. When water recedes, it migrates back into canals and streams and into the Mekong again (Ref. 37770). Often used as a pituitary donor for artificial propagation in aquaculture. Escapees from culture installations have become established in rivers and form the basis for capture fisheries on several Southeast Asian islands (Ref. 1739). Useful in cropping excessive vegetation in reservoirs (Ref. 2686). Used for lap pa (in the preparation of which the numerous small bones are ground fine) or grilled or used to make sompa. Usually marketed fresh and occasionally seen in the aquarium trade (Ref. 12693). A specimen measuring 45 cm TL (2,100 g) was reportedly caught from Dan Tchang Reservoir, Thailand on 8 July 2003 (Jean-Francois Helias, pers. comm., FISHING ADVENTURES THAILAND [mailto:fishasia@ksc.th.com] ).

## 4.4. Synonym names for *Barbonymus gonionotus*

Synonym	Author	Status	Ref.
<i>Puntius gonionotus</i>	Bleeker, 1850	new combination	012693
<i>Barbus gonionotus</i>	Bleeker, 1850	original combination	006128
<i>Barbonymus gonionotus</i>	Bleeker, 1850	new combination	043281
<i>Barbodes gonionotus</i>	Bleeker, 1850	new combination	007050
<i>Puntius javanicus</i>	Bleeker, 1855	junior synonym	002686
<i>Barbus javanicus</i>	Bleeker, 1855	junior synonym	013274
<i>Barbus koilometopon</i>	Bleeker, 1857	junior synonym	006128
<i>Puntius viehoefferi</i>	Fowler, 1943	junior synonym	012693

#### 4.5. Common names for *Barbonymus gonionotus*

Name	Language	Country	Ref.
Chhpin	Khmer	Cambodia	036651
Trey chhpin	Khmer	Cambodia	012693
Trey chhpin brak	Khmer	Cambodia	012693
Bader putihan, Bader	Javanese	Indonesia	006107
Keputihan, Putihah	Javanese	Indonesia	006107
Tawes	Malay	Indonesia	008609
Papak	Laotian	Lao People's Dem. Rep.	004792
Pak	Laotian	Lao People's Dem. Rep.	040381
Javanese barb	English	Malaysia	005460
Javanese carp	English	Malaysia	006095
Lalawak	Malay	Malaysia	002686
Lampam jawa	Malay	Malaysia	004789
Lawak	Malay	Malaysia	002686
Silver barb	English	Philippines	012157
Tawes	Tagalog	Philippines	002858
Puntius carp	English	Thailand	006459
Pla ta pien	Thai	Thailand	042982
Pla ta pien khao	Thai	Thailand	042982
Pla ta pien khaw	Thai	Thailand	002686
Pla ta pien sai	Thai	Thailand	042982
Pla tek kheng	Thai	Thailand	042982
Tawes	English	United Kingdom	012693
Thai silver barb	English	United Kingdom	003691
Thai silver carp	English	United Kingdom	006072
Cá mè vinh	Vietnamese	Viet Nam	036625
Cá trà vinh	Vietnamese	Viet Nam	002686

#### 4.6. Distribution of *Barbonymus gonionotus*

**Asia** : Mekong and Chao Phraya basins, Malay Peninsula, Sumatra and Java (Ref. MainRef.: 027732, 27732). Occurs throughout the whole stretch on the Mekong, from the Delta around the saline intrusion zone to Chiang Khong in Thailand (Ref. 37770).

Latitudinal range: 24° N - 8° S

Status of threat: NL.

Country	Status	Ref.
<b>Bangladesh</b>	introduced	001479
	Also Ref. 6794,42329.	
<b>Cambodia</b>	native	012693
	Occurs in the Mekong Basin (Ref. 12693,27732). Found around the Tonle Sap River and Great Lake (Ref. 36651). Not commonly taken in the dai nets of the Tonlé Sap, but much more likely to be caught in the large traps of the Great Lake (Ref. 12693). Also Ref. 1739, 7306, 8984, 36662, 33813, 37772.	
<b>China</b>	introduced	001739
<b>Fiji Islands</b>	introduced	012743
	Established in the Rewa River and its tributaries. Also Ref. 1739, 6366, 13364.	
<b>India</b>	introduced	001739

- Indonesia** native 027732  
Found in Sumatra and Java (Ref. 6128). Also Ref. 12157.
- Lao People's Dem. Rep.** native 027732  
Occurs in the Mekong and the lower Xe Bangfai (Ref. 27732). Known from above Pak Beng to the Khone Falls (Ref. 37772). Museum: Mekong at Ban Hang Khone, just below Khone Falls, CAS 96254 (Ref. 5515). Also Ref. 4792, 30857, 37768, 43281.
- Malaysia** introduced 001739  
Present in Sungai Trengganu, Sungai Perak (Ref. 4835).
- Philippines** introduced 001739  
Well established in rivers and lakes, where it reproduces naturally (Ref. 13686). Also Ref. 12157.
- Thailand** native 026336  
Known from the Maeklong, Chao Phraya, Mekong, Peninsular and Southeast Thailand river systems (Ref. 26336). Also Ref. 6459, 9648, 1632, 7306.
- Viet Nam** native 036625  
Found in Mekong Delta (Ref. 36625). Also Ref. 1739.

#### 4.7. Introductions of *Barbonymus gonionotus*

##### Level : species in general

**Asia** : Mekong and Chao Phraya Basins, Malay Peninsula, Sumatra and Java (Ref. 27732). Occurs throughout the whole stretch on the Mekong, from the Delta around the saline intrusion zone to Chiang Khong in Thailand (Ref. 37770).

Year : 1977 Established : yes Ref.: 001479  
Introduced : to Bangladesh from Thailand  
Reason : aquaculture

**Comments** : Reintroduced from Thailand in 1986 (Ref. 44085). Experimentally cultured at the Freshwater Aquaculture Research Station in Mymensingh and at the Fish Hatchery and Training Centre in Raipur. Cultured and became established.

Year : 1968 Established : no Ref.: 001739  
Introduced : to Sri Lanka from Java, Indonesia  
Reason : aquaculture

**Comments** : Not established Also Ref. 13364.

Year : 1986 Established : yes Ref.: 001739  
Introduced : to China Main from Thailand  
Reason : aquaculture

**Comments** : Cultured experimentally in ponds and ricefields in Guangdong Province. A successful transfer which now forms the basis for a commercial fishery (Ref. 6072). Also Ref. 13364.

Year : 1968 Established : yes Ref.: 001739  
Introduced : to Fiji from Malaysia  
Reason : aquaculture

**Comments** : Reintroduced in 1984. Well established in the Rewa River basin and its tributaries where it is becoming an important food fish. Introduced also as a source of pituitary extracts for the grass carp. Also Ref. 13364.

Year : 1972 Established : yes Ref.: 006092  
 Introduced : Indonesia to India  
 Reason : aquaculture  
**Comments** : Present to a limited extent in West Bengal. The species is not popular with Indian aquaculturists (Ref. 13364).

Year : 1963 Established : unknown Ref.: 001739  
 Introduced : to Indonesia from Unknown  
 Reason : aquaculture  
**Comments** : Assumed to be introduced for aquaculture.

Year : 1958 Established : yes Ref.: 001739  
 Introduced : to Malaysia from Indonesia  
 Reason : aquaculture  
**Comments** : Poly cultured in ponds. Breeds also in rivers, lakes and in tin mining pools. Widely cultured throughout the country.

Year : 1970 Established : no Ref.: 001739  
 Introduced : to Papua New Guinea from Malaysia  
 Reason : aquaculture  
 Comments : Reported as established in 1976 (Ref. 6993). A total of 27,750 fingerlings were stocked from 1994-1995 in Emma Creek, Usino Stream, Ramu, Bunam, Bunapas, Brahman, Aiyura and the Ganz and Guny Rivers (Ref. 37808). Also Ref. 6349 and 13364.

Year : 1956 Established : yes Ref.: 006096  
 Introduced : to Philippines from Indonesia  
 Reason : aquaculture  
**Comments** : Introduced as a pituitary donor (Ref. 13364). Well established in rivers and lakes, where it reproduces naturally

Year : unknown Established : probably no Ref. 038466  
 Introduced : to Singapore from Unknown  
 Reason : aquaculture  
 Comments :  
 Total = 10 Established: yes = 6 probably yes = 0

#### 4.8. Summary information available for *Barbonymus gonionotus*

Level : species in general

tockCode : 027732

MainRef.: 027732

Ecology	1	Max. sizes	0	Strains	0
Food items	40	FAO catches	15502	Diseases	1
Food consumption	0	Genetics	4	Ciguatera	0
Diet composition	1	Allele frequency	0	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	0
Predators	0	Reproduction	1	Gill area	0
Morphology	1	Spawning	1	Swimming type	0
Processing	1	Eggs	0	Swimming speed	0
Growth/mortality	0	Egg dev't.	0	Vision	0
Maturity	0	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	10
L/W relat.	1	Aquaculture	0	Occurrence	46



**Diagnostic Characters**

Body is strongly compressed. The back is elevated, its dorsal profile arched, often concave above the occiput. The head is small; the snout pointed; the mouth terminal. The barbels are very minute or rudimentary, especially the upper ones, which sometimes disappear entirely. Color when fresh is silvery white, sometimes with a golden tint. The dorsal and caudal fins are gray to gray-yellow; the anal and pelvic fins light orange, their tips reddish; the pectoral fins pale to light yellow (Ref. 4792). Very few tubercles on the snout which are not visible without magnification; snout length much less than the width of the eye socket (Ref. 37768). Anal-fin with 6-7 branches rays (Ref. 12693).

**Descriptive Characters**

Striking features	: none	Cross section	: oval
Body shape lateral	: fusiform / normal	Dorsal head profile	: more or less straight
Operculum present	: yes		
Type of eyes	: more or less normal		
Position/type of mouth	: terminal		

**Pigmentation on trunk and tail**

Horizontal stripes	: absent		
Vertical stripes	: absent		
Diagonal stripes	: absent		
Curved stripes	: absent		
Spots	: no spots		
Dorsal fin (D1)	: no spots or stripes	: no colored margin	
Caudal fin	: no spots or stripes	: no colored margin	
Anal fin (A1)	: no spots or stripes	: no colored margin	

**4.9. Morphology of *Barbonymus gonionotus*****Meristic Characters**

Scales on lateral line	: 26-31
Scale rows below lateral line	: 5.5
Barbels	: 4

**Dorsal fins**

Dorsal attributes	: no striking attributes	spines total	: 4-4	soft-rays total	: 8-8
Number of fins	: 1	finlets dorsal	: 0-0	finlets ventral	: 0-0
Adipose fin	: absent				

**Caudal fin**

Shape of fin	: forked
Attributes	: more or less normal

**Anal fin**

Number of fins	: 1	spines total	: 4-4	soft rays total	: 6-7
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**Paired fins**

Pectoral attributes	: more or less normal		
Spines	: 1	soft rays	: 14-15
Pelvic attributes	: more or less normal		
Position	: adominal	before origin of D1	
Spines	: 1	soft rays	: 8-8

**Body proportions** : (based on picture)

Head length (% SL)	: 24.7
Maximum depth (% SL)	: 41.7

## 4.10. Genetic information for *Barbonymus gonionotus*

Locality : Unspecified

Main Ref.: 027780

Genetic marker(s) present

**Remarks** : Several subpopulations (Kedah, Perak and Selangor) of the species in Malaysia show a high level of band sharing and low variability using DNA fingerprinting (Ref. 27780).

Locality : Central Thailand, Thailand

Main Ref.: 030184

Chromosome number (haploid) : 25

Ref.: 030168

Chromosome number (diploid) : 50

Ref.: 030168

Genetic marker(s) present : No

Chromosome arm no. : 70

Ref.: 030168

Locality : Central Thailand, Thailand

Main Ref.: 030184

Chromosome number (haploid) : 25

Ref.: 030184

Chromosome number (diploid) : 50

Ref.: 030184

Genetic marker(s) present : No

Chromosome arm no. : 70

Ref.: 030184

Locality : Central Thailand, Thailand

Main Ref.: 034370

Chromosome number (haploid) : 25

Chromosome number (diploid) : 50

Ref.: 034741

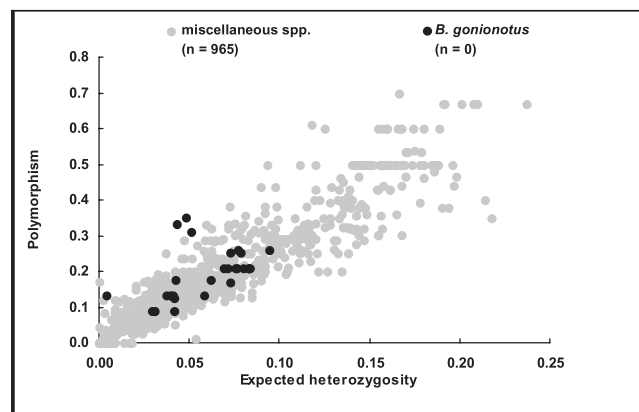
Genetic marker(s) present : No

Chromosome arm no. : 70

Ref.: 034741

**Remarks** : Also in Ref. 034370. Listed as *Puntius gonionotus*.

Polymorphism vs heterozygosity of *Barbonymus gonionotus*



## 4.11. Weight proportions and technical composition of *Barbonymus gonionotus*

Level : species in general

Stockcode: 000300

Locality : Not specified

MainRef.: 002686

**Comment** : Flesh of good quality, but has a lot of small bones. Often used in Laos for lap pa, a preparation in which the small bones are finely ground and cease to be a nuisance. The fish may be grilled or used to make sompa.

#### 4.12. FAO aquaculture production data for *Barbonymus gonionotus*

Country		1984	1985	1986	1987	1988	1989	1990
		1991	1992	1993	1994	1995	1996	1997
		1998	1999	2000	2001			
Cambodia	(t)	620	1,150	150	150	1,150	2,123	1,150
	(US\$'000)	744	1,610	1,610	1,610	3,540	1,610	5,390
	(t)	2,570	3,280	2,830	2,930	3,370	3,455	4,424
	(US\$'000)	5,911	7,216	6,509	6,739	7,414	7,601	9,290
	(t)	4,845	5,500	5,390	5,790			
	(US\$'000)	9,690	10,450	10,241	11,001			
Indonesia	(t)	20,355	23,120	22,877	23,120	23,120	23,120	28,048
	(US\$'000)	24,426	27,744	32,028	27,744	41,600	52,500	70,120
	(t)	19,867	21,113	21,989	23,388	27,591	33,186	23,913
	(US\$'000)	51,654	54,894	57,171	60,809	71,737	86,284	62,174
	(t)	23,124	28,806	31,886	26,119			
	(US\$'000)	60,122	73,455	79,715	65,298			
Indonesia	(t)	0	0	0	0	0	0	0
	(US\$'000)	0	0	0	0	0	0	0
	(t)	0	32	0	0	2	2	0
	(US\$'000)	0	83	0	0	5	5	0
	(t)	0	0	81	132			
	(US\$'000)	0	0	203	330			
Malaysia	(t)	756	1,260	970	747	1,260	1,754	1,260
	(US\$'000)	1,068	1,421	1,421	1,421	2,702	1,421	2,290
	(t)	2,063	2,505	1,481	1,465	1,428	1,609	2,087
	(US\$'000)	2,858	5,185	3,165	2,877	2,995	3,300	3,883
	(t)	1,807	1,788	1,673	1,013			
	(US\$'000)	2,379	2,348	2,104	1,352			
Thailand	(t)	4,915	7,311	8,791	11,145	12,973	13,370	14,695
	(US\$'000)	4,185	5,144	6,206	8,038	9,530	9,661	10,347
	(t)	16,275	23,839	21,939	24,133	27,432	37,615	35,100
	(US\$'000)	12,119	19,794	19,860	21,995	26,140	32,832	30,154
	(t)	38,951	41,289	46,276	46,760			
	(US\$'000)	26,303	32,197	40,504	42,084			
	(mt)	26,646	32,841	33,488	32,934	37,473	38,247	46,983
Total	(US\$'000)	30,423	35,919	40,967	43,016	57,372	69,252	88,147
	(mt)	40,775	50,769	48,239	51,916	59,823	75,867	65,524
	(US\$'000)	72,543	87,172	86,706	92,420	108,291	130,022	105,502
	(mt)	68,727	77,383	85,306	79,814			
	(US\$'000)	98,494	118,451	132,768	120,064			

#### 4.13. General information on the reproduction of *Barbonymus gonionotus*

Level : species in general

StockCode : 000300

Mode and Type of Reproduction

Mode : dioecism

Fertilization : external

Spawning frequency

Batch spawner : no

Reproductive guild : nonguarders open water/substratum egg scatterers

Assuming same reproductive mode as *B. schwanenfeldii* (RF).

### Spawning Information for *Barbonymus gonionotus*

Locality : Mekong Mainstream

Stockcode: 000300

Season (% of mature females; 111= presence of mature females) : Main Ref.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Data Ref.:

111 111 111 111

**Comment** : Based on the presence of developed eggs during the period March to June, although some report that eggs can be found throughout the year. An opportunistic spawner.

### 4.14. Ecology of *Barbonymus gonionotus*

Level : species in general

StockCode: 000300 000286

Main Ref.: 013497

#### Habitats

Streams : No Lake: Yes Cave: No

Estuaries/lagoons/brackish seas: No

Intertidal : No Soft : No Rocky : No Mangroves/marches/swamps: No

Marine : No Oceanic : No Neritic : No Coral reefs: No

Tropical soft bottom : No Hard bottm : No Seagrass beds: No Macrophyte: No

#### Feeding

Feeding Type : plants/detritus+animals (troph. 2.2-2.79)

Ref: 012497

Feeding Habit : grazing on aquatic plants

#### Additional remarks

Feeds on plants, insects and detritus (Ref. 13497)

### 4.15. Food items for *Barbonymus gonionotus*

Level : species in general

StockCode: 000300

#### Food item

				Ref.
others	n.a./others	Bacteria	Leuconostoc	042329
		Diffugiidae	Diffugia	042329

#### plants

other plants	benthic algae/weeds	Hydrocharitaceae	Hydrilla	004835
	terrestrial plants	Convolvulaceae	Ipomoea reptans	004835
phytoplankton	blue-green algae	Chroococcaceae	Chroococcus	042329
		Cyanophyceae	Microcystis	027822
		Oscillatoriaceae	Oscillatoria	042329
		Phormidiaceae	Spirulina	042329
	diatoms	Eunotiaceae	Actinella	042329
		Naviculaceae	Navicula	042329
	dinoflagellates	Euglenaceae	Trachelomonas	042329
		Euglenaceae	Euglena	042329
		Euglenaceae	Phacus	042329
	green algae	Centrtractaceae	Pseudotetraedron	042329
		Chlorophyceae	Sphaerocystis	027822
		Chlorophyceae	Closterium	027822
		Chlorophyceae	Oedegonium	027822
		Chlorophyceae	Pediastrum	027822
		Chlorophyceae	Pleurotaenium	027822
		Chlorophyceae	Spirogyra	027822
		Chlorophyceae	Scenedesmus	027822
		Mesotaeniaceae	Mesotaenium	042329
		Micractiniaceae	Echinosphaerella	042329
		Oocystaceae	Ankistrodesmus	042329

		Oocystaceae	Quadrigula	042329
		Ophiocytaceae	Ophiocytium	042329
		Ulotrichaceae	Ulothrix	042329
<b>zoobenthos</b>				
benth. crust.	ostracods	Cypridae	Cypris	027822
insects	insects	Trichoceridae	Trichocerca	042329
<b>zooplankton</b>				
other plank.	n.a./other plank.	Lecanidae	Monostyla	027822
invertebrates	invertebrates			
		Rotifera	Moina	027822
plank. crust.	plank. copepods	Calanoida	Diaptomus	027822
		Crustacea	Daphnia	042329
		Crustacea	Diaphanosoma	042329
		Crustacea	Nauplius	042329
		Cyclopoida	Cyclops	027822
plank. crust	Notommatidae Rotifer	Rotifers Rotifers	Cephalodella	042329
			Lecane	042329
			Brachionus	042329
			Keratella	042329

#### 4.16. Length-Weight relationships of *Barbonymus gonionotus*

(  $W = a * L^b$  with Length in cm and Weight in g )

Locality	: Indonesia, Jatiluhur Reservoir, West Java	StockCode: 000300
Length range	: 14.5 - TL15 0	Sample size: 150
a	: 0.0413	Correlation coefficient: 0.995
b	: 2.231	Ref. : 008609
		Sex: unsexed

#### 4.17. Diseases reported for *Barbonymus gonionotus*

**StockCode : 000300**

**Main Ref.: 042533**

Parasitic infestations (protozoa, worms, etc.): Sporozoa-infection (*Myxobolus sp.*) Ref. : 041805

Causative agent : *Myxobolus sp.*

Occurrence : Rajshani, Bangladesh, 1993

Remarks : Infestation commonly occurs in the gills and skin.

**Total = 1**

#### 4.18. FAO annual catch data (in tonnes) for *Barbonymus gonionotus*

##### Country

1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
2000	2001								

##### Indonesia

8,451	8,445	9,530	11,205	10,370	11,823	13,663	14,790	11,703	16,199
15,578	17,439	18,079	16,397	17,891	17,059	20,998	21,708	17,784	16,924
15,525	15,084	14,996	10,105	12,767	8,652	12,598	12,346	12,346	16,550
19,431	22,826	21,882	17,941	17,677	20,836	21,647	18,747	22,633	19,203
15,380	14,964	16,082	15,027	19,084	18,102	19,601	19,469	20,189	17,939
17,124	17,080								

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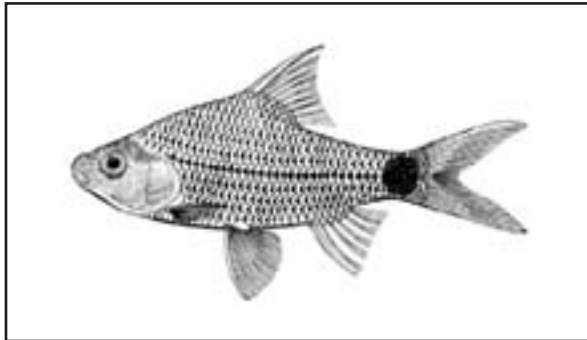
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# CYCLOCHEILICHTHYS APOGON

(Valenciennes, 1842)

Beardless barb

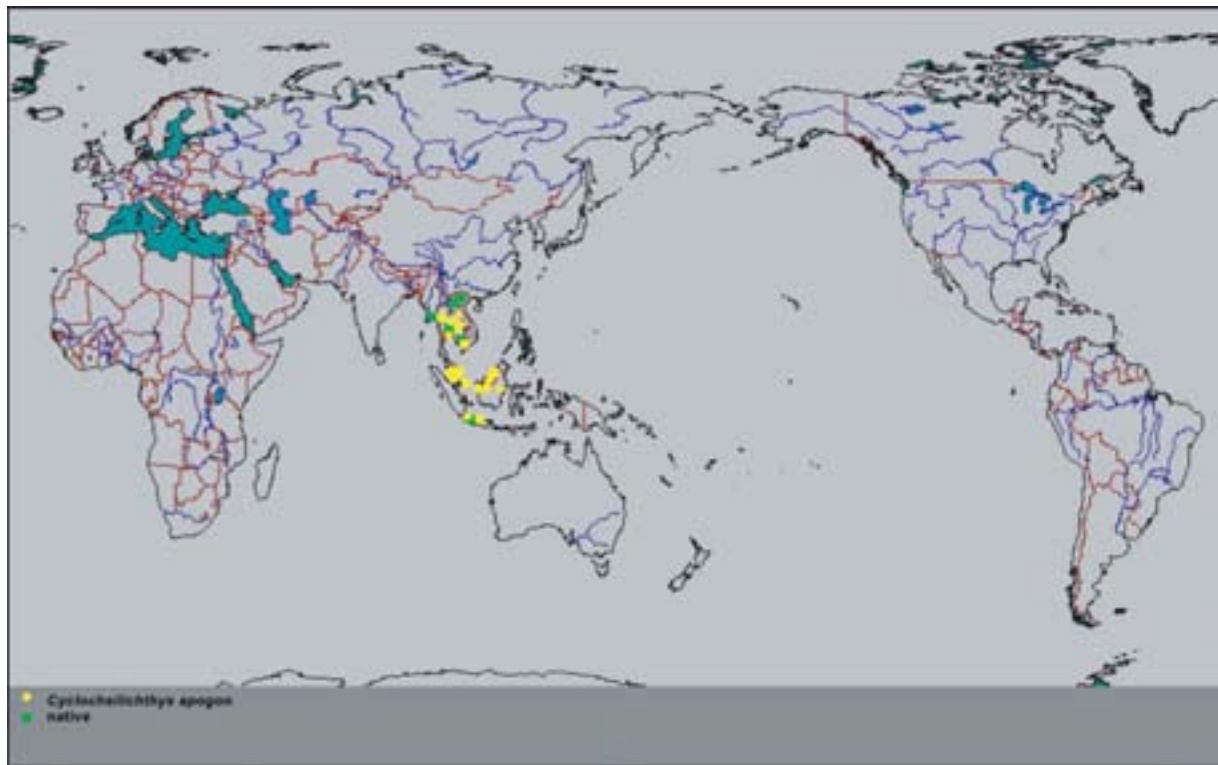
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Picture by **FAO**



Picture by **Roberts T**



## 5.1. Summary information on the family Cyprinidae

Family	: Cyprinidae (Minnows or carps)	
Order	: Cypriniformes	MainRef. : 007463
Class	: Actinopterygii (ray-finned fishes)	FamCode : 122
Number of genera	: 210	
Number of species	: 2010	
Occurs in	: O Marine O Brackish ☑ Freshwater	
Aquarium fishes	: many	
First fossil record	: Lower Tertiary Eocene	Ref. : 004879
Species currently in FishBase	: Genera: 331 Species: 2408 (Including subspecies)	Complete: Yes

### Remarks:

Distribution: North America (Northern Canada to Southern Mexico), Africa, and Eurasia. Pharynx with 1-3 rows of teeth, each row with a maximum of 8 teeth. Usually thin lips, plicae or papillae absent; mouth sometimes suckerlike (Garra and Labeo). With or without barbels. Premaxilla usually borders the upper jaw making the maxilla entirely or almost entirely excluded from the gape. Usually protrusible upper jaw. Dorsal fin with spinelike rays in some. Primitive number of chromosomes  $2n=50$ , some with 48; polyploidy exists. Maximum length at least 2.5 m to probably 3 m in *Catlocarpio siamensis*; many species less than 5 cm. Mainly non-guarders, but in some species males build nests and/or protect the eggs.  
Etymology: Greek, kyprinos = goldfish. 1828 (Ref. 45335).

## 5.2. Information on the genus Cyclocheilichthys and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

<b>Anematchthys</b>	Status: synonym	Gender: masculine
Bleeker, 1859, p. 371, CAS Ref: 371		
Type by monotypy		
Type species : <i>Barbus apogon</i>		Valenciennes, 1842
Current genus : <i>Cyclocheilichthys</i>		
<b>Cyclocheilichthys</b>	Status: valid	Gender: masculine
Bleeker, 1859, p. 371, CAS Ref: 16984		
Type by monotypy.		
Type species : <i>Systomus apogon</i>		Valenciennes, 1842
Current genus : <i>Cyclocheilichthys</i>		
<b>Cyclocheilos</b>	Status: synonym	Gender: masculine
Bleeker, 1859, p. 386, CAS Ref: 24622		
Type by monotypy.		
Type species : <i>Barbus macracanthus</i>		Bleeker, 1853
Current genus : <i>Cyclocheilichthys</i>		
<b>Oxybarbus</b>	Status: synonym	Gender: masculine
Vaillant, 1893, p. 57, CAS Ref: 4485		
Type by monotypy.		
Type species : <i>Barbus heteronema</i>		Bleeker, 1853
Current genus : <i>Cyclocheilichthys</i>		
<b>Siaja</b>	Status: synonym	Gender: feminine
Bleeker, 1859, p. 149, CAS Ref: 371		
Type by absolute tautonymy.		
Type species : <i>Cyclocheilichthys</i> ( <i>Siaja</i> ) <i>siaja</i>		Bleeker, 1851
Current genus : <i>Cyclocheilichthys</i>		

### 5.3. General information on *Cyclocheilichthys apogon*

#### Classification

Class	: Actinopterygii (Ray-finned fishes)	MainRef.	012693
Order	: Cypriniformes		
Family	: Cyprinidae (Minnows or carps)		
Species	: <i>Cyclocheilichthys apogon</i>		
Author	: (Valenciennes, 1842) Author Ref. (ex Kuhl) In Cuvier & Valenciennes.		

#### Environment

Freshwater	: Yes	Habitat	: Benthopelagic
Brackish	: No	Migrations	:
Saltwater	: No	Depth range	:

#### Importance

Landing statistics :		Ref.	004832
Importance to fisheries	: Commercial		
Main catching method	:		
Other methods :	<input checked="" type="checkbox"/> Seines	<input type="checkbox"/> Gillnets	<input checked="" type="checkbox"/> Castnets
	<input type="checkbox"/> Trawls	<input type="checkbox"/> Dredges	<input type="checkbox"/> Liftnets
Used for aquaculture	: Never/rarely	<input checked="" type="checkbox"/> Traps	<input type="checkbox"/> Spears
Used as bait	: Never/rarely	<input type="checkbox"/> Hooks+Lines	<input checked="" type="checkbox"/> Other
Aquarium fish	: Commercial based mainly on capture	Ref.	004537
Game fish	: No		
Dangerous fish	: Harmless		
Electrobiology	: No special ability		

#### Size and age

Maximum length (cm) (male/unsexed)	: 25 TL	(female) :	Ref. 030857
Common length (cm) (male/unsexed)	:	(female) :	
Maximum weight (g) (male/unsexed)	:	(female) :	

#### Remarks:

Inhabits small streams, reservoirs, lakes (Ref. 4832), canals, ditches, and generally areas with slow-moving or standing water (Ref. 12693). Occurs in medium to large-sized rivers (Ref. 12975). Typically found around surfaces, such as plant, leaves, branches and tree roots, where it browses for small plankton and crustaceans. Moves into flooded forests and non-forested floodplains. Reported to breed late during high-water season from September to October as water levels peak and begin to decline (Ref. 12693). Found in the basin-wide tributary of the Lower Mekong (Ref. 36667).

### 5.4. Synonyms, misidentifications, etc. used for *Cyclocheilichthys apogon*

Synonym	Author	Status	Ref.
<i>Systemus apogon</i>	Valenciennes, 1842	new combination	002091
<i>Cyclocheilichthys apogon</i>	Valenciennes, 1842	new combination	012693
<i>Barbus apogon</i>	Valenciennes, 1842	original combination	004832
<i>Systemus apogonoides</i>	Bleeker, 1855	junior synonym	002091
<i>Rohteichthys macrolepis</i>	Holly, 1927	junior synonym	013275
<i>Systemus macularius</i>	Blyth, 1860	junior synonym	004832
<i>Cyclocheilichthys rubripinnis</i>	Fowler, 1934	junior synonym	002091



## 5.5. Common names for *Cyclocheilichthys apogon*

Name	Language	Country	Ref.
Sraka kdam	Khmer	Cambodia	036651
Trey kros	Khmer	Cambodia	012693
Trey sraka kdam	Khmer	Cambodia	036654
Trey srakardam	Khmer	Cambodia	041486
Trey srawka kdam	Khmer	Cambodia	012693
Seren	Javanese	Indonesia	006107
Redang	Malay	Indonesia	006107
Pa dok ngieu	Laotian	Lao People's Dem. Rep.	037767
Pla ngam lung	Thai	Thailand	009648
Pla nham lung	Thai	Thailand	042982
Pla sai tan	Thai	Thailand	009648
Pla ta deng	Thai	Thailand	009648
Pla ta pien sai	Thai	Thailand	042982
Pla taa dang	Thai	Thailand	042982
Playa	Thai	Thailand	042982
Beardless barb	English	United Kingdom	012693
Beardless barb	English	USA (contiguous states)	004537
Indian river barb	English	USA (contiguous states)	004537
Redeye barb	English	USA (contiguous states)	004537
Cá ba ky do	Vietnamese	Viet Nam	036625

Total = 27

## 5.6. Distribution of *Cyclocheilichthys apogon*

Asia : Myanmar to Indonesia.

Latitudinal range: 30° N - 10° S

Status of threat : NL.

Temperature range: 24 - 26 °C

MainRef.: 004832

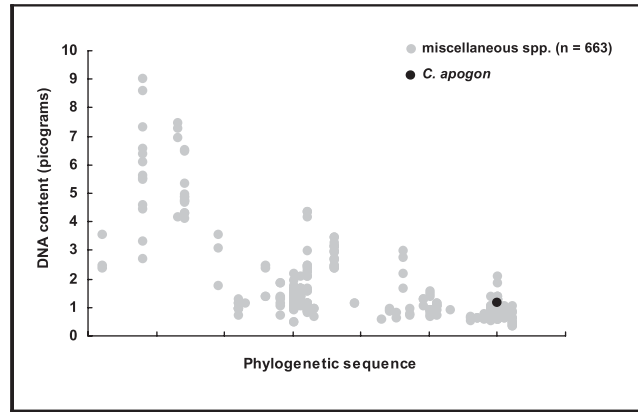
Ref.: 1672

Country	Status	Ref.
<b>Cambodia</b>	native	012693
Sometimes sold fresh along the Tonlé Sap and used to make prahoc (Ref. 12693). Known from Beng Kebal Damrey, Stung Treng (Ref. 36654) and Sangke River, Battambang province (Ref. 41486). Also Ref. 36651, 36662.		
<b>Indonesia</b>	native	007050
Found in Sumatra, Lake Tundai, South Borneo (Ref. 42107), and Java. Museum: MZB 3063-66, 3068-3070; CAS 49194-95; USNM 230162-63. Also Ref. 2091, 43281.		
<b>Lao People's Dem. Rep.</b>	native	043281
Found in the Mekong River (Ref. 30857) at Ban Hang Khone in Khong District, Champasak Province (Ref. 37767). Also Ref. 7050.		
<b>Malaysia</b>	native	002091
<b>Myanmar</b>	native	004832
Also Ref. 12693, 36654, 43281.		
<b>Thailand</b>	native	026336
Occurs in the Maeklong, Chao Phraya, Mekong, Peninsular and Southeast Thailand river systems (Ref. 26336). Widely distributed and an important element in the food supply of the people living along the large rivers (Ref. 4832). Also Ref. 9648, 26580, 36654, 43281.		
<b>Viet Nam</b>	native	036625
Found in Mekong Delta (Ref. 36625). Also Ref. 7050, 36654.		





DNA content vs. phylogenetic sequence of *Cyclocheilichthys apogon*



## 5.10. Ecology of *Cyclocheilichthys apogon*

Level : species in general

StockCode : 010636 010313

Main Ref.: 013497

### Habitats

Ref.: 013497

Streams : Yes Lakes : Yes Caves : No  
 Estuaries/lagoons/brackish seas : No  
 Intertidal : No Soft : No Rocky : No Mangroves/marshes/swamps : No  
 Marine : No Oceanic : No neritic : No coral reefs : No  
 Tropical soft bottom : No Hard bottom: No Seagrassbeds : No Macrophyte : No

### Feeding

Feeding Type : plants/detritus+animals (troph. 2.2-2.79)

Ref.: 013497

### Trophic level(s) :

	Original sample		Unfished population		Remarks
Estimation method	Troph	s.e.	Troph	s.e.	
From diet composition	: 2.8	0.34	2.9	0.28	Troph of juv./adults. Ref.: 013497
From indiv. food items	: 3.1	0.30	m	m	Tentative trophic level

### Additional remarks

Feeds mainly on insects (Ref. 13497).

## 5.11. Food items for *Cyclocheilichthys apogon*

Level : species in general

StockCode: 010636

### Food item

#### zooplankton

plank. crust.	n.a./other plank, crustaceans	unidentified	Ref.: 012693
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## 5.12. Diet composition of *Cyclocheilichthys apogon*

Level : species in general

StockCode : 010636

MainRef. : 013497

Locality : Bukit Merah Reservoir, between September 1979 and August 1980

Stage of fish sampled : juv./adults Number : 35

### Months covered by the study

Jan.  Feb.  Mar.  April  May  June  July  Aug.  Sep.  Oct.  Nov.  Dec.

**Food group (%)**

63.0	insects, mainly Chironomidae, some Chaoboridae, Dysticidae, unid. larvae & nymphs, larvae
18.0	debris, n.a./others
10.0	insects, both aquatic and terrestrial forms of Diptera, Odonata, etc., adults
5.0	benthic algae/weeds, n.a./others
2.0	terrestrial plants, n.a./others
2.0	n.a./other plank. Crustaceans, Copepoda, Cladocera, Decapoda, juv./adults
<b>100.0</b>	<b>Total</b>

**Maximum weight/length/age of *Cyclocheilichthys apogon*****Locality : Malaysia, Kejin River, Sarawak, 1980****StockCode : 010636**

Max weight (g) : 18 total weight

Ref. : 038745

Max length (cm) : 8.1 SL Same specimen for WL : Yes

Sex : unsexed

**Total = 1****5.13. Growth and mortality of *Cyclocheilichthys apogon***

Country	L (cm)	W	(g)	Kt (/year)	t o (y)	Sex	Ref.
Malaysia	12.2	SL	0.367			unsexed	038745
Thailand	30	TL	0.32			unsexed	043031

## 5.14. References used for *Cyclocheilichthys apogon*

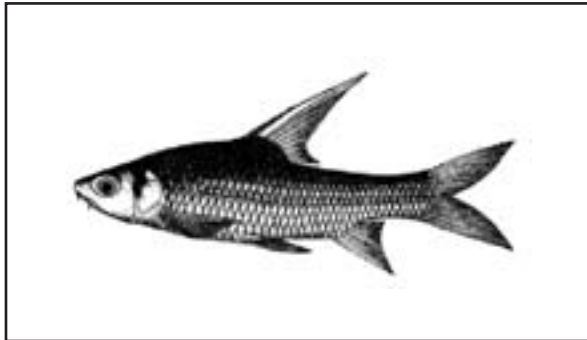
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- 043281 Kottelat, M. 2001. Fishes of Laos. WHT Publications Ltd., Colombo 5, Sri Lanka. 198 p.
- 047438 Anon. 2003. Fish collection of the Royal Ontario Museum. Royal Ontario Museum.

# CYCLOCHEILICHTHYS ENOPLIOS

(Bleeker, 1850)

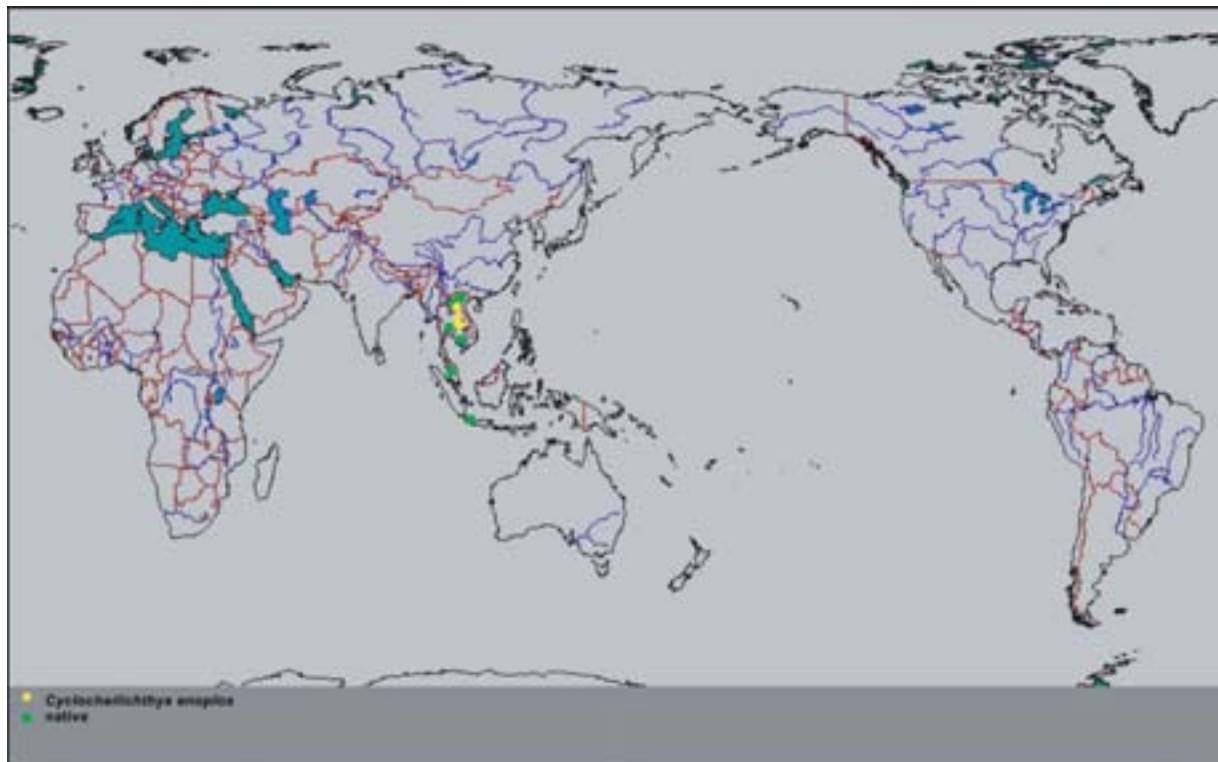
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Picture by [FAO](#)



Picture by [Roberts, T](#)





## 6.1. Summary information on the family Cyprinidae

Family : Cyprinidae (Minnows or carps)  
 Order : Cypriniformes MainRef. : 007463  
 Class : Actinopterygii (ray-finned fishes) FamCode : 122  
 Number of genera : 210  
 Number of species : 2010  
 Occurs in :  Marine  
            Brackish  
            Freshwater  
 Aquarium fishes : many  
 First fossil record : Lower Tertiary Eocene Ref. : 004879  
 Species currently in FishBase: Genera: 331 Species: 2408 (Including subspecies) Complete : Yes

### Remarks:

Distribution: North America (Northern Canada to Southern Mexico), Africa, and Eurasia. Pharynx with 1-3 rows of teeth, each row with a maximum of 8 teeth. Usually thin lips, plicae or papillae absent; mouth sometimes suckerlike (Garra and Labeo). With or without barbels. Premaxilla usually borders the upper jaw making the maxilla entirely or almost entirely excluded from the gape. Usually protrusible upper jaw. Dorsal fin with spinelike rays in some. Primitive number of chromosomes  $2n=50$ , some with 48; polyploidy exists. Maximum length at least 2.5 m to probably 3 m in *Catlocarpio siamensis*; many species less than 5 cm. Mainly non-guarders, but in some species males build nests and/or protect the eggs.  
 Etymology: Greek, kyprinos = goldfish. 1828 (Ref. 45335).

## 6.2. Information on the genus Cyclocheilichthys and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

<b>Anematicthys</b>	Status: synonym	Gender: masculine
Bleeker, 1859, p. 371, CAS Ref: 371		
Type by monotypy		
Type species : <i>Barbus apogon</i>	Valenciennes, 1842	
Current genus : <i>Cyclocheilichthys</i>		
<b>Cyclocheilichthys</b>	Status: valid	Gender: masculine
Bleeker, 1859, p. 371, CAS Ref: 16984		
Type by monotypy.		
Type species : <i>Systomus apogon</i>	Valenciennes, 1842	
Current genus : <i>Cyclocheilichthys</i>		
<b>Cyclocheilos</b>	Status: synonym	Gender: masculine
Bleeker, 1859, p. 386, CAS Ref: 24622		
Type by monotypy.		
Type species : <i>Barbus macracanthus</i>	Bleeker, 1853	
Current genus : <i>Cyclocheilichthys</i>		
<b>Oxybarbus</b>	Status: synonym	Gender: masculine
Vaillant, 1893, p. 57, CAS Ref: 4485		
Type by monotypy.		
Type species : <i>Barbus heteronema</i>	Bleeker, 1853	
Current genus : <i>Cyclocheilichthys</i>		

**Siaja**

Status: synonym

Gender: feminine

Bleeker, 1859, p. 149, CAS Ref: 371

Type by absolute tautonymy.

Type species : *Cyclocheilichthys* (*Siaja*) *siaja* Bleeker, 1851Current genus : *Cyclocheilichthys***Total = 5****6.3. General information on *Cyclocheilichthys enoplos*****Classification**

Class : Actinopterygii (Ray-finned fishes) MainRef. 012693

Order : Cypriniformes

Family : Cyprinidae (Minnows or carps)

Species : *Cyclocheilichthys enoplos*

Author : (Bleeker, 1850) Author Ref.

**Environment**

Freshwater : Yes Habitat : Benthopelagic

Brackish : No

Saltwater : No

**Importance**

Importance to fisheries : Commercial

Main catching method :

Other methods :  Seines  Gillnets  Castnets  Traps  Spears  
 Trawls  Dredges  Liftnets  Hooks+Lines  Other

Used for aquaculture : Experimental Ref. 006459

Used as bait : Never/rarely

Aquarium fish : Never/rarely

Game fish : No

Dangerous fish : Harmless

Electrobiology : No special ability

Size and age

Maximum length (cm) (male/unsexed) : 74 SL (female) : Ref. 030857

Common length (cm) (male/unsexed) : 45 SL (female) : Ref. 012693

Maximum weight (g) (male/unsexed) : (female) : Ref.

**Remarks:**

Occurs at midwater to bottom levels of rivers (Ref. 12693). Feeds mainly on bivalves, roots of plants, zooplankton and green algae (Ref. 6459). Young are known to feed on zooplankton while adults also prey on insect larvae, crustaceans and fish (12693). Lives in rivers and spawns during the rainy season, probably on the floodplains or inundated riparian forests. Returns to the rivers from October to December. Does not occur in impoundments (Ref. 12693). A strongly migratory species that lives in the mainstream and larger tributaries of the Mekong (Ref. 9497). Found in the basin-wide mainstream of the Lower Mekong (Ref. 36667). In the Mekong, it undertakes an upstream migration from Phnom Penh to Khone Falls from November to February, and a downstream migration from May to August. This migration continues down to the Mekong Delta area in Viet Nam, where it continues until the peak of floods in October-November. These two migrations mainly constitute juveniles and sub-adults, although adults of 90 cm are reported very near the Khone Falls. Above the Khone Falls, upstream migrations occur from April to September which are dominated by adult fishes and these are probably spawning migrations because of the presence of mature fishes bearing eggs (Ref. 37770). These upstream migrations above the Khone Falls are reported to be triggered by the first rainfall at the end of the dry season, rising of water levels and higher turbidity (Ref. 37770). A desirable food fish, marketed fresh (Ref. 12693).

## 6.4. Synonyms, misidentifications, etc. used for *Cyclocheilichthys enoplos*

Synonym	Author	Status	Ref.
<i>Cyclocheilichthys amblyiceps</i>	Fowler, 1937	junior synonym	043281
<i>Cyclocheilichthys dumerilii</i>	Sauvage, 1881	junior synonym	002091
<i>Barbus enoploides</i>	Tirant, 1885	junior synonym	002091
<i>Cyclocheilichthys enoplos</i>	Bleeker, 1850	new combination	043281
<i>Capoeta enoplos</i>	Bleeker, 1850	new combination	002091
<i>Barbus enoplus</i>	Bleeker, 1850	original combination	036656
<i>Cyclocheilichthys macracanthus</i>	Bleeker, 1853	junior synonym	002091
<i>Barbus macracanthus</i>	Bleeker, 1853	junior synonym	002091

## 6.5. Common names for *Cyclocheilichthys enoplos*

Name	Language	Country	Ref.
Chhkok	Khmer	Cambodia	040380
Trey chhkok	Khmer	Cambodia	012693
Trey chkok	Khmer	Cambodia	036654
Seren	Javanese	Indonesia	006107
Seren	Malay	Indonesia	006107
Jork	Laotian	Lao People's Dem. Rep.	040382
Pa chok	Laotian	Lao People's Dem. Rep.	037767
Pa choke	Laotian	Lao People's Dem. Rep.	037767
Pa jawk	Laotian	Lao People's Dem. Rep.	009497
Pajohk	Laotian	Lao People's Dem. Rep.	009497
Pa tiok	Laotian	Lao People's Dem. Rep.	004792
Pla ka ti	Thai	Thailand	042982
Pla kra tai	Thai	Thailand	042982
Pla nham lung	Thai	Thailand	42982
Pla ta kok	Thai	Thailand	6459
Pla takoke	Thai	Thailand	6459
Pla tiok	Thai	Thailand	6459
Takok tapien	Thai	Thailand	9648
Cá coc	Vietnamese	Viet Nam	36625

## 6.6. Distribution of *Cyclocheilichthys enoplos*

Asia : Thailand, Laos, Cambodia and Viet Nam to Indonesia and Malaysia. MainRef.: 043281

Latitudinal range: ° - °      Temperature range: - ° C Ref.:

Status of threat: NL.

Country	Status	Ref.
<b>Cambodia</b>	native	012693

Known from the Mekong Basin. A migratory species (Ref. 37772) found around the Tonle Sap river, Great Lake (Ref. 36651) and Sekong at Stung Treng (Ref. 36654). Juveniles and sub-adults migrate out of flooded areas back into the river at receding water and start migrating upstream in the Mekong. Reported to come down the Tonle Sap River into the Mekong. Constitutes an important part of the catch in the Tonle Sap River during December to February (Ref. 37770). Its numbers have declined below Khone Falls to the Tonle Sap River and the Great Lake (Ref. 37772). Also Ref. 7050, 33813, 36662, 43281, 45353.



**Descriptive Characters**

Operculum present : No

**Meristic Characters**

Scales on lateral line : 35-37

Scales around caudal peduncle : 26-26

Gill rakers on lower limb:

**Total = 16-20****6.9. Genetic information for *Cyclocheilichthys enoplos*****Level : species in general****Main Ref.: 010419**

Locality : Unspecified

Locality : Central Thailand, Thailand

Chromosome number (haploid) :25

Ref: 010419

Chromosome number (diploid) :50

Ref: 010419

Genetic marker(s) present : No

Chromosome arm no : 90

Ref: 010419

**Leve : species in general****Main Ref.: 034370**

Locality : Central Thailand, Thailand

Chromosome number (haploid) : 25

Chromosome number (diploid) : 50

Ref: 034370

Genetic marker(s) presen : Yes

Ref: 034370

Chromosome arm no : 70

**Remarks** : 4 NORs. NOR-phenotype: Terminal on short arm of a medium-sized acro-subtelocentric chromosome and terminal on short arm of a medium-sized submetacentric chromosome. NF = 90 (Ref. 034370).

**Spawning Information for *Cyclocheilichthys enoplos*****Locality : Laos , Mekong Basin, Xayabouri Province,****Stockcode: 014269**

Season (% of mature females; 111= presence of mature females):

Main Ref.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

111 111 111 111 111 111

**Locality : Laos , Mekong Basin, Xayabouri Province,****Stockcode: 014269**

Season (% of mature females; 111= presence of mature females):

Main Ref.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

111 111

**Locality : Laos , Mekong Basin, Xayabouri Province,****Stockcode: 014269**

Season (% of mature females; 111= presence of mature females):

Main Ref.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

111 111 111 111

## 6.10. Ecology of *Cyclocheilichthys enoplos*

**Level : species in general**                      **StockCode: 014269 014495**                      **Main Ref.: 033813**

### Habitats

Streams : Yes    Lake : Yes    Cave : No  
 Estuaries/lagoons/brackish seas : No  
 Intertidal : No    Soft : No    Rocky : No    Mangroves/marches/swamps: No  
 Marine : No    Oceanic : No    Neritic : No    Coral reefs: No  
 Tropicalsoft bottom : No    Hard bottm: No    Seagrass beds: No    Macrophyte: No

### Feeding

Feeding Type : plants/detritus+animals (troph. 2.8 and up)                      Ref: 033813

<b>Trophic level(s) :</b>	<b>Original sample</b>	<b>Unfished population</b>	<b>Remarks</b>
Estimation method	Troph s.e	troph s.e	
From indiv. food item :	3.2    0.43	-    -	Trophic level estimate

## 6.11. Food items for *Cyclocheilichthys enoplos*

**Level : species in general**

**StockCode: 014269**

Food item				Ref.
<b>nekton</b>				
finfish	bony fish	unidentified	unidentified	033813
<b>plants</b>				
other plants	benthic algae/weeds	unidentified	unidentified	006459
	terrestrial plants	unidentified	unidentified	006459
<b>zoobenthos</b>				
benth. crust.	n.a./other benth. crustaceans	unidentified	unidentified	012693
insects	insects	Ephemeroptera	unidentified	012975
		Hemiptera	unidentified	012975
		unidentified	unidentified	033813
mollusks	bivalves	unidentified	unidentified	006459
<b>zooplankton</b>				
other plank.	n.a./other plank.	unidentified	unidentified	033813
invertebrates	Invertebrates			
<b>Total = 9</b>				



## 6.12. References used for *Cyclocheilichthys enoplos*

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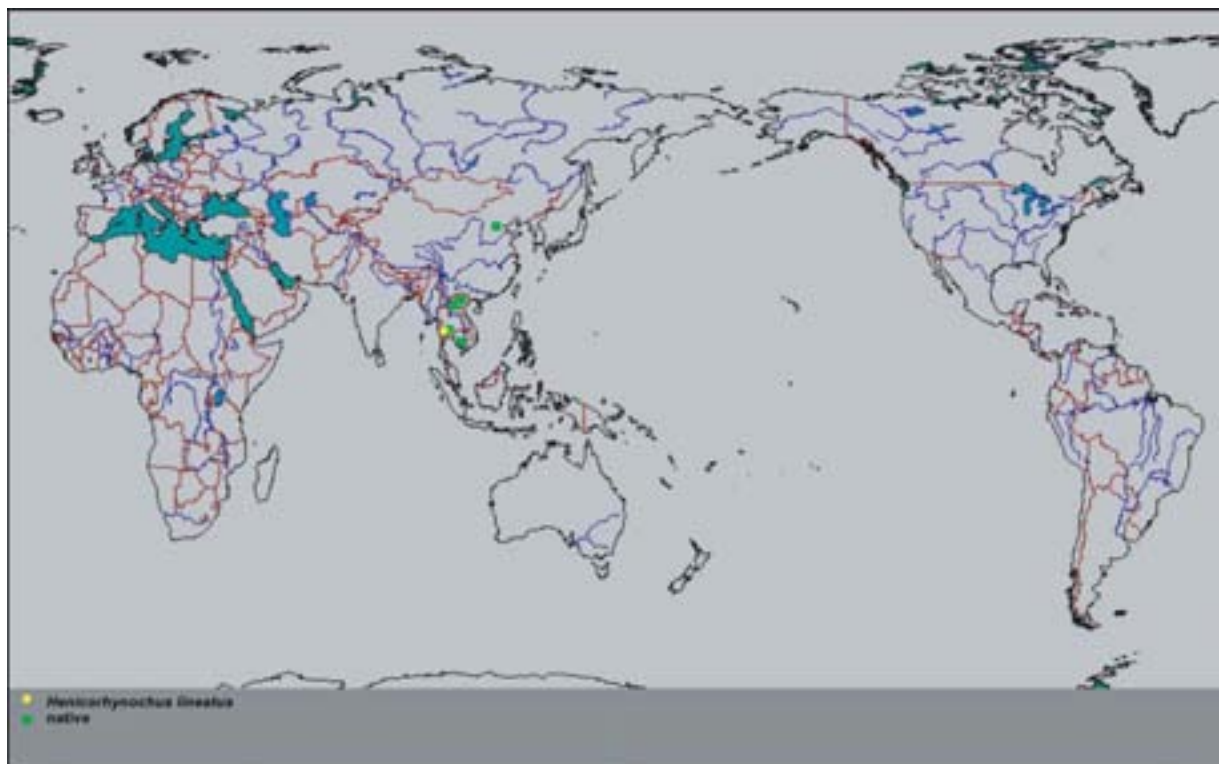
# HENICORHYNCHUS LINEATUS

(Smith, 1945)

ត្រីអៀនឆ្មុត



Picture by [Baird, I](#)





**Size and age**

Maximum length (cm) (male/unsexed) : 15 SL (female) :

Ref. : 027732

**Remarks** : Occurs mainly in medium to large-sized rivers and enters flooded fields (Ref. 12975).**7.4. Synonyms, misidentifications, etc. used for *Henicorhynchus lineatus***

Synonym	Author	Status	Ref.
Henicorhynchus cryptopogon	non Fowler, 1935	misidentification	033488
Henicorhynchus lineatus	Smith, 1945	new combination	027732
Cirrhinus lineatus	Smith, 1945	original combination	036656

**Total = 3****7.5. Common names for *Henicorhynchus lineatus***

Name	Language	Country	Ref.
Pasoi	Laotian	Lao People's Dem. Rep	010421
Pa soi lai	Laotian	Lao People's Dem. Rep	037767
Pla soi la	Thai	Thailand	009648

**7.6. Distribution of *Henicorhynchus lineatus*****Asia:** Mekong and Chao Phraya Basins. Main Ref.: 027732

Country	Status	Ref.
<b>Cambodia</b>	native	033488
	Occurs in the Mekong Basin (Ref. 27732). Recorded from O. Changni, small stream on road from Ann Long Mea to Ban Lung, Ratanakiri prov. (Ref. 33488). Also Ref. 43281.	
<b>China</b>	native	038630
	Occurs in the Mekong Basin in Yunnan. Also Ref. 27732, 43281.	
<b>Lao People's Dem. Rep.</b>	native	043281
	Known from the Mekong Basin. Occurs in the lower and middle Xe Bangfai (Ref. 27732). Found in Ban Hang Khone in the middle of the mainstream Mekong River just below the Great Khone Waterfalls in Khong District, Champasak Province (Ref. 37767). Museum: Mekong at Ban Hang Khone, just below Khone Falls, CAS 94791 (Ref. 5515). Also Ref. 30857.	
<b>Thailand</b>	native	027732
	Occurs in the Mekong and Chao Phraya Basin (Ref. 26336, 27732). Museum: Mekong mainstream, CAS 96196 (between Pak Ing and JomPaeng, about 4-5 km downstream); CAS 91766 (from Pak Ing to Tom Paeng, 4-5 km downstream) (Ref. 5515). Also Ref. 43281.	
<b>Viet Nam</b>	native	043281
	Occurs in the Mekong Basin.	

**Total native = 5 Total introduced = 0**





## 7.9. References used for *Henicorhynchus lineatus*

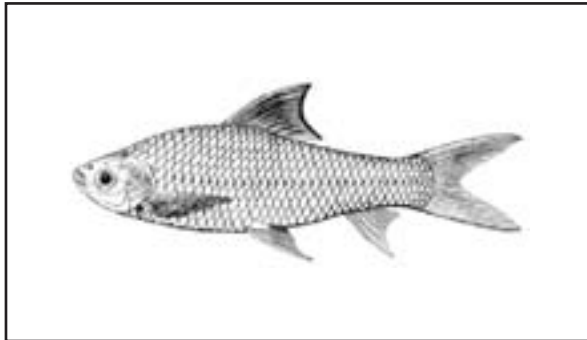
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# HENICORHYNCHUS SIAMENSIS

(Sauvage, 1881)

Siamese mud carp

ត្រីអៀង



Picture by [FAO](#)



Picture by [Warren T](#)



## 8.1. Summary information on the family Cyprinidae

Family : Cyprinidae (Minnows or carps)  
Order : Cypriniformes MainRef. : 007463  
Class : Actinopterygii (Ray-finned fishes) FamCode : 122  
Number of genera : 210  
Number of species : 2010  
Occurs in :  Marine  
           Brackish  
           Freshwater  
Aquarium fishes : many  
First fossil record : Lower Tertiary Eocene Ref. : 004879  
Species currently in FishBase: Genera: 331 Species: 2408 (Including subspecies) Complete: Yes

### Remarks:

Distribution: North America (Northern Canada to Southern Mexico), Africa, and Eurasia. Pharynx with 1-3 rows of teeth, each row with a maximum of 8 teeth. Usually thin lips, plicae or papillae absent; mouth sometimes sucker like (*Garra* and *Labeo*). With or without barbels. Premaxilla usually borders the upper jaw making the maxilla entirely or almost entirely excluded from the gape. Usually protrusible upper jaw. Dorsal fin with spine like rays in some. Primitive number of chromosomes  $2n=50$ , some with 48; polyploidy exists. Maximum length at least 2.5 m to probably 3 m in *Catlocarpio siamensis*; many species less than 5 cm. Mainly non-guarders, but in some species males build nests and/or protect the eggs.  
Etymology: Greek, kyprinos = goldfish. 1828 (Ref. 45335).

## 8.2. Information on the genus *Henicorhynchus* and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

*Henicorhynchus* Status : synonym Gender : masculine  
Smith, 1945, p. 256, CAS Ref: 4056  
Type by original designation (also monotypic).  
Type species : *Henicorhynchus lobatus* Smith, 1945  
Current genus : *Cirrhinus*

## 8.3. General information on *Henicorhynchus siamensis*

### Classification

Class : Actinopterygii (Ray-finned fishes) MainRef. : 033488  
Order : Cypriniformes  
Family : Cyprinidae (Minnows or carps)  
Species : *Henicorhynchus siamensis*  
Author : (Sauvage, 1881)

### Environment

Freshwater : Yes Habitat : Benthopelagic  
Brackish : No  
Saltwater : No

**Importance**

Ref.:012693

Importance to fisheries : Commercial

Used for aquaculture Never/rarely

Used as bait Never/rarely

Aquarium fish Commercial

Game fish No

Ref.:012693

Dangerous fish harmless

Electrobiology No special ability

**Size and age**

Maximum length (cm) (male/unsexed) : 20 SL (female) :

**Remarks:**

Often found in great abundance at midwater to bottoms depths in large and small rivers. Feeds on algae, periphyton and phytoplankton. Not known to prosper in impoundments. Well known for its annual trophic migrations out to the floodplains in wet season. Returns to rivers as water levels begin to fall in October with numbers increasing through December and then slowly declining (Ref. 12693). From just upstream Phnom Penh in Cambodia to the Khone Falls this species is reported to migrate upstream during the period October-February. At Muk Kompul in Kandal Province, it migrates upstream just before the full moon. Further upstream near Kratie, migration occurs during full moon and at Sambor, migration takes place immediately after full moon. Near the Khone Falls, upstream movements continue through March but in April fish are moving in both directions. From May to July, at the start of the rainy season, it migrates downstream from the Khone Falls to the Mekong Delta. Here, the fish are reported to move out of the Mekong into canals and flooded areas in August-September. When water recedes in November-December, fish migrate to the Mekong again. Upstream from the Khone Falls near Ubolratchatani in Thailand, this species moves upstream between February and June, consisting mainly of juveniles in February-March and of adults (15-20 cm) in April-June. Further upstream from Xayabouri in Laos to Chiang Khong in Thailand, upstream migrations take place between March to July, first by juveniles, later by adults (Ref. 37770). Used to make prahoc along the Tonlé Sap, Cambodia. Often seen in the aquarium trade (Ref. 12693).

#### 8.4. Synonyms, misidentifications, etc. used for *Henicorhynchus siamensis*

Synonym	Author	Status	Ref.
<i>Tylognathus brunneus</i>	Fowler, 1934	junior synonym	033488
<i>Tylognathus entmema</i>	Fowler, 1934	questionable	033488
<i>Cirrhinus jullieni</i>	nonSauvage, 1878	misidentification	033488
<i>Henicorhynchus lobatus</i>	non Smith, 1945	misidentification	033488
<i>Cirrhinus marginipinnis</i>	Fowler, 1937	junior synonym	033488
<i>Crossocheilus reba</i>	Smith, 1945	other	033488
<i>Cirrhina sauvagei</i>	Fang, 1942	junior synonym	043281
<i>Tylognathus siamensis</i>	de Beaufort, 1927	junior synonym	043281
<i>Morara siamensis</i>	Sauvage, 1881	original combination	043281
<i>Henicorhynchus siamensis</i>	Sauvage, 1881	new combination	043281
<i>Henicorhynchus siamensis</i>	de Beaufort, 1927	junior synonym	033488
<i>Cirrhinus siamensis</i>	Sauvage, 1881	new combination	043281
<i>Aspidoparia siamensis</i>	Sauvage, 1881	new combination	033488
<i>Crossocheilus thai</i>	Fowler, 1944	junior synonym	043281

**Total = 14**

## 8.5. Common names for *Henicorhynchus siamensis*

Name	Language	Country	Ref.
Trey real	Khmer	Cambodia	010431
Trey riel	Khmer	Cambodia	012693
Trey riel tob	Khmer	Cambodia	012693
Pa mohk	Laotian	Lao People's Dem. Rep.	009497
Pa soi	Laotian	Lao People's Dem. Rep.	009497
Pa soi houa po	Laotian	Lao People's Dem. Rep.	037767
Siamese mud carp	English	USA (contiguous states)	004537

Total = 7

## 8.6. Distribution of *Henicorhynchus siamensis*

Asia : Mekong and Chao Phraya Basins.

MainRef.: 033488

Status of threat : NL.

Country	Status	Ref.
<b>Cambodia</b>	native	012693
<p>Found in the Mekong River (Ref. 43281). Known from Phnom Penh (Ref. 36654) and Great Lake (Ref. 33813). Just upstream Phnom Penh to the Khone Falls, this fish migrates upstream during the period from October to February. At Muk Kompul in Kandal Province, it moves upstream just before the full moon. Further upstream near Kratie, this fish undertakes migration during full moon and at Sambor, it migrates immediately after full moon (Ref. 37770). This is the most important fish in the annual dai (set-net) fishery in the Tonlé Sap. Used to make prahoc (Ref. 12693). Also Ref. 1632, 10431, 27732, 33488, 36662, 36686, 45353.</p>		
<b>Lao People's Dem. Rep.</b>	native	027732
<p>Occurs in the Mekong and the Lower and Middle Xe Bangfai (Ref. 27732). Found in Ban Hang Khone, a village on an island in the middle of the mainstream Mekong River just below the Great Khone Waterfalls in Khong District, Champasak Province (Ref. 37767). Undertakes upstream and downstream migrations during the wet season in June-July through Hoo Som Yai at the Great Fault Line on the Mekong River, Champassack Province (Ref. 37771). Reported to migrate upstream during the dry season in December-March in Southern Laos (Ref. 37769). From Xayabouri in Laos to Chiang Khong in Thailand, this species is reported to migrate upstream from March to July, first by juveniles, later by adults (Ref. 37770). Museum: Mekong River, CAS 93270 (Ban Hang Khone, below Lee Pee Waterfalls); CAS 94931 (Ban Hang Khone); CAS 96204, 94279 (Ban Hang Khone just below Khone falls) (Ref. 5515). Also Ref. 4792, 10431, 30857, 33488, 36654, 37770, 43281, 44002.</p>		
<b>Thailand</b>	native	033488
<p>Known from the Chao Phraya and the Mekong Basins (Ref. 10431, 33488, 43281). From Xayabouri in Laos to Chiang Khong in Thailand, this species is reported to migrate upstream from March to July, first by juveniles, later by adults (Ref. 37770). Museum: Mekong, CAS 79183 (ca. 4 km downriver from Pak Ing, ca 25 km downriver from Chiang Khong); CAS 96188 (near Chiang Saen) (Ref. 5515). Also Ref. 1632, 12693, 27732, 36654.</p>		
<b>Viet Nam</b>	native	027732
<p>Known from the Mekong Basin (Ref. 43281). From May to July, at the start of the rainy season, it migrates downstream from the Khone Falls to the Mekong Delta. Here, the fish moves out of the Mekong into canals and flooded areas in August-September. When water recedes during November-December, fish migrate to the Mekong again (Ref. 37770). Also Ref. 36654.</p>		

Total native = 4 Total introduced = 0





**Locality : Laos , Mekong Basin at Hatsakhoun Village near Khong Island** **Stockcode: 045787**  
 Season (% of mature females; 111 = presence of mature females):  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111  
**Comment** : Based on 11 female specimens with fully developed ovaries.

Main Ref.: 037770

**Locality : Laos , Mekong Basin at Savannakhet-Mukdahan**  
 Season (% of mature females; 111 = presence of mature females):  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111

**Stockcode: 045787**  
 Main Ref.: 037770  
 Data Ref.: 111

**Locality : Laos , Mekong Basin at Sambor**  
 Season (% of mature females; 111 = presence of mature females)  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111

**Stockcode: 045787**  
 Main Ref.: 037770

**Comment** : Mature females release eggs which then flow downstream.

**Locality : Thailand, Mekong Basin at Savannkhet-Mukdahan**  
 Season (% of mature females; 111 = presence of mature females)  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111 111

**Stockcode: 045787**  
 Main Ref.: 037770

**Locality : Thailand, Mekong Basin at Loei**  
 Season (% of mature females; 111 = presence of mature females)  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111

**Stockcode: 045787**  
 Main Ref.: 037770

**Comment** : Spawns in a tributary (Loei River) in a small pool with slow current. Spawning seems to occur over a longer period and extend into August-September from Loei and upstream

**Locality : Thailand, Mekong Basin at Chiang Khong**  
 Season (% of mature females; 111= presence of mature females)  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111 111

**Stockcode: 045787**  
 Main Ref.: 037770

**Comment** : Fish migrate up in tributaries to spawn from May to July.

## 8.10. Ecology of *Henicorhynchus siamensis*

**Level : species in general**

**StockCode : 045787, 055277**

**Main Ref.: 012693**

### Habitats

Streams	: Yes	Lakes : Yes	Caves : No	(exclusively): No
Estuaries/lagoons/brackish seas	: No			
Intertidal	: No	Soft : No	Rocky: No	Mangroves/marshes/swamps : No
Marine	: No	Oceanic : No	Neritic: No	Coral reefs : No
Tropical soft bottom	: No	Hard bottom	Seagrass beds : No	Macrophyte : No

### Feeding

Feeding Type : mainly plants/detritus (troph. 2-2.19)

Feeding Habit : grazing on aquatic plants

## 8.11. Food items for *Henicorhynchus siamensis*

Level : species in general  
plants

StockCode : 045787

other plants	benthic algae/weeds	Chlorophytes	unidentified filamentous chlorophytes	037771
		unidentified	unidentified	033813
	periphyton	unidentified	unidentified	033813
phytoplankton	n.a./other phytoplankton	unidentified	unidentified	033813

## 8.12. References used for *Henicorhynchus siamensis*

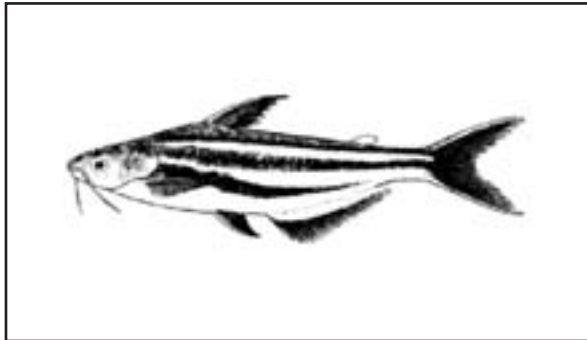
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# PANGASIUS HYPOPTHALMUS

(Sauvage, 1878)

Sutchi catfish

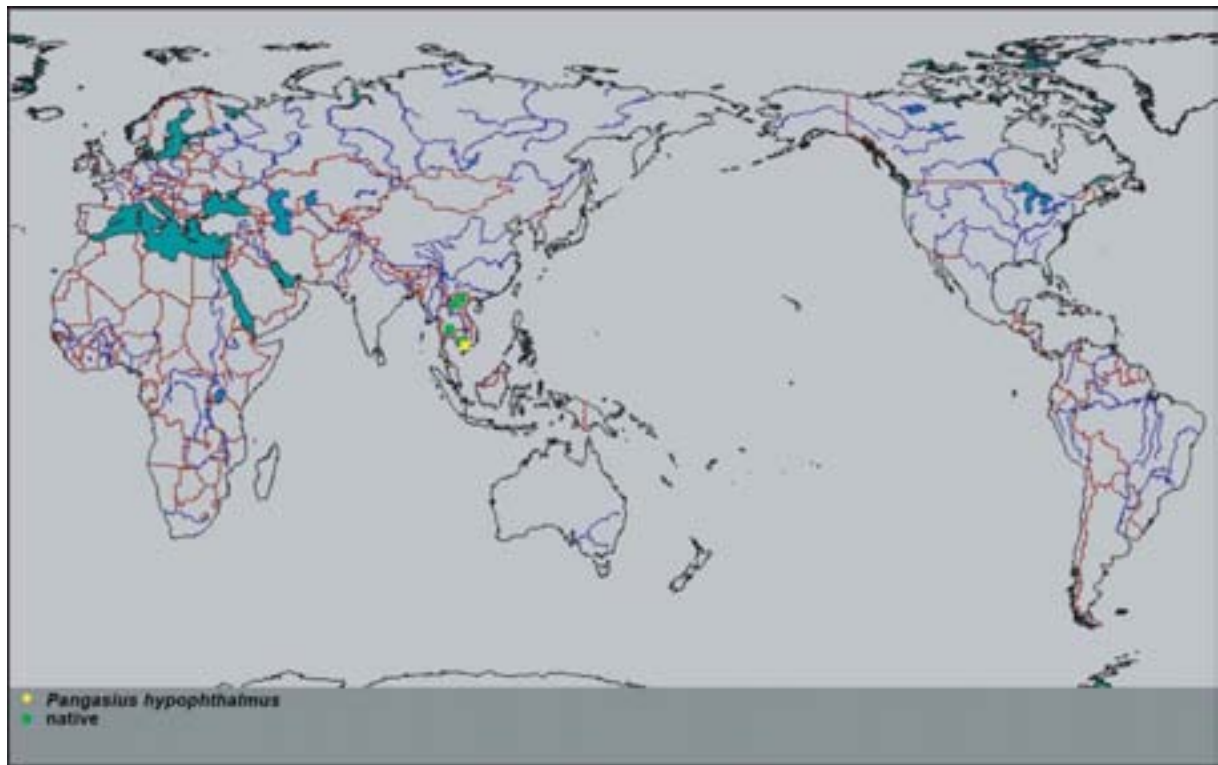
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Picture by [FAO](#)



Picture by [Baird I](#)



## 9.1. Summary information on the family Pangasiidae

Family	: Pangasiidae (Shark catfishes)	
Order	: Siluriformes	MainRef. : 007463
Class	: Actino pterygii (ray-finned fishes)	FamCode : 134
Number of genera 2	:	
Number of species	: 21	
Occurs in	: <input type="radio"/> Marine	
	<input checked="" type="radio"/> Brackish	
	<input checked="" type="radio"/> Freshwater	
Aquarium fishes	: some	
First fossil record	: Tertiary	Ref. : 004830
Species currently in FishBase: Genera: 5 Species: 30 (Including subspecies) Complete : Yes		

### Remarks:

Distribution: southern Asia (Pakistan to Borneo). Barbels usually two pairs: 1 pair of chin barbels. No nasal barbels. Compressed body. With small adipose fin, separate from caudal fin. Dorsal fin close to head region; 1 or 2 spines, 5-7 soft rays. Anal fin 26-46 rays. Vertebrae 39-52. Maximum length about 3 m. Maximum weight 300 kg (*Pangasius gigas*).  
Etymology: The Vietnamese name of a fish

## 9.2. Information on the genus *Pangasius* and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

**Neopangasius** Status: synonym Gender: masculine

Popta, 1904, p. 180, CAS Ref: 3547

Type by monotypy.

Type species : *Neopangasius nieuwenhuisii* Popta, 1904

Current genus : *Pangasius*

**Pangasianodon** Status: valid Gender: masculine

Chevey, 1931, p. 538, CAS Ref: 830

Type by monotypy.

Type species : *Pangasianodon gigas* Chevey, 1931

Current genus : *Pangasius*

**Pangasius** Status: valid Gender: masculine

Valenciennes in Cuvier & Valenciennes, 1840, p. 45, CAS Ref: 1008

Type by monotypy.

Type species : *Pangasius buchanani* Valenciennes, 1840

Current genus : *Pangasius*

**Pseudolais** Status: synonym Gender: feminine

Vaillant, 1902, p. 51, CAS Ref: 4490

Type by monotypy.

Type species : *Pseudolais tetranema* Vaillant, 1902

Current genus : *Pangasius*

**Pseudopangasius** Status: synonym Gender: masculine

Bleeker, 1852, p. 399, CAS Ref: 391

Type by original designation (also monotypic).

Type species : *Pangasius polyuranodon* Bleeker, 1852

Current genus : *Pangasius*

**Pteropangasius**

Status: valid

Gender: masculine

Fowler, 1937, p. 142, CAS Ref: 1425

Type by original designation (also monotypic).

Type species : *Pangasius cultratus*

Smith, 1931

Current genus : *Pangasius***9.3. General information on *Pangasius hypophthalmus*****Classification**

Class : Actinopterygii (Ray-finned fishes) Ref: 007432  
 Order : Siluriformes  
 Family : Pangasiidae (Shark catfishes)  
 Subfamily :  
 Species : *Pangasius hypophthalmus*  
 Author : (Sauvage, 1878)

**Environment**

Freshwater : Yes Habitat : Benthopelagic  
 Brackish : No Migrations :  
 Saltwater : No Depth range :

**Importance**

Main catching method

Other methods :  Seines  Gillnets  Castnets  Traps  Spears  
 Trawls  Dredges  Liftnets  Hooks+Lines  Other

Used for aquaculture Commercial Ref: 007432

Used as bait Never/rarely

Aquarium fish Never/rarely

Game fish No

Dangerous fish Harmless

Electrobiology No special ability

**Size and age**

Maximum length (cm) (male/unsexed) : 130 SL (female) : Ref. 007432

Maximum weight (g) (male/unsexed) : 15,500.00 (female) : Ref. 007432

**Remarks:**

Inhabits large rivers (Ref. 12693). Omnivorous (Ref. 6459), feeding on fish and crustaceans as well as on vegetable debris (Ref. 12693). A migratory species, moving upstream of the Mekong from unknown rearing areas to spawn in unknown areas in May-July and returning to the mainstream when the river waters fall seeking rearing habitats in September-December (Ref. 37772). South of the Khone Falls, upstream migration occurs from October to February, with peak in November-December. This migration is triggered by receding water and appears to be a dispersal migration following the lateral migration from flooded areas back into the Mekong at the end of the flood season. Downstream migration takes place from May to August from Stung Treng to Kandal in Cambodia and further into the Mekong Delta in Viet Nam. The presence of eggs during March to August from Stung Treng to Kandal indicates that the downstream migration is both a spawning and a trophic migration eventually bringing the fish into floodplain areas in Cambodia and Viet Nam during the flood season (Ref. 37770). Common in the Lower Mekong, where the young are collected for rearing in floating fish cages. In the Middle Mekong it is represented by large individuals that lose the dark coloration of the juveniles and subadults and become grey without stripe (Ref. 12693). One of the most important aquaculture species in Thailand (Ref. 9497).



## 9.4. Synonyms, misidentifications, etc. used for *Pangasius hypophthalmus*

Synonym	Author	Status	Ref.
<i>Pangasius hypophthalmus</i>	Sauvage, 1878	new combination	007432
<i>Pangasianodon hypophthalmus</i>	Sauvage, 1878	new combination	007432
<i>Helicophagus hypophthalmus</i>	Sauvage, 1878	original combination	007432
<i>Pangasius pangasius</i>	non Hamilton 1822	misidentification	007432
<i>Pangasius pleurotaenia</i>	non Sauvage, 1878	misidentification	007432
<i>Pangasius sutchi</i>	Fowler, 1937	junior synonym	007432

## 9.5. Common names for *Pangasius hypophthalmus*

Name	Language	Country	Ref.
Pra	Khmer	Cambodia	040380
Trey pra	Khmer	Cambodia	012693
Pa sooai	Laotian	Lao People's Dem. Rep.	009497
Pa sooai khaeo	Laotian	Lao People's Dem. Rep.	009497
Pa souay kheo	Laotian	Lao People's Dem. Rep.	037767
Stripe catfish	English	Thailand	006459
Pla sawai	Thai	Thailand	006459
Iridescent shark-catfish	English	United Kingdom	012693
Sutchi catfish	English	United Kingdom	003691
Swai	English	USA (contiguous states)	004537

## 9.6. Distribution of *Pangasius hypophthalmus*

**Asia** : Mekong, Chao Phraya, and perhaps Mekong Basins. Introduced into additional river basins for aquaculture. MainRef.: 007432

Latitudinal range: 19° N - 8° N Temperature range: 22 - 26 °C Ref.: 13371

Status of threat: NL.

Country	Status	Ref.
<b>Bangladesh</b>	introduced	044085
One of the most 'disastrous' alien invasive species brought to the country (Ref. 44085).		
<b>Cambodia</b>	native	007432
Known from the Mekong Basin. Found in Great Lake and Tonle Sap River (Ref. 33813, 36654 and 45353). South of the Khone Falls, this species migrates upstream from October to February, peaking in November-December and extending into April from Kandal Province to Stung Treng (Ref. 37770). Migration occurs during full moon at Kratie and Kompong Cham (Ref. 37770). Migrates downstream from May to August from Stung Treng to Kandal and further into the Mekong Delta in Viet Nam, at least to Cai Be (Ref. 37770). This downstream migration is both a spawning and a trophic migration eventually bringing the fish onto floodplain areas during the flood season (Ref. 37770). Exclusively fished by explosives in northern Cambodia (Ref. 12693). Also Ref. 37772.		
<b>Lao People's Dem. Rep.</b>	native	007432
Known from the Mekong River (Ref. 43281). A migratory species that is found around Pak Beng to the Khone Falls (Ref. 37772). Found in Ban Hang Khone at Don Khone, 3 km below the fall line of the great waterfalls of the Mekong Basin at Lee Pee (Ref. 9497). Undertakes upstream migration during the wet season in May-June through Hoo SomYai at the Great Fault Line on the Mekong River, Champasak Province (Ref. 37771). Considered one of the important pangasid species in the Khone Falls "lee" (wing) trap fishery during May to July each year (Ref. 37770). Also Ref. 4792, 30857, 37767.		



Year : 1972 Established : no Ref. 001739  
 Introduced : to Indonesia from Thailand  
 Reason : aquaculture  
**Comments** : Artificially bred and has a good prospect for aquaculture.

Year : 1978 Established : probably yes Ref. 006096  
 Introduced : to Philippines from Thailand  
 Reason : fisheries  
**Comments** : Reintroduced in 1982. Artificially bred in ponds and reservoirs. Recorded from Luzon.

Year : unknown Established : yes Ref. 038466  
 Introduced : to Singapore from Unknown  
 Reason : aquaculture  
**Comments** : New helminth gill parasites from imported cultured catfish in Malaysia were recently described and it is likely that these parasites are now also present in Singapore.

**Total = 27 Established : yes = 1 Probably yes = 1**

## 9.8. Summary information (no. of records) available for *Pangasius hypophthalmus*

Level : species in general StockCode : 007432 MainRef.: 007432

Ecology	1	Max. sizes	0	Strains	0
Food items	6	FAO catches	15502	Diseases	12
Food consumption	0	Genetics	1	Ciguatera	0
Diet composition	0	Allele frequency	0	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	0
Predators	0	Reproduction	1	Gill area	0
Morphology	1	Spawning	3	Swimming type	0
Processing	0	Eggs	0	Swimming speed	0
Growth/mortality	0	Egg dev't.	0	Vision	0
Maturity	0	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	7
L/W relat.	1	Aquaculture	0	Occurrence	38

## 9.9. Morphology of *Pangasius hypophthalmus*

Level : species in general StockCode : 014046 Main Ref.: 012693  
 Appearance refers to : O females O males

### Diagnostic Characters

Fins dark grey or black; 6 branched dorsal-fin rays; gill rakers normally developed; young with a black stripe along lateral line and a second long black stripe below lateral line, large adults uniformly grey (Ref. 12693). Dark stripe on the middle of anal fin; dark stripe in each caudal lobe; small gill rakers regularly interspersed with larger ones (Ref. 43281).

### Descriptive Characters

Striking features : none  
 Body shape lateral : elongated  
 Operculum present : no  
 Type of eyes : more or less normal  
 Position/type of mouth : terminal

### Pigmentation on trunk and tail

Horizontal stripes  
Vertical stripes           absent  
Diagonal stripes       absent  
Curved stripes         absent  
Spots                   no spots  
Caudal fin             more than one spot or stripe  
Anal fin (A1)         one spot or stripe

### Dorsal fins

Number of fins         : 1  
Adipose fin            : present

### Paired fins

Pectoral attributes    : more or less normal  
Pelvics attributes     : more or less normal  
          position       : abdominal behind origin of D1  
          spines        : sift rays: 8 -9

## 9.10. Genetic information for *Pangasius hypophthalmus*

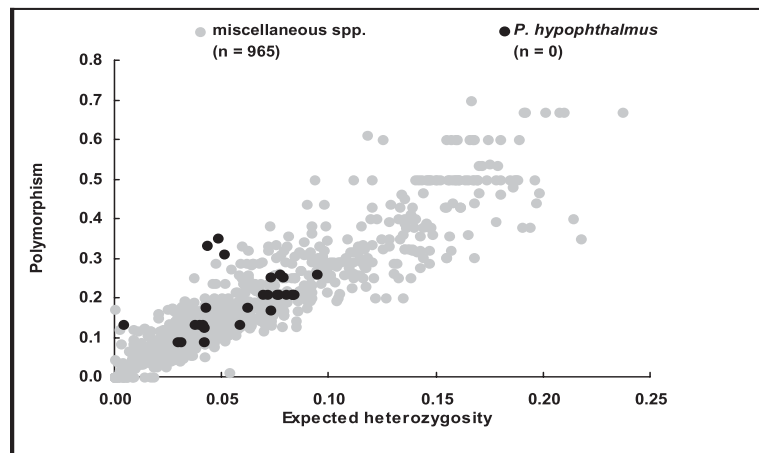
### Level : species in general

Chromosome number (haploid) : 30  
Chromosome number (diploid) : 60  
Genetic marker(s) present     : No  
Remarks: Hybridization expt.

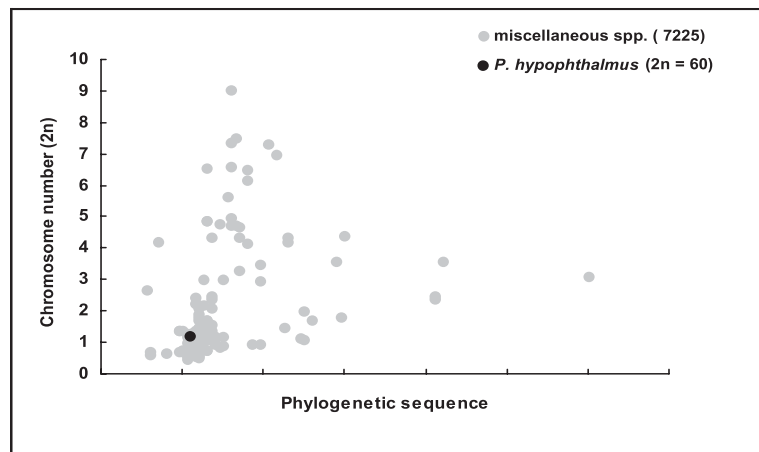
MainRef.: 034370

Ref: 034919

Polymorphism vs heterozygosity of *Pangasius hypophthalmus*



Chromosome number of (2n) *Pangasius hypophthalmus*



## 9.11. General information on the reproduction of *Pangasius hypophthalmus*

**Level : species in general,** **StockCode : 014046**  
 Mode and Type of Reproduction  
 Mode : dioecism  
 Fertilization : external  
 Spawning frequency : one clear seasonal peak per year  
 Batch spawner : no  
 Reproductive guild : nonguarders Open water/substratum egg scatterers  
 Assuming same reproductive mode as *P. conchophilus*.

### Spawning Information for *Pangasius hypophthalmus*

**Locality :** Cambodia, Mekong Basin from Stung Treng to Kandal Stock code: 014046  
**Season** (% of mature females; 111 = presence of mature females):  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111

**Comment :** Eggs occur during March to August, with a strong peak in June-July.

**Locality :** Laos , Mekong Basin at Xayabouri Stock code: 014046  
**Season** (% of mature females; 111 = presence of mature females): Main ref: 037770  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111 111

**Comment :** Based on presence of eggs and milt during migration.

**Locality :** Thailand , Mekong Basin at Loei Stock code: 014046  
**Season** (% of mature females; 111 = presence of mature females): Main ref: 037770  
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
 111 111 111

**Comment :** Based on presence of eggs and milt during migration.

## 9.12. Ecology of *Pangasius hypophthalmus*

**Level : species in general** **StockCode: 014046, 014154** **Main Ref.: 033813**  
**Habitats** Ref: 033813  
 Streams : Yes Lake: Yes Cave: No  
 Estuaries/lagoons/brackish seas: No  
 Intertidal : No Soft : No Rocky : No Mangroves/marches/swamps: No  
 Marine : No Oceanic : No Neritic : No Coral reefs: No  
 Tropicalsoft bottom : No Hard bottom: No Seagrass beds: No Macrophyte: No

### Feeding

Feeding Type : plants/detritus+animals (troph. 2.8 and up) Ref: 033813  
 Feeding habit : hunting macrofauna (predator)

<b>Trophic level(s) :</b>	<b>Original sample</b>	<b>Unfished population</b>	<b>Remarks</b>
Estimation method	Troph s.e	troph s.e	
From indiv. food item:	3.3 0.50	- -	Trophic level estimate

### 9.13. Food items for *Pangasius hypophthalmus*

Level: species in general

Stock code: 014046

Food item				Ref.
<b>nekton</b>				
finfish	bony fish	unidentified	unidentified fish	049196
	n.a./other finfish	unidentified	unidentified	012693
<b>plants</b>				
other plants	benthic algae/weeds	unidentified	unidentified vegetable debris	012693
	periphyton	unidentified	unidentified	012693
<b>zoobenthos</b>				
benth. crust.	n.a./other benth. crustaceans	unidentified	unidentified	012693
insects	insects	unidentified	unidentified	033813
<b>Total = 6</b>				

### 9.14. Length-Weight relationships of *Pangasius hypophthalmus*

( $W = a \cdot L^b$  with Length in cm and Weight in g )

**Locality**

Length range : 84 - 91.5 TL

Sample size :2: 0.0152

Correlation coefficient : 3

StockCode : 014046

Main Ref. 040637

Sex : unsexed

Ref. 40637.

**Comment** : L-W relationship calculated from data in

### 9.15. Diseases reported for *Pangasius hypophthalmus*

**StockCode : 014046**

**Main : 026129**

Parasitic infestations (protozoa, worms, etc.), Silurodiscoides Infestation Ref. : 026129

Causative agent : Silurodiscoides sp.

Occurrence : Luzon, Philippines, 1992

eggs       fry       females       in the wild  
 larvae       juveniles       males       in culture

**Remarks** : Infestation occurs most commonly in the gills. Records are from aquarium and the genus *Silurodiscoides* has not yet been recorded from Philippine natural waters. This report involves an aquarium fish that is imported from Hong Kong and was examined in Quezon City (Lumanlan et. al. 1992).

Parasitic infestations (protozoa, worms, etc.), *Cryptobia* Infestation Ref. : 041806

*Cryptobia* branchialis

Causative agent : *Cryptobia* sp.

Occurrence : Luzon, Philippines, 1992

eggs       fry       females       in the wild  
 larvae       juveniles       males       in culture

**Remarks** : Infestation occurs most commonly in the gills and the skin. Records are from fishes imported for aquaculture and the aquarium fish trade (Lumanlan et al. 1992).



Parasitic infestations (protozoa, worms, etc.), Trichodinosis Ref. : 000193  
Trichodinella sp : Trichodina infestation  
Causative agent : Trichodina sp.  
Occurrence : Luzon, Philippines, 1992

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

Prevalence : common

**Remarks** : Parasitic infestations (protozoa, worms, etc.), White spot Disease Ich, Ichthyophthiriasis, similar symptoms : Cryptocaryon irritans (occurs in freshwater, Cryptocaryon is the marine counterpart). Ref. : 000193

Causative agent : Ichthyophthirius multifiliis

Occurrence : Luzon, Philippines, 1992

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

Prevalence : common Type of culture

**Remarks** : Infestation occurs most commonly in the gills and the skin. The records pertain to fishes imported for aquaculture purposes and the ornamental fish trade (Lumanlan et al.1992).

**StockCode : 014046**

**MainRef. : 047494**

Parasitic infestations (protozoa, worms, etc.), Enteric Septicaemia of Catfish Ref. : 048850

Causative agent : Edwardsiella ictaluri

Occurrence : Mekong Delta, Viet Nam, 2001

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

**StockCode: 014046**

**MainRef. : 048502**

Others, DMS Ref. : 048502

Delayed Mortality Syndrome; Environmental Shock; Brain Damage

Causative agent : N.A.

Occurrence : not specified

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

Parasitic infestations (protozoa, worms, etc.), Sporozoa Infection (Hennegya sp.) Ref. : 041805

Henneguya Infection

Causative agent : Hennegya sp.

Occurrence : not specified

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

Parasitic infestations (protozoa, worms, etc.), Dactylogyrus Gill Flukes Disease Ref. : 000060

Helminthose (gills)

Causative agent : Dactylogyrus sp.

Occurrence : not specified

eggs  fry  females  in the wild  
 larvae  juveniles  males  in culture

## 9.16. FAO aquaculture production data for *Pangasius hypophthalmus*

Country (Area)		1984	1985	1986	1987	1988	1989	1990
		1991	1992	1993	1994	1995	1996	1997
		1998	1999	2000	2001			
<b>Singapore (4)</b>	(t)	0	0	0	0	0	0	0
	(US\$'000)	0	0	0	0	0	0	0
	(t)	0	0	0	0	0	0	0
	(US\$'000)	0	0	0	0	0	0	0
	(t)	0	20	0	0			
	(US\$'000)	0	71	0	0			
<b>Thailand (4)</b>	(t)	8,174	13,786	13,786	13,786	20,353	13,786	13,786
	(US\$'000)	3,712	4,839	4,620	4,839	8,063	4,839	6,262
	(t)	14,518	14,183	11,990	13,189	12,000	10,300	6,860
	(US\$'000)	7,112	7,779	6,028	6,676	6,228	5,914	3,611
	(t)	11,200	11,339	13,231	7,740			
	(US\$'000)	4,609	5,955	6,922	4,257			
	(mt)	8,174	13,786	12,574	11,822	20,353	13,539	13,340
<b>Total: 2</b>	(US\$'000)	3,712	4,839	4,620	4,594	8,063	4,852	6,262
	(mt)	14,518	14,183	11,990	13,189	12,000	10,300	6,860
	(US\$'000)	7,112	7,779	6,028	6,676	6,228	5,914	3,611
	(mt)	11,200	11,359	13,231	7,740			
	(US\$'000)	4,609	6,026	6,922	4,257			

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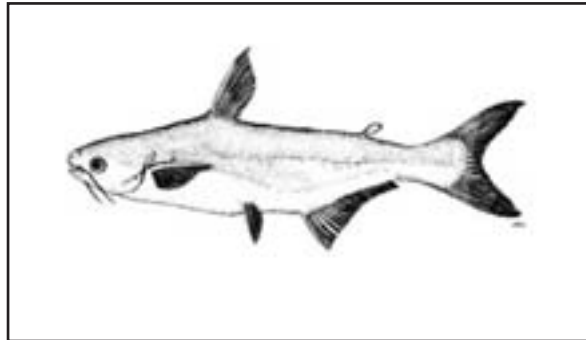
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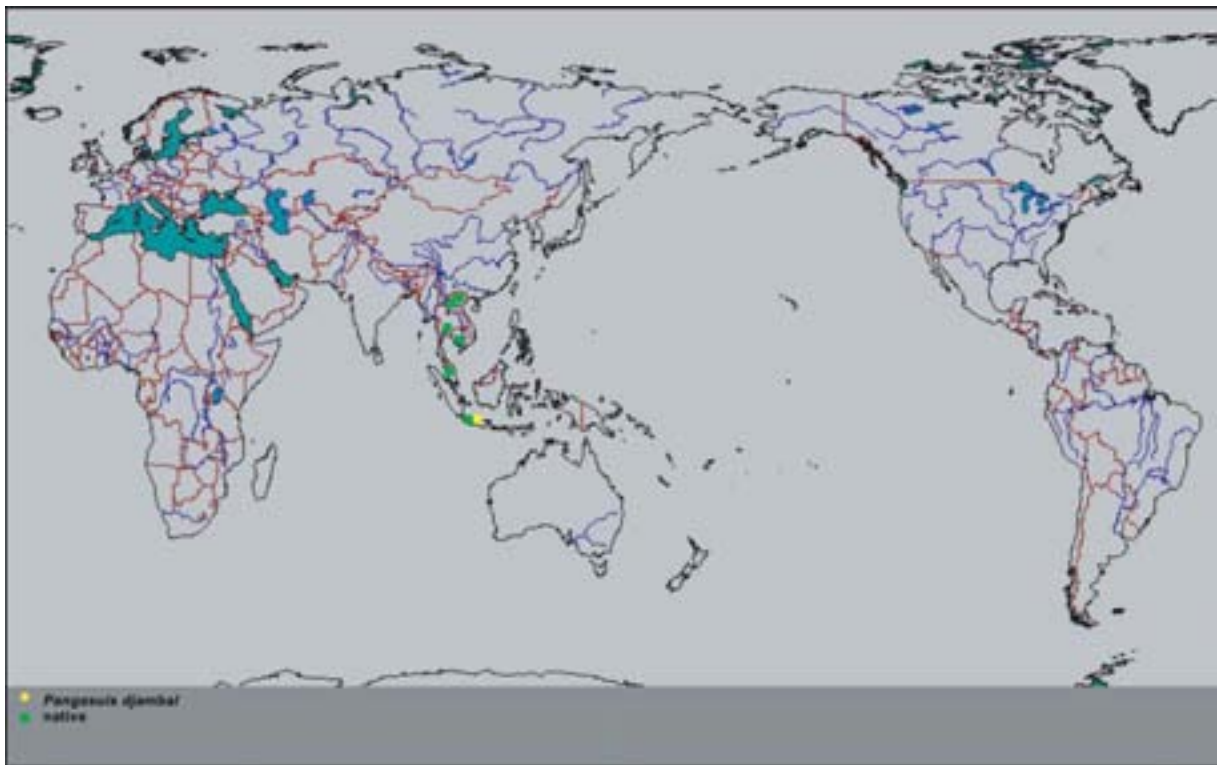
# PANGASIUUS DJAMBAL

(Bleeker, 1846)

ត្រី ត្រា



Picture by [FAO](#)





## 10.1. Summary information on the family Pangasiidae

Family	: Pangasiidae (Shark catfishes)	
Order	: Siluriformes	MainRef. : 007463
Class	: Actino pterygii (ray-finned fishes)	FamCode : 134
Number of genera	2	:
Number of species	: 21	
Occurs in	: O Marine	
	☑ Brackish	
	☑ Freshwater	
Aquarium fishes	: some	
First fossil record	:	Tertiary Ref. : 004830
Species currently in FishBase	: Genera: 5 Species: 30 (Including subspecies)	Complete : Yes

### Remarks:

Distribution: southern Asia (Pakistan to Borneo). Barbels usually two pairs: 1 pair of chin barbels. No nasal barbels. Compressed body. With small adipose fin, separate from caudal fin. Dorsal fin close to head region; 1 or 2 spines, 5-7 soft rays. Anal fin 26-46 rays. Vertebrae 39-52. Maximum length about 3 m. Maximum weight 300 kg (*Pangasius gigas*).

Etymology: The Vietnamese name of a fish

## 10.2. Information on the genus *Pangasius* and its synonyms

After Eschmeyer, March 2003 (Ref. 46206)

<b>Neopangasius</b>	Status: synonym	Gender: masculine
Popta, 1904, p. 180, CAS Ref: 3547		
Type by monotypy.		
Type species	: <i>Neopangasius nieuwenhuisii</i>	Popta, 1904
Current genus	: <i>Pangasius</i>	
<b>Pangasianodon</b>	Status: valid	Gender: masculine
Chevey, 1931, p. 538, CAS Ref: 830		
Type by monotypy.		
Type species	: <i>Pangasianodon gigas</i>	Chevey, 1931
Current genus	: <i>Pangasius</i>	
<b>Pangasius</b>	Status: valid	Gender: masculine
Valenciennes in Cuvier & Valenciennes, 1840, p. 45, CAS Ref: 1008		
Type by monotypy.		
Type species	: <i>Pangasius buchanani</i>	Valenciennes, 1840
Current genus	: <i>Pangasius</i>	
<b>Pseudolais</b>	Status: synonym	Gender: feminine
Vaillant, 1902, p. 51, CAS Ref: 4490		
Type by monotypy.		
Type species	: <i>Pseudolais tetranema</i>	Vaillant, 1902
Current genus	: <i>Pangasius</i>	
<b>Pseudopangasius</b>	Status: synonym	Gender: masculine
Bleeker, 1862, p. 399, CAS Ref: 391		
Type by original designation (also monotypic).		
Type species	: <i>Pangasius polyuranodon</i>	Bleeker, 1852
Current genus	: <i>Pangasius</i>	



## 10.5. Common names for *Pangasius djambal*

Name	Language	Country	Ref.
Trey pra	Khmer	Cambodia	012693

## 10.6. Distribution of *Pangasius djambal*

Asia : Mekong Basin (Ref. 12693); also from Malaysia and Indonesia. MainRef.: 007432  
 Status of threat : NL.

Country	Status	Ref.
<b>Cambodia</b>	native	012693
Known from the Mekong Basin (Ref. 37770). Downstream migration occurs over an eight month period, mainly during June-July while upstream migration takes place mainly during December-February (Ref. 37770). Small juveniles (2-4 cm) have been encountered from Kratie to Kompong Cham from May to November (Ref. 37770).		
<b>Indonesia</b>	native	007432
Reported from Batavia, Krawang, Tjikao, and Parongkalong on the island of Java. Also known from Borneo.		
<b>Lao People's Dem. Rep.</b>	native	030857
Known from the Mekong Basin. Migrates up stream from May, when the water level rises, until August (Ref.37770). Undertakes downstream migration in Savannakhet during October-November (Ref. 37770). Small juveniles (2-4 cm) have been encountered at Savannakhet from May to November (Ref. 37770).		
<b>Malaysia</b>	native	012693
<b>Thailand</b>	native	012693
Found in the Mun River of the Middle Mekong in Northeast Thailand. Migrates upstream from May, when the water level rises, until August (Ref. 37770). Undertakes downstream migration in Loei during October-November (Ref. 37770). Small juveniles (2-4 cm) have been encountered at Nakhon Phanom from May to November (Ref. 37770).		
<b>Viet Nam</b>	native	037770
Known from the Mekong.		

**Total native = 6 Total introduced = 0**

## 10.7. Summary information (no. of records) available for *Pangasius djambal*

Level : species in general	StockCode: 07432		MainRef.: 007432		
Asia : Mekong Basin (Ref. 12693) also from Malaysia and Indonesia.					
Ecology	1	Max. sizes	0	Strains	0
Food items	3	FAO catches	15502	Diseases	0
Food consumption	0	Genetics	0	Ciguatera	0
Diet composition	0	Allele frequency	0	Ecotoxicology	0
Ration	0	Heritability	0	Metabolism	0
Predators	0	Reproduction	0	Gill area	0
Morphology	1	Spawning	1	Swimming type	0
Processing	0	Eggs	0	Swimming speed	0
Growth/mortality	0	Egg dev't.	0	Vision	0
Maturity	0	Larvae	0	Brains	0
Recruitment	0	Larval dynamics	0	Introductions	0
L/W relat.	0	Aquaculture	0	Occurrence	1

## 10.8. Morphology of *Pangasius djambal*

Level : species in general

StockCode : 014041

Main Ref.: 012693

### Diagnostic Characters

Dorsum dull grey; blunt snout lacking broad white band around muzzle; 24-35 gill rakers in the first arch (Ref. 12693).

### Descriptive Characters

Operculum present: No

### Meristic Characters

Gill rakers	on lower limb	total : 24-35
Vertebrae	preanal	-
Dorsal fins		
Adipose fin	: present	
Caudal fin		
Shape of fin	: forked	
Attributes	: more or less	normal
Paired fins		
Pectoral attributes	: more or less	normal
Pelvics attributes	: more or less	normal
position	: abdominal	behind origin of D1
Body proportions	(based on picture )	

## 10.9. General information on the reproduction of *Pangasius djambal*

### Locality : Mekong Mainstream

Stockcode: 014041

Season (% of mature females; 111= presence of mature females):

Main Ref.: 037770

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

DataRef.: 039630

111 111 111 111

**Comment** : Based on the presence of eggs in the abdomen from March to August, mostly from April to July.

## 10.10. Ecology of *Pangasius djambal*

Level : species in general

StockCode: 014041, 014145

Main Ref.: 012693

### Habitats

Streams : Yes

Lake: No

Cave: No

Estuaries/lagoons/brackish seas: No

Intertidal : No

Soft : No

Rocky : No

Mangroves/marches/swamps: No

Marine : No

Oceanic : No

Neritic : No

Coral reefs: No

Tropicalsoft bottom : No

Hard bottom: No

Seagrass beds: No

Macrophyte: No

### Feeding

Feeding Type : plants/detritus+animals (troph. 2.2 -2.79 and up)

Ref: 012693

### Trophic level(s):

#### Original sample

#### Unfished population

#### Remarks

Estimation method

Troph s.e

troph s.e

From indiv. food item:

2.7

0.26

Trophic level estimate

## 10.11. Food items for *Pangasius djambal*

Level: species in general

StockCode: 014041

Food item

Ref.

**plants**

other plants    terrestrial    plants unidentified    unidentified    012693

**zoobenthos**

insects insects unidentified    unidentified    012693  
worms n.a./other annelids    unidentified    unidentified    012693

## 10.12. References used for *Pangasius djambal*

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**BIOLOGICAL REVIEWS OF IMPORTANT  
CAMBODIAN FISH SPECIES, BASE ON  
FISH BASE 2004.**

**Volume 1:** *Channa striata*, *Channa micropeltes*;  
*Barbonymus altus*; *Barbonymus gonionotus*;  
*Cyclocheilichthys apogon*; *Cyclocheilichthys*  
*enoplos*; *Henicorhynchus lineatus*; *Henicorhynchus*  
*siamensis*; *Pangasius hypophthalmus*; *Pangasius*  
*djambal*

This document is a review of all the information published worldwide about ten fish species that contribute significantly to Cambodian fishery resources.

Snakeheads	<i>Channa striata</i> , <i>C. micropeltes</i> ;
Cyprinids	<i>Barbonymus altus</i> ; <i>Barbonymus gonionotus</i> ; <i>Cyclocheilichthys apogon</i> ; <i>Cyclocheilichthys enoplos</i> ; <i>Henicorhynchus lineatus</i> ; <i>Henicorhynchus siamensis</i> ;
Catfishes	<i>Pangasius hypophthalmus</i> ; <i>Pangasius djambal</i> .

These ten reviews results from the extraction and the editing by the authors of the information available in FishBase 2004, a biological database on fishes developed by the WorldFish Center in collaboration with the FAO.

In each review summary information if given on the family, the genus and the species. For each species are detailed synonyms, common names and misidentifications; morphology; maximum weight/length/age; distribution and ecology. Whenever available, introductions, diseases and FAO production data are also detailed as well as the biological features of the species (length-weight relationships, growth and mortality, diet; reproduction, genetic information). Each review is concluded by a comprehensive list of bibliographic references.

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