

# Updated checklist of freshwater and brackish fishes of Phetchaburi Basin, Northwest Gulf of Thailand Drainages

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## ABSTRACT

The present paper reports on an updated checklist of freshwater and brackish fishes of Phetchaburi Basin, Northwest Gulf of Thailand Drainages, resulting from a study carried out in the period April 2012 – September 2013. All the species encountered in this region belonging to 11 orders, 41 families and 126 species, are listed. In particular, 39 species are new records for Phetchaburi Basin: *Parachela siamensis* (Günther, 1868); *Barbonymus schwanefeldii* (Bleeker, 1854); *Puntioplites proctozystron* (Bleeker, 1865); *Acanthopsoides gracilentus* (Smith, 1945); *Homaloptera smithi* Hora, 1932; *Mystus mysticetus* Roberts, 1992; *Plotosus canius* Hamilton, 1822; *Macrornathus semiocellatus* Roberts, 1986; *M. siamensis* (Günther, 1861); *Doryichthys boaja* (Bleeker, 1850); *Ichthyocampus carce* (Hamilton, 1822); *Hyporhamphus limbatus* (Valenciennes, 1846); *Dermogenys siamensis* Fowler, 1934; *Oryzias javanicus* (Bleeker, 1854); *O. minutillus* Smith, 1945; *Phenacostethus smithi* Myers, 1928; *Poecilia latipinna* (Lesueur, 1821); *Ambassis vachellii* Richardson, 1846; *Oreochromis mossambicus* (Peters, 1852); *Sillago sihama* (Forsskål, 1775); *Scatophagus argus* (Linnaeus, 1766); *Gerres filamentosus* Cuvier, 1829; *Ellochelon vaigiensis* (Quoy et Gaimard 1825); *Moolgarda cunnesius* (Valenciennes 1836); *Terapon jarbua* (Forsskål, 1775); *Lates calcarifer* (Bloch, 1790); *Lutjanus monostigma* (Cuvier, 1828); *Siganus javus* (Linnaeus, 1766); *Butis butis* (Hamilton, 1822); *B. koilomatodon* (Bleeker, 1849); *Pseudogobius javanicus* (Bleeker, 1856); *Gobiopterus chuno* (Hamilton, 1822); *Pseudapocryptes elongatus* (Cuvier, 1816); *Acentrogobius kranjiensis* (Herre, 1940); *Rhinogobius* sp.; *Istiblennius lineatus* (Valenciennes, 1836); *Trichopsis pumila* (Arnold, 1936); *Trichopodus pectoralis* Regan, 1910; *Cynoglossus puncticeps* (Richardson, 1846).

## KEY WORDS

Freshwater fishes; brackish fishes; Phetchaburi Basin; Gulf of Thailand.

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## INTRODUCTION

The Phetchaburi Basin originates at Tanow Sri mountain range. This river system runs through Phetchaburi Province, West Thailand, and flows into the Upper Gulf of Thailand at Ban Lam District, the Phetchaburi Estuary, with a total length

of about 90 kilometers. Phetchaburi Basin is a very important river basin, but in some areas of Phetchaburi River, especially the lower mainstream under the Kaeng Krachan Reservoir and the estuary of Phetchaburi River, very little is known about fish populations. At the present moment available data are extremely scarce and fragmented, marking it

difficult to use them. A survey project aimed at studying freshwater and brackish fishes of Lower Phetchaburi Basin in Phetchaburi Province, West Thailand (see Figs.1–5) was carried out during April 2012–September 2013 (collecting the specimens every 2 month). We separated this area into six regions: 1) small tributary stream in Kaeng Krachan District (transparent rapid waters with an average width of about 5 m, average depth less than 1 m, and sandy bottom); 2) fishing ports of Kaeng Krachan Reservoir; 3) main stream of Phetchaburi River in Ban Lad District; 4) main stream of Phetchaburi River in Meuang Phetchaburi District; 5) main stream of Phetchaburi River in Tha Yang District; 6) mangrove areas and estuary of Phetchaburi River in Ban Lam District.

In particular, we found 39 species of fishes which are new records in this area and are reported for the first time in this paper (for previous reviews, see Fowler, 1935; Yamsongrat, 1965; Banasopit & Wongratana, 1967; Depart of Fisheries, 1969; Wongratana, 1980; Suvatti, 1981; Sukhavisith & Chuenchitpong, 1982; Vanagosoom, 1983; NIFI, 1985; Chantsavang et al., 1989; Monkolprasit et al., 1997; Department of National Parks, Wildlife and

Plant Conservation, 2007; Kunlapapuk et al., 2012): *Parachela siamensis*, *Barbonymus schwanefeldii*, *Puntioplites proctozystron*, *Acanthopsoides gracilentus*, *Homaloptera smithi*, *Mystus mysticetus*, *Plotosus canius*, *Macragnathus semicellatus*, *M. siamensis*, *Doryichthys boaja*, *Ichthyocampus carce*, *Hyporhamphus limbatus*, *Dermogenys siamensis*, *Oryzias javanicus*, *O. minutillus*, *Phenacostethus smithi*, *Poecilia latipinna*, *Ambassis vachellii*, *Oreochromis mossambicus*, *Sillago sihama*, *Scatophagus argus*, *Gerres filamentosus*, *Ellochelon vaigiensis*, *Moolgarda cunnesius*, *Terapon jarbua*, *Lates calcarifer*, *Lutjanus monostigma*, *Siganus javus*, *Butis butis*, *B. koilomatodon*, *Pseudogobius javanicus*, *Gobiopterus chuno*, *Pseudapocryptes elongatus*, *Acentrogobius kranjiensis*, *Rhinogobius* sp.; *Istiblennius lineatus*, *Trichopsis pumila*, *Trichopodus pectoralis*, *Cynoglossus puncticeps*.

Currently, all specimens used in these studies are deposited into the Reference Collection of Aquatic ecology, Silpakorn University, Phetchaburi IT campus (RAESUP).

ABBREVIATIONS. RAESUP = Reference Collection of Aquatic ecology, Silpakorn University, Phetchaburi IT campus. \*\*\* = newly recorded species; \*\* = species recorded in past works and observed by the authors; \* = species recorded in past works but not observed by the authors.

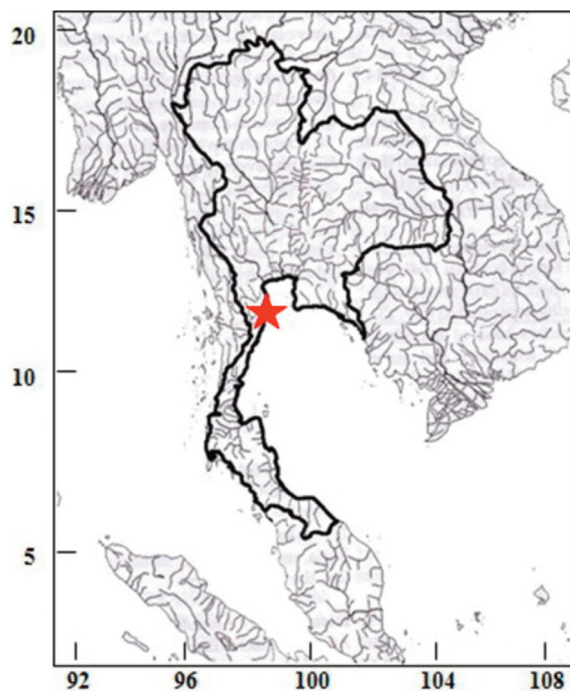


Figure 1. Study area: Phetchaburi Basin, Northwest Gulf of Thailand Drainages.

## RESULTS

### *Checklist of freshwater and brackish fishes of Phetchaburi Basin, Northwest Gulf of Thailand Drainages*

According to known literature (see above) and present study, freshwater and brackish fishes in Phetchaburi Basin in Phetchaburi Province belong to 11 orders, 41 families and 126 species. In particular, 39 species are new records for Phetchaburi Basin.

Order OSTEGLLOSSIFORMES Berg, 1940  
Family NOTOPTERIDAE Bleeker, 1859

*Notopterus notopterus* (Pallas, 1769)\*\*

Order CLUPEIFORMES Bleeker, 1959  
Family CLUPEIDAE Cuvier, 1817

*Clupeichthys goniognathus* Bleeker, 1855\*\*  
*Hilsa kelee* (Cuvier, 1829)\*

Order CYPRINIFORMES Bleeker, 1859  
 Family CYPRINIDAE Swainson, 1839

*Barbonymus altus* (Günther, 1868)\*  
*Barbonymus gonionotus* (Bleeker, 1849)\*\*  
*Barbonymus schwanefeldii* (Bleeker, 1854)\*\*  
*Barbodes rhombeus* (Kottelat, 2000)\*  
*Carassius auratus* (Linnaeus, 1758)\*  
*Cirrhinus molitorella* (Valenciennes, 1844)\*\*  
*Cirrhinus siamensis* (Sauvage, 1881)\*\*  
*Cyclocheilichthys apogon* (Valenciennes, 1842)\*\*  
*Cyclocheilichthys armatus* (Valenciennes, 1842)\*\*  
*Cycloceilos enoplos* (Bleeker, 1849)\*  
*Cyclocheilichthys repasson* (Bleeker, 1853)  
*Cyprinus carpio* Linnaeus, 1758\*  
*Devario regina* (Fowler, 1934)\*  
*Esomus metallicus* Ahl, 1924\*\*  
*Hampala macrolepidota* Kuhl et van Hasselt, 1823\*\*  
*Hypsibarbus wetmorei* (Smith, 1931)\*  
*Labeo rohita* (Hamilton, 1822)\*  
*Labiobarbus siamensis* (Sauvage, 1881)\*\*  
*Lobocheilos rhabdoura* (Fowler, 1934)\*

*Labeo chrysophekadion* (Bleeker, 1849)\*  
*Mystacoleucus marginatus* (Valenciennes, 1842)\*\*  
*Neolissochilus stracheyi* (Day, 1871)\*  
*Osteochilus vittatus* (Valenciennes, 1842)\*\*  
*Osteochilus waandersii* (Bleeker, 1853)\*  
*Parachela maculicauda* (Smith, 1934)\*  
*Parachela siamensis* (Günther, 1868)\*\*  
*Puntioplites proctozystron* (Bleeker, 1865)\*\*  
*Puntius brevis* (Bleeker, 1849)\*\*  
*Puntigrus partipentazona* (Fowler, 1934)\*\*  
*Rasbora borapetensis* Smith, 1934\*\*  
*Rasbora myersi* Brittan, 1954\*  
*Rasbora sumatrana* (Bleeker, 1852)\*  
*Rasbora tornieri* Ahl, 1922\*\*  
*Rasbora trilineata* Steindachner, 1870\*  
*Systemus orphoides* (Valenciennes, 1842)\*\*  
*Tor tambroides* (Bleeker, 1854)\*

Family BALITORIDAE Swainson, 1839

*Homaloptera smithi* Hora, 1932\*\*  
*Nemacheilus masyae* Smith, 1933\*  
*Schistura poculi* (Smith, 1945)\*  
*Schistura schultzi* (Smith, 1945)\*  
*Schistura kengtungensis* (Fowler, 1936)\*



Figure 2. Small tributary stream in Kaeng Krachan District. Figures 3, 4. Main stream of Phetchaburi River in Tha Yang District (Fig. 3) and, (Fig. 4) in Meuang Phetchaburi District. Figure 5. Mangrove areas and estuary of Phetchaburi River.



Family COBITIDAE Swainson, 1838

*Acantopsis choirorhynchos* (Bleeker, 1854)\*  
*Acanthopsoides gracilentus* (Smith, 1945)\*\*\*  
*Paracanthocobitis zonalternans* (Blyth, 1860)\*  
*Syncrossus helodes* (Sauvage, 1876)\*  
*Lepidocephalichthys bermorei* (Blyth, 1860)\*  
*Lepidocephalichthys hasselti* (Valenciennes, 1846)\*\*  
*Pangio anguillaris* (Vaillant, 1902)\*

Order SILURIFORMES Cuvier, 181  
 Family AMBLYCIPITIDAE Day, 1873

*Amblyceps variegatum* Ng et Kottelat 2000\*

Family BAGRIDAE Bleeker, 1858

*Batasio tengana* (Hamilton, 1822)\*  
*Hemibagrus nemurus* (Valenciennes, 1840)\*\*  
*Hemibagrus wyckioides* (Fang et Chau, 1949)\*\*  
*Mystus gulio* (Hamilton, 1822)\*\*  
*Mystus nigriceps* (Valenciennes, 1840)\*  
*Mystus mysticetus* Roberts, 1992\*\*\*  
*Mystus vittatus* (Bloch, 1794)\*  
*Pseudomystus siamensis* (Regan, 1913)\*\*

Family CLARIIDAE Bonaparte, 1845

*Clarias batrachus* (Linnaeus, 1758)\*\*  
*Clarias macrocephalus* Günther, 1864\*

Family PANGASIIDAE Bleeker, 1858

*Laides hexanema* (Bleeker, 1852)\*  
*Pangasianodon hypophthalmus* (Sauvage, 1878)\*

Family PLOTOSIDAE Bleeker, 1858

*Plotosus canius* Hamilton, 1822\*\*\*

Family SILURIDAE Rafinesque, 1815

*Ompok siluroides* Lacepède 1803

Order SYNBRANCHIFORMES Nelson, 1994  
 Family MASTACEMBELIDAE Swainson, 1839

*Macrogathus semiocellatus* Roberts, 1986\*\*\*  
*Macrogathus siamensis* (Günther, 1861)\*\*\*  
*Mastacembelus armatus* (Lacepède, 1800)\*  
*Mastacembelus favus* Hora, 1924\*\*

Family SYNBRANCHIDAE Bonaparte, 1835

*Monopterus albus* (Zuiew, 1793)\*\*

Order BELONIFORMES L.S. Berg, 1937  
 Family BELONIDAE Bonaparte, 1835

*Xenentodon cancila* (Hamilton, 1822)\*\*

Family ADRIANICHTHYIDAE Weber, 1913

*Oryzias javanicus* (Bleeker, 1854)\*\*\*  
*Oryzias minutillus* Smith, 1945\*\*\*

Family HEMIRAMPHIDAE Gill, 1859

*Hyporhamphus limbatus* (Valenciennes, 1846)\*\*\*

Order SYNGNATHIFORMES Berg, 1940  
 Family SYNGNATHIDAE Bonaparte, 1831

*Doryichthys boaja* (Bleeker, 1850)\*\*\*  
*Ichthyocampus carce* (Hamilton, 1822)\*\*\*  
*Dermogenys siamensis* Fowler, 1934\*\*\*

Order ATHERINIFORMES D.E. Rosen, 1966  
 Family PHALLOSTETHIDAE Regan, 1916

*Phenacostethus smithi* Myers, 1928\*\*\*  
*Neostethus lankesteri* Regan, 1916\*\*

Order CYPRINODONTIFORMES L.S. Berg, 1940  
 Family POECILIIDAE Bloch et Schneider, 1801

*Poecilia latipinna* (Lesueur, 1821)\*\*\*

Order PERCIFORMES Bleeker, 1859  
Family AMBASSIDAE Klunzinger, 1870

*Ambassis vachellii* Richardson, 1846\*\*\*  
*Parambassis siamensis* (Fowler, 1937)\*\*  
*Parambassis ranga* (Hamilton, 1822)\*

Family NANDIDAE Bleeker, 1852

*Nandus nebulosus* (Gray, 1835)\*  
*Pristolepis fasciata* (Bleeker, 1851)\*\*

Family TOXOTIDAE Cuvier, 1816

*Toxotes jaculatrix* (Pallas, 1767)\*

Family CICHLIDAE Heckel, 1840

*Oreochromis niloticus* (Linnaeus, 1758)\*\*  
*Oreochromis mossambicus* (Peters, 1852)\*\*\*

Family CARANGIDAE Rafinesque, 1815

*Ulua mentalis* (Cuvier, 1833)\*

Family SILLAGINIDAE Richardson, 1846

*Sillago sihama* (Forsskål, 1775)\*\*\*

Family SCATOPHAGIDAE Gill, 1883

*Scatophagus argus* (Linnaeus, 1766)\*\*\*

Family GERREIDAE Bleeker, 1859

*Gerres filamentosus* Cuvier, 1829\*\*\*

Family MUGILIDAE Cuvier, 1829

*Ellochelon vaigiensis* (Quoy et Gaimard, 1825)\*\*\*  
*Moolgarda cunnesius* (Valenciennes, 1836)\*\*\*

Family TERAPONTIDAE Richardson, 1842

*Terapon jarbua* (Forsskål, 1775)\*\*\*

Family LATIDAE Jordan, 1888

*Lates calcarifer* (Bloch, 1790)\*\*\*

Family LUTJANIDAE Gill, 1861

*Lutjanus monostigma* (Cuvier, 1828)\*\*\*  
*Lutjanus rivulatus* (Cuvier, 1828)\*  
*Pinjalo pinjalo* (Bleeker, 1850)\*  
*Pterocaesio pisang* (Bleeker, 1853)\*  
*Pterocaesio tile* (Cuvier, 1830)\*

Family SCIAENIDAE Cuvier, 1829

*Johnius axillaris* (non Cuvier, 1830)\*  
*Johnius trachycephalus* (Bleeker, 1851)\*

Family SIGANIDAE Woodland (1990)

*Siganus javus* (Linnaeus, 1766)\*\*\*

Family ELEOTRIDAE Bonaparte, 1835

*Butis butis* (Hamilton, 1822)\*\*\*  
*Butis koilomatodon* (Bleeker, 1849)\*\*\*  
*Oxyeleotris marmorata* (Bleeker, 1852)\*\*

Family GOBIIDAE Cuvier, 1816

*Acentrogobius kranjiensis* (Herre, 1940)\*\*\*  
*Gobiopterus chuno* (Hamilton, 1822)\*\*\*  
*Pseudapocryptes elongatus* (Cuvier, 1816)\*\*\*  
*Pseudogobius javanicus* (Bleeker, 1856)\*\*\*  
*Rhinogobius* sp.\*\*\*

Remark. In Thailand, many species of goby of the genus *Rhinogobius* still have unclear identifications. Although further studies are certainly needed, nevertheless we believe this taxon to be different from other *Rhinogobius* species of Thailand.

Family BLENNIIDAE Rafinesque, 1810

*Istiblennius lineatus* (Valenciennes, 1836)\*\*\*

Family OSPHRONEMIDAE van der Hoeven, 1832

*Osphronemus goramy* Lacepède, 1801\*\*

*Trichopsis pumila* (Arnold, 1936)\*\*\*

*Trichopsis vittata* (Cuvier, 1831)\*\*

*Trichopodus trichopterus* (Pallas, 1770)\*\*

*Trichopodus pectoralis* Regan, 1910\*\*\*

Family ANABANTIDAE Bonaparte, 1831

*Anabas testudineus* (Bloch, 1792)\*\*

Family CHANNIDAE Fowler, 1934

*Channa striata* (Bloch, 1793)\*\*

*Channa lucius* (Cuvier, 1831)\*\*

*Channa micropeltes* (Cuvier, 1831)\*\*

*Channa* cf. *gachua* (Hamilton, 1822)\*

Remark. In Thailand, the taxonomic status of this taxon is still unclear, being reported from time to time as *C. gachua* or *C. limbata*.

Order PLEURONECTIFORMES Linnaeus, 1758

Family CYNOGLOSSIDAE Jordan, 1888

*Cynoglossus puncticeps* (Richardson, 1846)\*\*\*

Order TETRAODONTIFORMES L.S. Berg, 1940

Family TETRAODONTIDAE Bonaparte, 1831

*Pao leiurus* (Bleeker, 1850)\*\*

## CONCLUSION

In this work a total of 11 orders, 41 families and 126 species of fishes were recorded from Petchaburi Basin, Northwest Gulf of Thailand Drainages. In particular 39 species are new records for Petchaburi Basin.

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## REFERENCES

- Aartsen Banasopit T. & Wongratana T., 1967. A check list of fishes in the reference collection maintained at the Marine Fisheries Laboratory. Marine Fisheries Laboratory, Division of Research and Investigations, Department of Fisheries, Contribution no. 7, 73 pp.
- Chantsavang B., Chookajorn T. Duangsawasdi S. & Sodsuk P., 1989. Hydrobiological and fishery resource survey in Kang Krachan Reservoir Phetchaburi Province. Technical Paper No. 108. National Inland Fisheries Institute, Bangkok, Bangkok, Thailand, 45 pp.
- Department of Fisheries, 1969. Annual report 1969. Taxonomic Section, Inland Fisheries Division, Department of fisheries, 53 pp.
- Department of National Parks, Wildlife & Plant Conservation, 2007. Management plan of ecosystem of Kaeng Krachan Forest. Department of National Parks, Wildlife and Plant Conservation, pp. 16–21.
- Kunlapapuk S., Kulabong S. & Nonpayom C., 2012. Two new records of freshwater fishes (Cypriniformes, Balitoridae and Atheriniformes, Phallostethidae) from Thailand. Biodiversity Journal, 3: 119–122.
- Monkolprasit S., Sontirat S., Vimollohakarm S. & Songsirikul T., 1997. Checklist of fisher in Thailand. Office of environmental policy and planning, Thailand, 309 pp.
- NIFI, 1985. Freshwater fishes of Thailand in the museum of National Inland Fisheries Institute. Aquatic Environment Research, National Inland Fisheries Institute. Department of Fisheries, Ministry of Agriculture and Cooperative, 75 pp.
- Sukhavisith P. & Chuenchitpong P., 1982. Economic fishes. Research report no. SJ/24/6. Marine Fisheries Laboratory, Division of Research and Investigations, Department of Fisheries, 105 pp.
- Wongratana T., 1980. Systematics of Clupeoid fishes of the Indopacific Region. Ph.D. Thesis, Faculty of Sci, University of London, 432 pp.
- Yamsonrat S., 1965. Material for review of the fishes of the family Carangidae in Thai-water. Thesis for the Bachelor Degree (Fisheries) Kasetsart University, 106 pp.