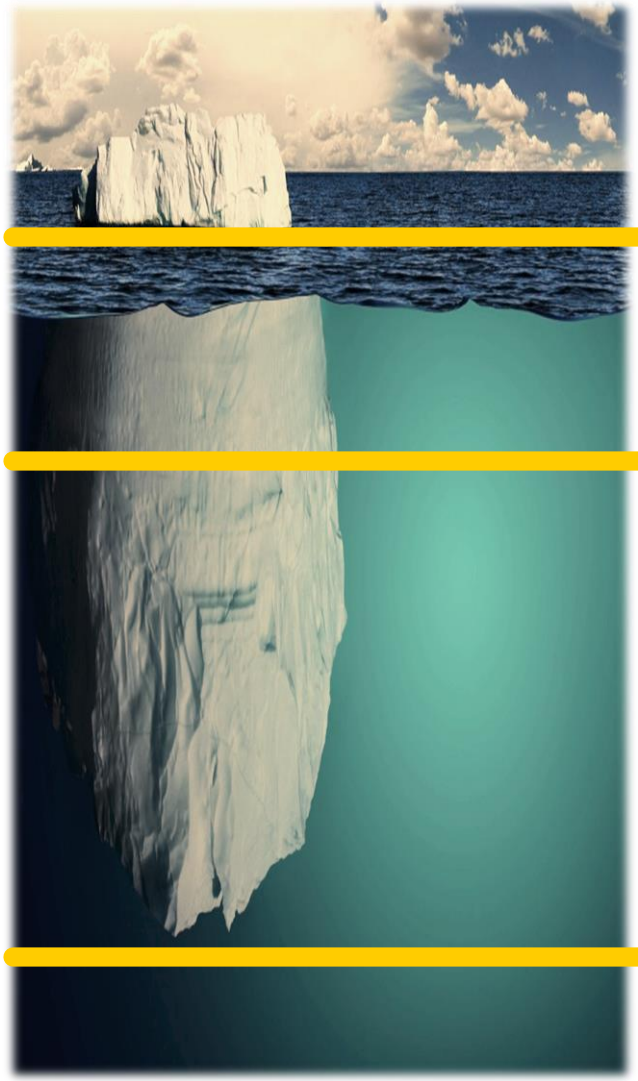
Fishes in ASEAN freshwater ecosystems: Data within FishBase

C.V. Casal, A.G. Torres, E.C. Capuli, K.K. Reyes and R.C. Atanacio

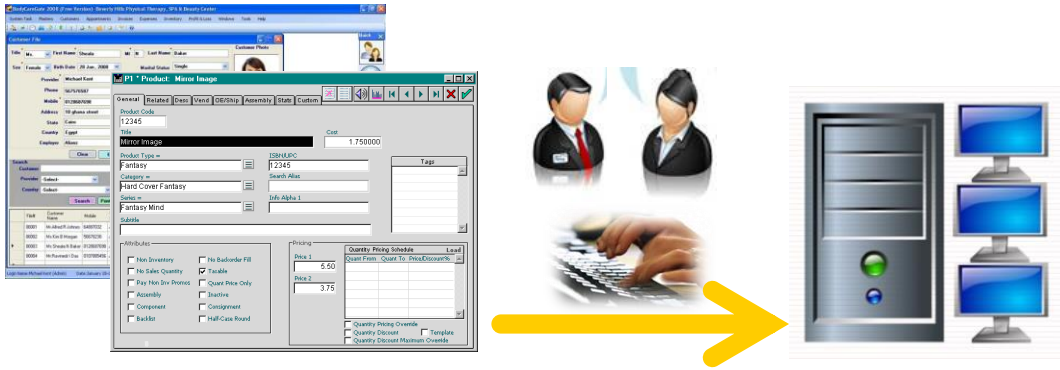
AP-BON Taiwan
12-13 September 2016

Information systems are like icebergs



User interface, Record views, Summaries

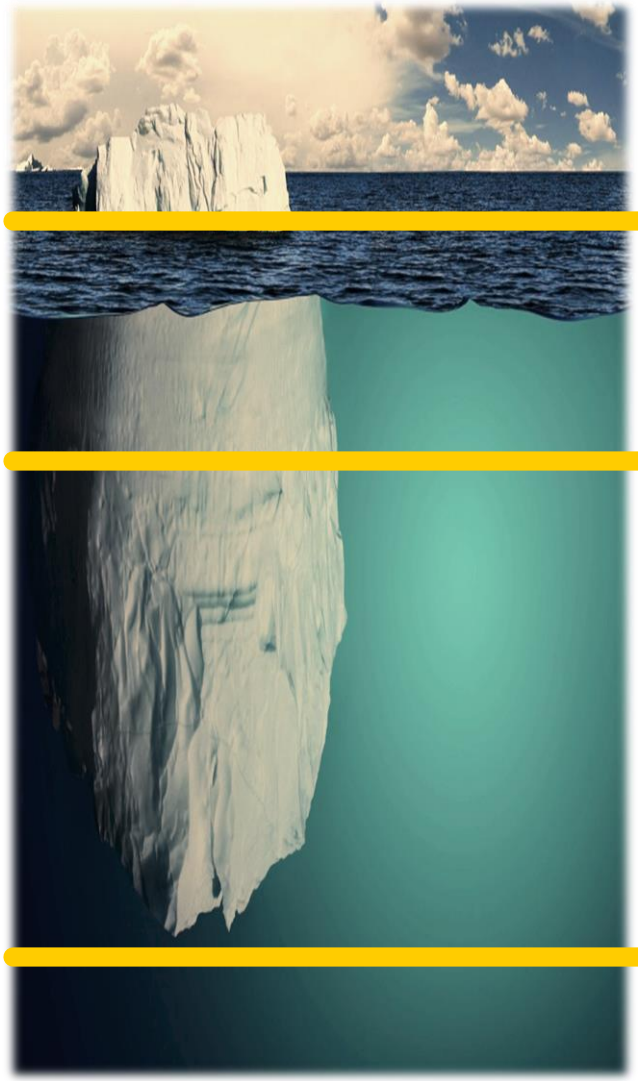
User query processor

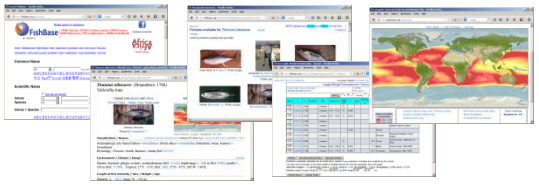


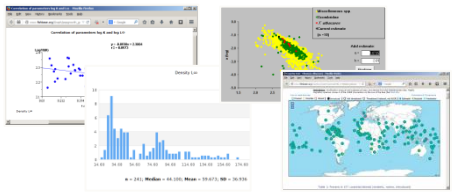
Data entry and management

Slide by Rudy Reyes

The FishBase Information system Iceberg







MySQL

php

JAVA

Microsoft® Access®

Data checking

Error traps

53,000 references used;
~ 10 encoders, >2,250 collaborators

1 production server
10 web servers

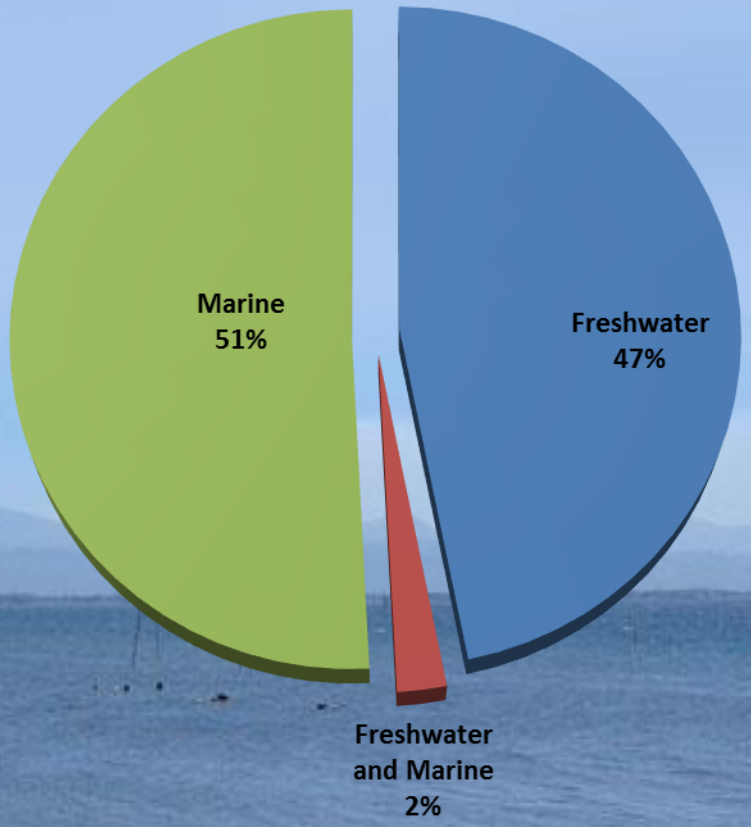
Slide by Rudy Reyes

What is FishBase?

Biodiversity Information System (BIS)
Global Public Good (GPG)

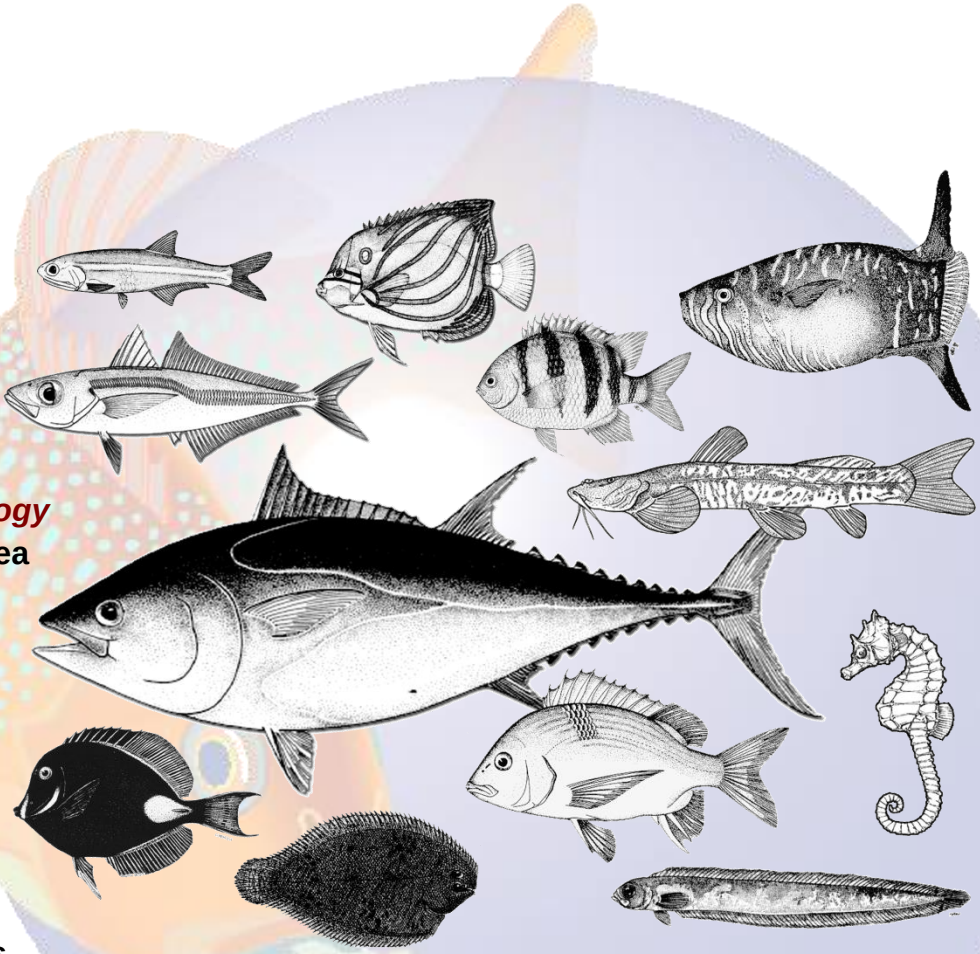
All fishes of the world

33,359 species,
318,500 common names,
57,400 pictures,
53,000 references,
>2,250 collaborators,
700,000 Visits/Month
(ver. 6/2016)



www.fishbase.org

Information in FishBase



Genetics & Aquaculture
Electrophoresis
Heritability • Strains

Morphology & Physiology
Metabolism • Gill area
Vision • Disease
Brain • Abnormalities
Ecotoxicology • Swim mode

Other Tables
Pictures • References
Biblio • Keys • Sounds

Fish as Food
Processing • Ciguatera
FAO catches
Aquaculture (production)

Distribution
Occurrence • FAO areas
Country • Ecosystem
Introductions

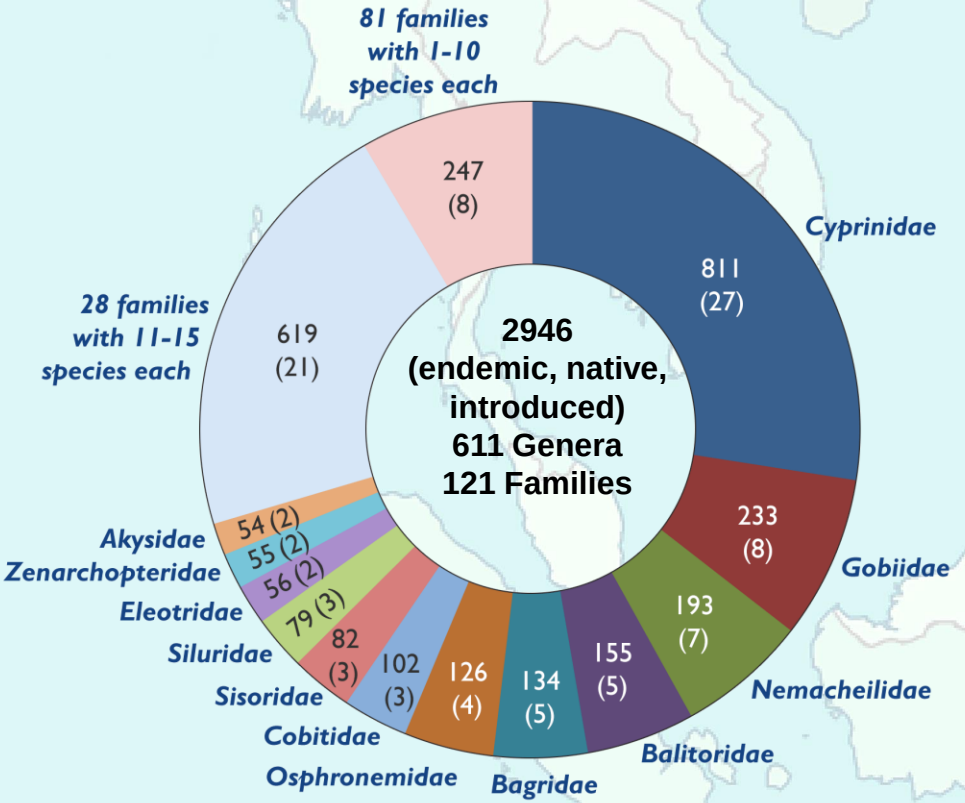
Trophic Ecology
Ecology • Predators
Food items
Diet composition
Food consumption
Ration

Population Dynamics
Growth/Mortality • L/W relations
Maximum sizes • Recruitment
L/L relations • Length frequency

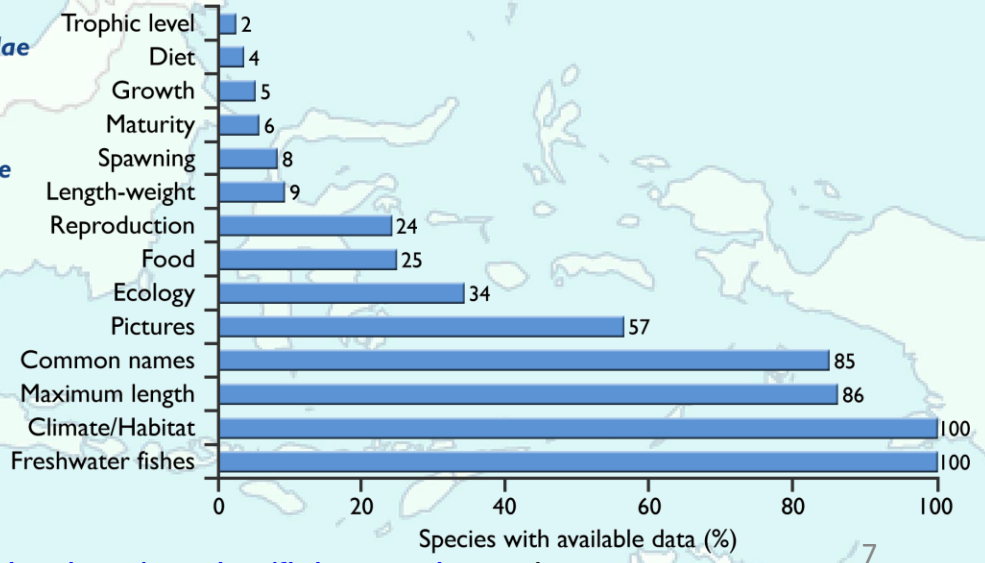
Reproduction & Life History
Maturity • Spawning • Eggs
Larvae • Broodstock • Fry nursery
Larval dynamics • Larval speed

Current status of data for ASEAN freshwater species

Fishes the ASEAN freshwater ecosystems



ASEAN	4.5M sq km	2,875 fw species
World	895M sq km	16,733 fw species
ASEAN	~ 1 fw species in	1,563 sq km
World	~ 1 fw species in	53,573 sq km



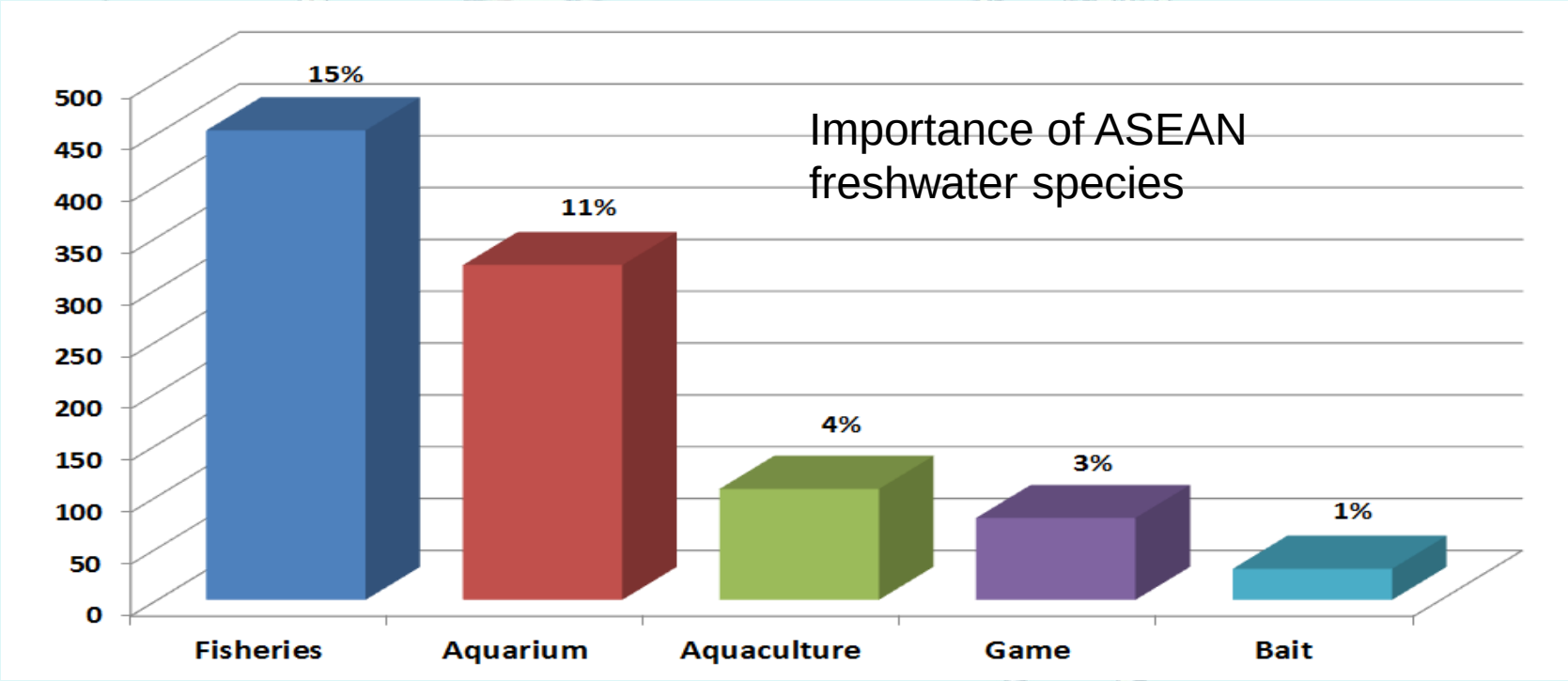
Sources:

- Taxonomic articles and revisions
- Faunal books
- Catalog of Fishes (http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp)

Fishes in ASEAN freshwater ecosystems

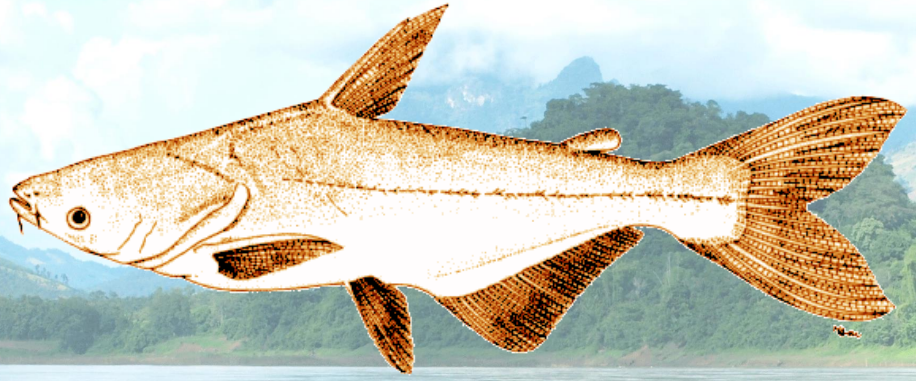
2,946 native, endemic and introduced

- 2,875 endemic and native fishes
- 71 introduced species

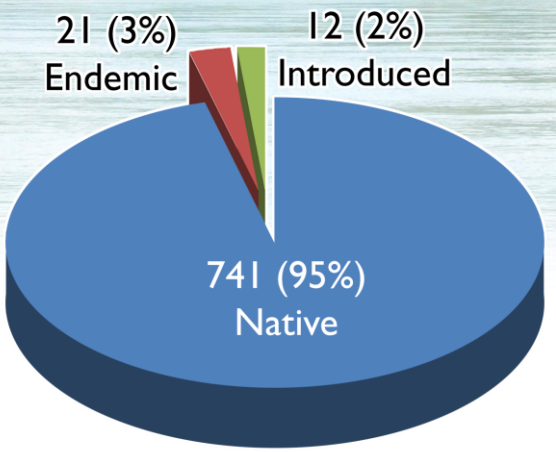


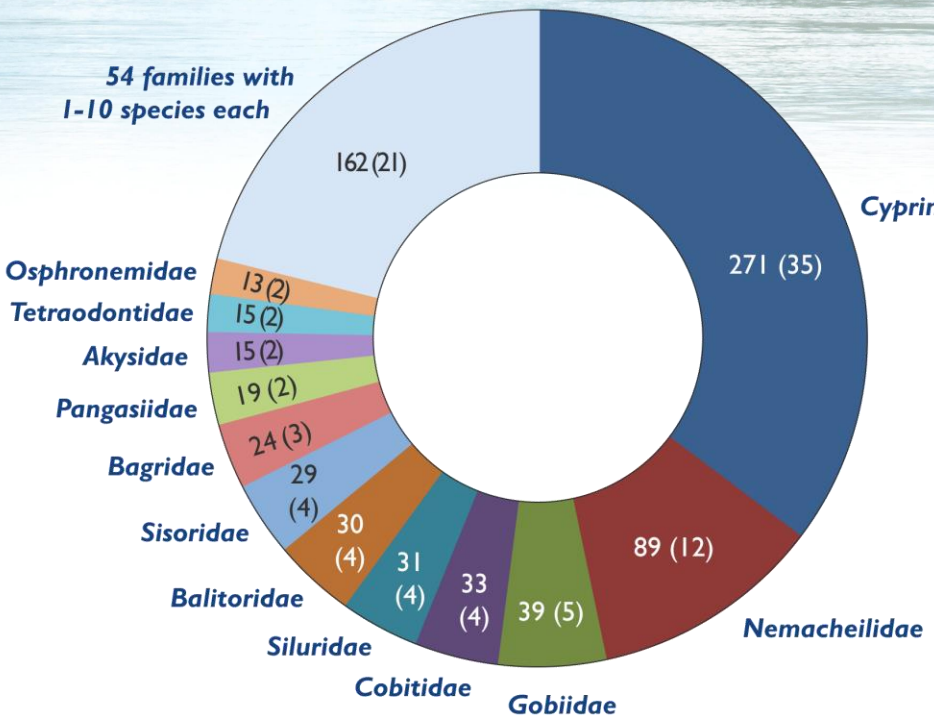
ASEAN: Association of Southeast Asian Nations
Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

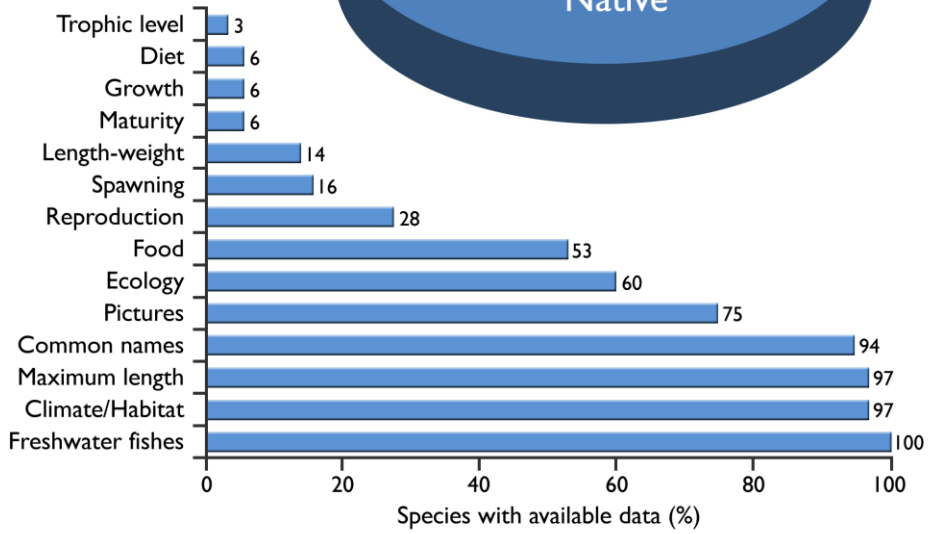
Fishes in the Mekong



Pangasianodon gigas Chevey, 1931
Local name: Pa beuk, Pla ma fai, Cá Hat
Drawing from FAO publication (after Durand, 1949)
Source: FishBase.

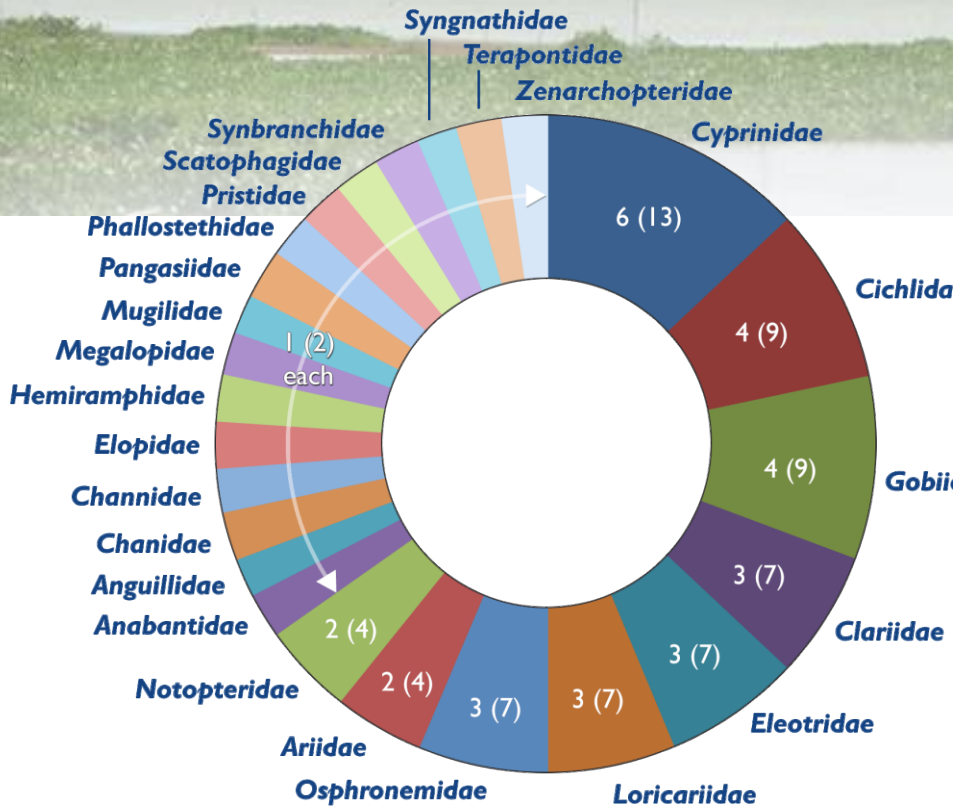


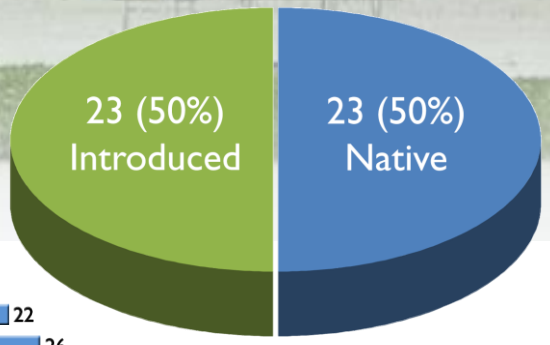


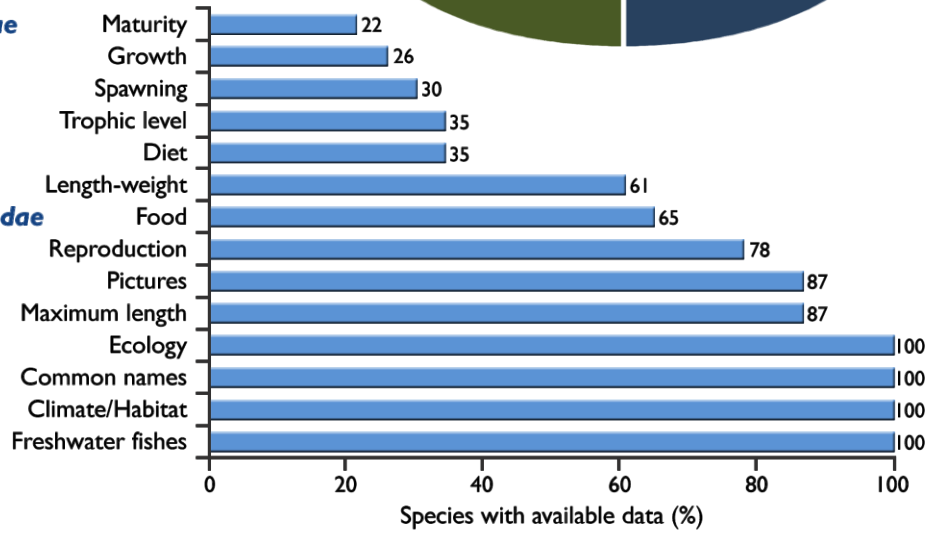


Fishes in Laguna de Bay

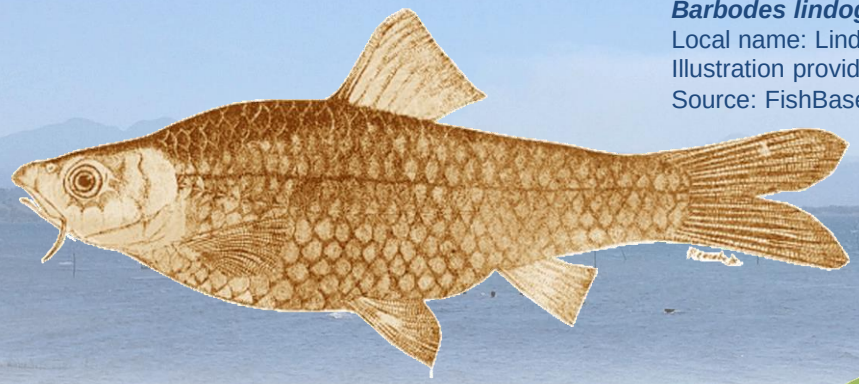
Leiopotherapon plumbeus (Kner, 1864)
Local name: Ayungin
Photo by R.B. Reyes
Source: FishBase



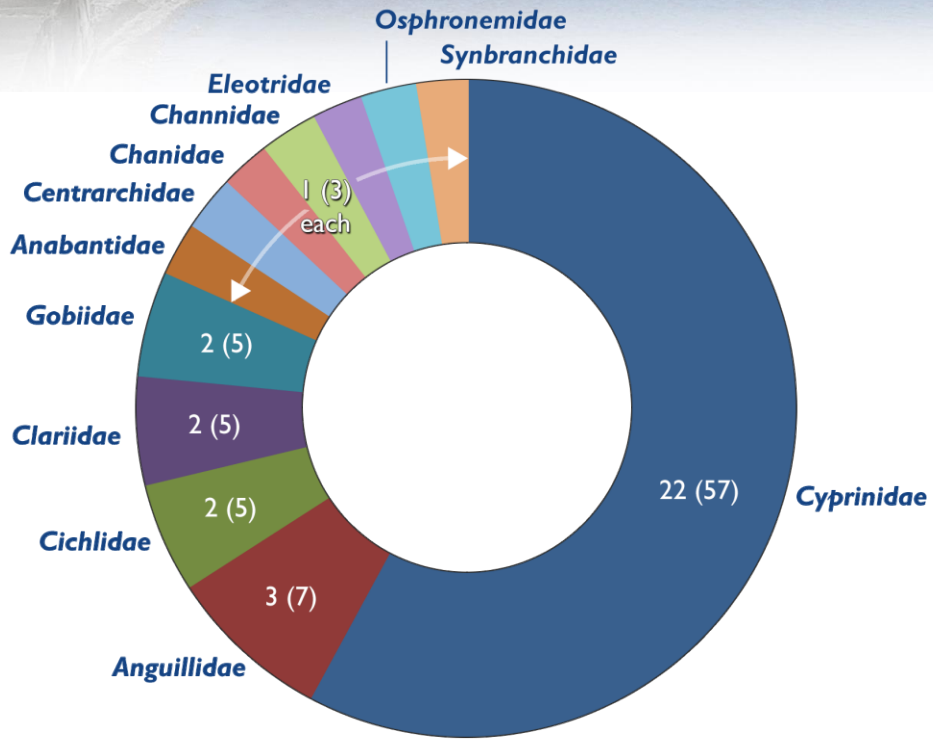


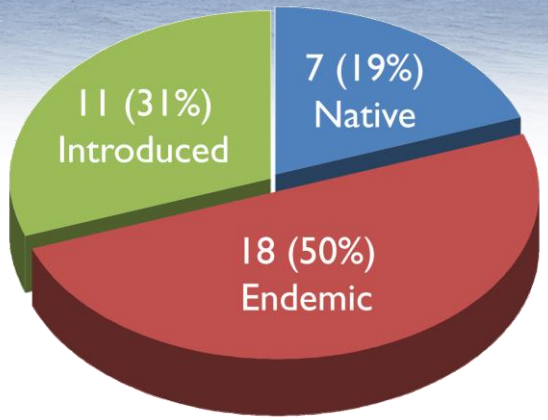


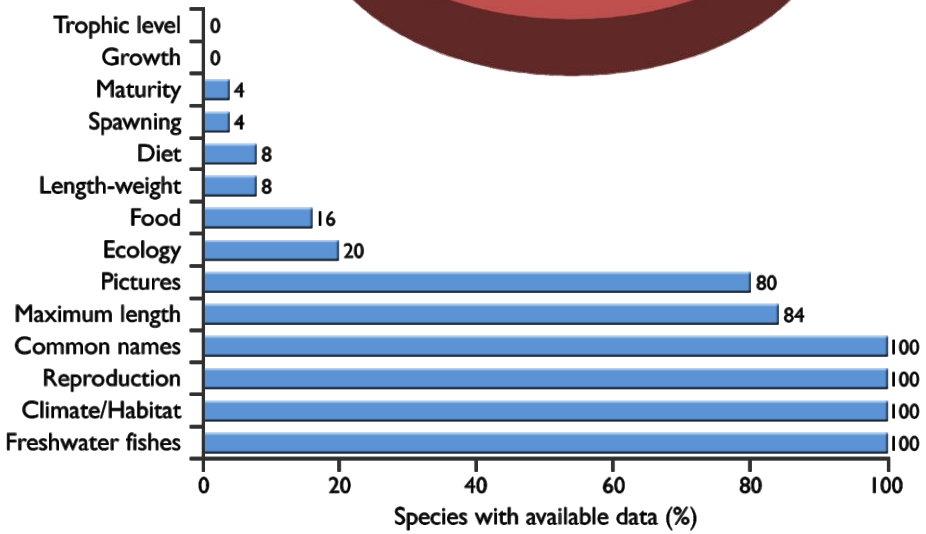
Fishes in Lake Lanao



Barbodes lindog Herre, 1924
Local name: Lindog
Illustration provided by P.T. Escudero
Source: FishBase

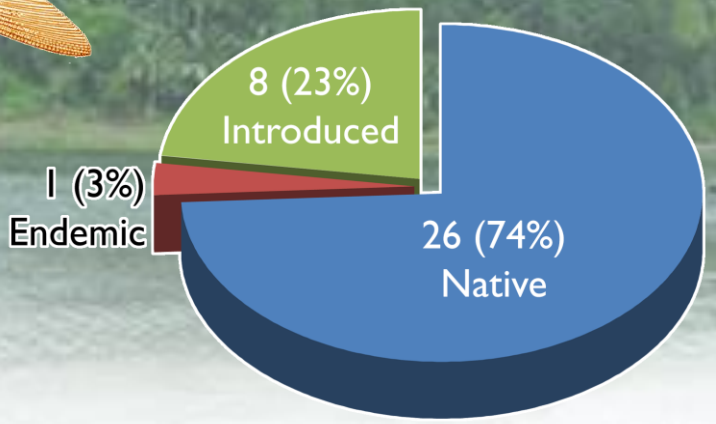


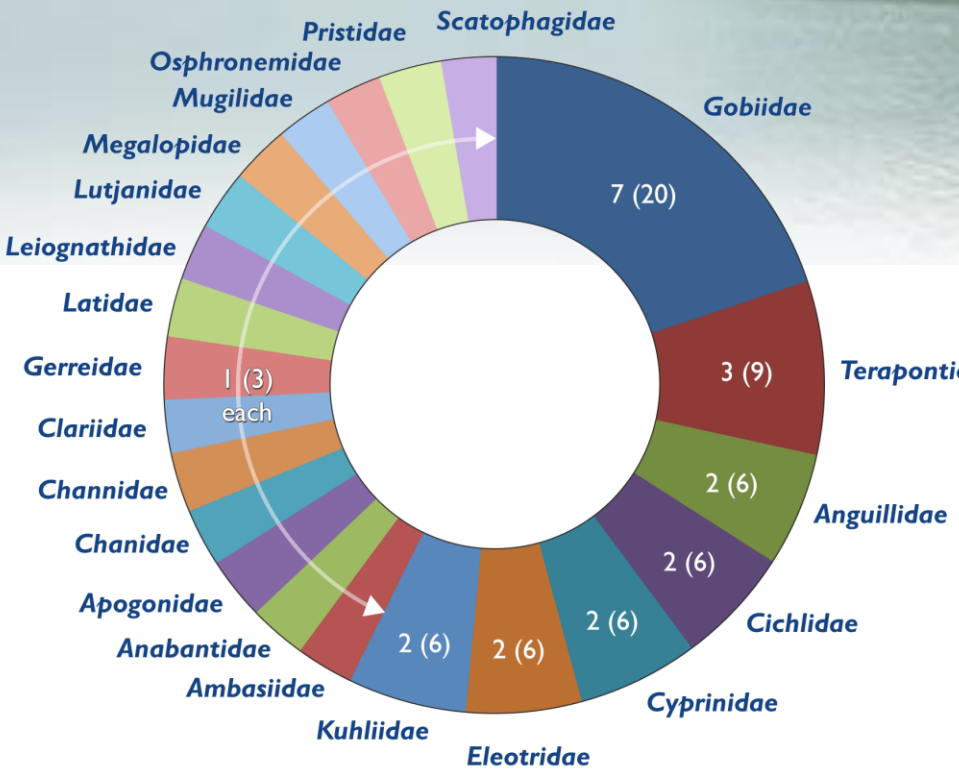


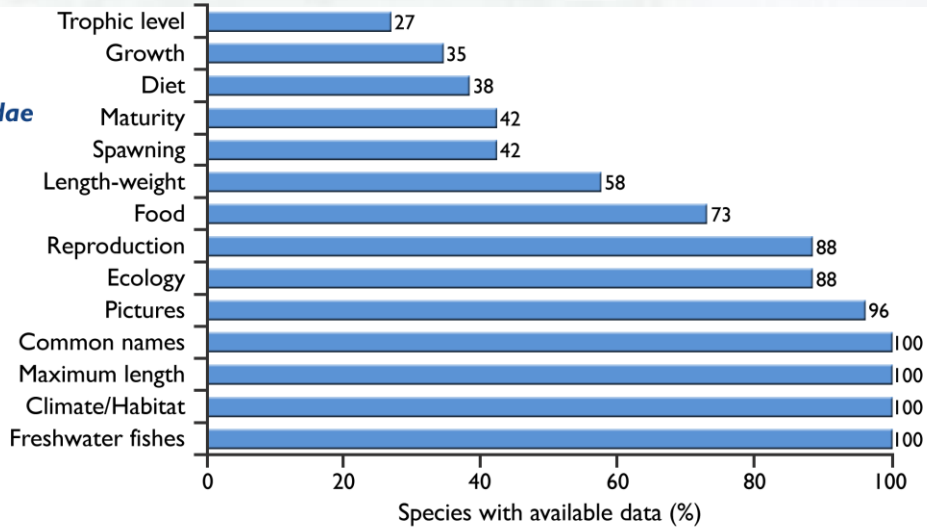


Fishes in Naujan Lake

Barbodes hemictenus Jordan & Richardson, 1908
Local name: Pait
Source: CAS Ichthyology Primary Types Imagebase.







Tools in FishBase

- Biodiversity checklists
- Fish Identification
- Invasiveness
- Matching Names
- Fish Rulers and Poster
- Ebook or Field Guides
- Faunal Checklist
- Aquamaps
- And more…..

Your IP address is: 192.168.204.75

Mirrors: fishbase.org | fishbase.us | fishbase.de | fishbase.fr | fishbase.se | fishbase.tw | fishbase.cn | fishbase.gr

English | Español | Portuguese | Français | Deutsch | Italiano | Nederlands | Chinese **More languages...**

FishBase

(32900 Species , 303100 Common names, 54800 Pictures, 51400 References, 2150 Collaborators, 33 million Hits/month)

(08/2014)

Home | FishBase Book | FishBase Tour | Best Photos | Hints | Guest Book | Download | Links | Fish Forum | Fish Quiz | FishWatcher | Ichthyology Course | LarvalBase | Team | **Identification**

1

Common Name

contains | Search | (e.g. rainbow trout)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

中文 العربية Русский 日本語 हिन्दी Ελληνικά **More scripts ...**

Scientific Name

Genus is | Search | (e.g. Rhincodon)

Species is | (e.g. typus)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

You can search references also in the independent Catalog of Fishes.
To search without Genus, change Genus option from "is" to "contains".

Glossary

Search | (e.g. oophagy)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

2

Information by Family

Family info.	Pictures	References (FishBase)	Missing photos
All fishes	Identification	References (Eschmeyer)	Stamps
Nominal species	Identification keys		Graphs
			Species Ecology Matrix

Note: Lists may be incomplete. Some lists may be very long and will take time to load.

3

Information by Country / Island

Biodiversity	Uses	Tools	Miscellaneous
All fishes	Commercial	Identification	Country info
Freshwater	Aquaculture	Identification keys	FAO profile
Marine	Aquarium trade	Field guide	ReefBase profile
Introduced	Game fishes	Occurrences	Treaties & Conv.
Endemic	FAO aquaculture	Type localities	Collaborators
Threatened	FAO catches	References	Fish stamps
Dangerous	ICES catch	Missing data	Common names
Reef-associated	SAUP catch	Missing photos	Public aquariums
Pelagic	Fish Loss	Ecopath data	MPA database
Deep-water		Species Ecology Matrix	Spawning aggregation

Note: Lists may be incomplete. Some lists may be very long and will take time to load.

Information by Ecosystem

All fishes	Ecosystem info	Trophic pyramids	Ecopath parameters
Point data	Resilience of fishes	Species Ecology Matrix	Identification
			Identification keys

Note: Lists may be incomplete. Some lists may be very long and will take time to load.

4

Regional Interfaces

FishBase for Americas	FishBase for the Red Sea
FishBase for Africa (Search)	FishBase for HighARCS
FishBase for Africa (Home)	FishBase for Europe

Note: Tools without radio button are available from the Species Summary page.

5

Information by Topic

Trophic ecology	Life history	Uses	Miscellaneous
Diet	Growth	Aquaculture	Treaties & Conv.
Food items	L-W relationship	Aquaculture profiles	CITES
Food consumption	Length frequencies	Introductions	CMS
Ration	Recruitment	Diseases	National databases
Predators	Reproduction	Ciguatera	Names by Language
Physiology/Behavior	Maturity	Processing	Collaborators
Metabolism	Spawning	Ecotoxicology	Public aquariums
Gill area	Fecundity	Genetics	Expeditions
Brains	Eggs	Allele frequencies	Video
Vision	Egg dev.	Heritability	Fish stamps and coins
Fish sounds	Larvae	Otoliths	Uploaded photos online
Swim. speed	Larval dynamics	Mass conversion	Editor messages
	Abundance		

6

Tools

Quick Identification	Preferred algae/plants of herbivorous fishes	FAO catches	Collection History
Identification keys	Match names	Catch analysis	Trophic pyramids
Identification by morphometrics	Disease diagnosis	ICES catch	Ecopath parameters
Adverse introductions	Catch-MSY	AquaMaps	
Global introductions	My Fish Page	Classification List	New species in FishBase
Invasiveness	Life-history tool	Classification Tree	New species in Welt der Fische
Species by ecosystem	L-F Analysis	Fish statistics	New photos
Graphs	Information gaps	World records	Web Stats
SeaFood Advisory	Sea Around Us	Country codes	Top 100
Shifting Baselines WP2 - Online Toolset	ISSCAAP Troph	Catalogue of Life	Coastal Transects Analysis Model (CTAM)
	FAO aquaculture	Fish collections	

Note: Tools without radio button are available from the Species Summary page.

7

References

Author (e.g. Randall) Search

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Year

Title (e.g. Gilbert Islands)

Source

RefNo (e.g. 32 or 32, 123, 2700)

Fish Journals | ICES papers

List of publications on fishes in Zootaxa.

You can search references also in the independent Catalog of Fishes.

Associated Journal

Publish in our journal partner Acta Ichthyologica et Piscatoria the results of your primary research on fishes about growth, weight-length relationships, reproduction (maturity, fecundity, spawning), food and diet composition, introductions and range extensions for faster subsequent entry in (2011 impact factor: 0.547).

Indexed Journal

Cybium (publisher: SFI, Société Française d'Ichtyologie)

For journal editors: Would you wish that your journal were indexed in FishBase, please contact our librarian.

References Citing FishBase

How to cite FishBase

To give due credit to the original authors, please cite data taken from FishBase by Main Ref. and/or Data Ref. of the respective record.

Cite FishBase itself as

Froese, R. and D. Pauly. Editors. 2015. FishBase.
World Wide Web electronic publication.
www.fishbase.org, version (04/2015).

Disclaimer

FishBase present information on fishes as correctly as possible. However, we can not exclude errors, and neither we nor our partners can be held responsible for any damage that may arise from these.

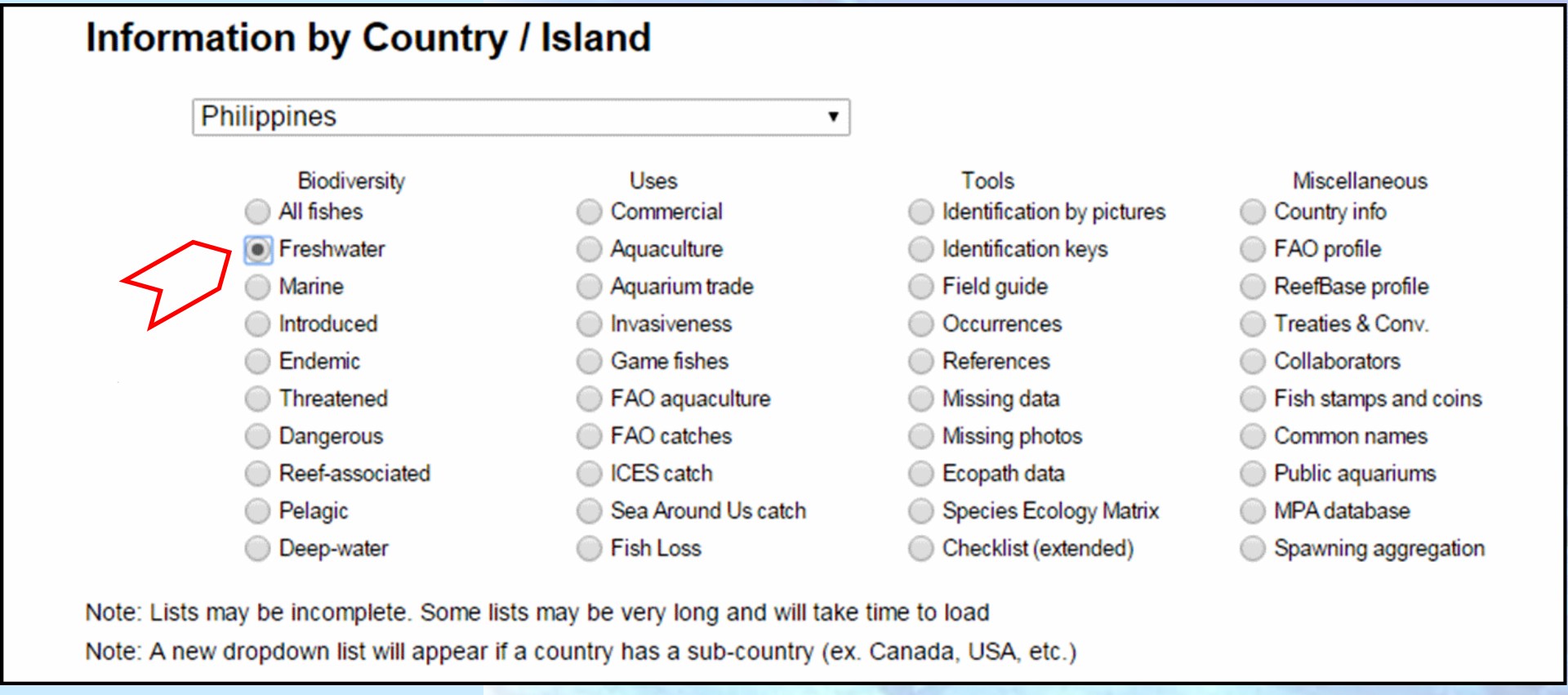
Copyright

Note: FishBase is also available on CD-ROM, with detailed information on population dynamics, genetics, morphology, trophic ecology, physiology, ecotoxicology, reproduction, etc. See the FishBase homepage or the FishBase book for more information. FishBase was assembled with the help of many partners and with the support of the European Commission and other sponsors. Contact us if you want to provide pictures, data or reprints.

FishBase Team | Web Stats | Add new species | Touch screen | Labels RDE |

FishBase Tools: Biodiversity Checklists

Search by Country Information



FishBase

List of Freshwater Fishes reported from Philippines

n = 358

Sort by:	○ Family	◉ Species	○ Occurrence	○ Phylogenetic	☑ Extended checklist	☐ Show photos
Filter:	○ All fishes	◉ Freshwater	○ Saltwater	○ Introduced	○ Endemic	○ Threatened
	○ Dangerous	○ Reef-associated	○ Pelagic	○ Deep-water	○ Game fishes	○ Commercial

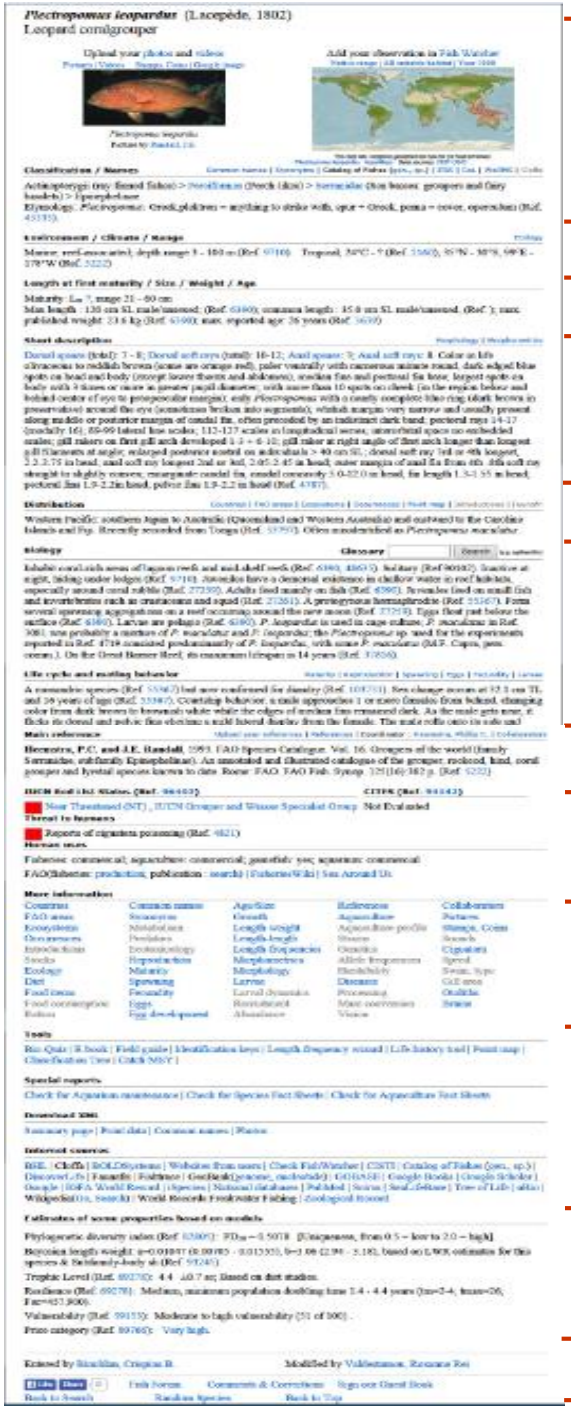
Table 1: 342 species currently present in the country/island (endemic, native, introduced, reintroduced);
Table 2: 12 species possibly present in the country/island (stray, questionable);
Table 3: 4 species demonstrated to be absent in the country/island (extirpated, not established, misidentification, error).
Table 4: 358 species reported from the country/island altogether.

Table 4: 358 species reported from the country/island altogether.

1 of 8 Next All | Jump to: 1 | Go down | Select another country

Order	Family	Species	Occurrence	FishBase name	Name
Perciformes	Sparidae	*Acanthopagrus berda*	misidentification	Goldsilk seabream	
Perciformes	Cichlidae	*Amatitlania nigrofasciata*	introduced	Convict cichlid	Convict
Perciformes	Ambassidae	*Ambassis buruensis*	native	Buru glass perchlet	
Perciformes	Ambassidae	*Ambassis gymnocephalus*	native	Bald glassy	Langarai
Perciformes	Ambassidae	*Ambassis interrupta*	native	Long-spined glass perchlet	Langaray
Perciformes	Ambassidae	*Ambassis macracanthus*	native	Estuarine glass perchlet	

Family	Species	Author	Info	Occurrence	Common names	Abundance	Max length	Maturity	Remark	Photo
Sparidae	*Acanthopagrus berda*	(Forsskål, 1775)	Fr, Br, M, Fi, Lf	misidentification			75 TL (unsexed)		Records In Ref. 393, 2115, 83673 refer to *A. pacificus* (Ref. 86288).	+
Cichlidae	*Amatitlania nigrofasciata*	(Günther, 1867)	Fr, Or	introduced	Convict (English)		8.29 SL (mixed)		Recorded from Lapad River, Laguna (pers. observation).	+
Ambassidae	*Ambassis buruensis*	Bleeker, 1856	Fr, Br, M	native			8.1999998092651 TL (male)		Specimens were collected from Calbiga-a creek and Ambacan River at Butigan, Leyte in 1993 (Ref. 7223) and reported from Taal Lake (Ref. 12165, 13446). Also Ref. 2847, 7050.	+
Ambassidae	*Ambassis gymnocephalus*	(Lacepède, 1802)	Fr, Br, M	native	Langarai (Tagalog), Parangan (Hiligaynon), Langaray (Tagalog)		5.3 SL (unsexed)		Reported from Taal Lake (Ref. 12165, 13446). Also Ref. 280, 33390.	+
Ambassidae	*Ambassis interrupta*	Bleeker, 1853	Fr, Br	native	Langaray (Tagalog)		12 SL (male)		Specimens were collected from Ambacan River at Baybay, Leyte in 1993 (Ref. 7223). Reported from Lake Taal (Ref. 13446). Also Ref. 2847, 7050.	+
Ambassidae	*Ambassis macracanthus*	Bleeker, 1849	Fr, Br	native			10.5 SL (male)			+
Ambassidae	*Ambassis marianus*	Günther, 1880	Fr, Br	questionable			10 SL (unsexed)		Reported occurrence in San Miguel Bay, Philippines (Ref. 045161) is questionable as this species is known to be endemic to Australia.	-


Plectropomus leopardus (Lacepède, 1802)
Leopard coralgrouper
Taxonomy
Environment
Size, Weight & Age
Morphology
Distribution
Biology & Life History
References
Conservation Status
Human Uses
Available species information
Tools, Reports & Internet sources
Estimates of properties based on models
Feedback mechanisms

Cheilinus undulatus Rüppell, 1835
Humphead wrasse

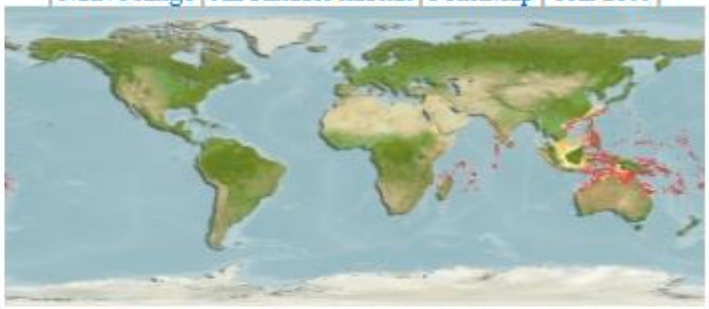
Upload your photos and videos

Pictures | Videos Stamps, Coins | Google image

Cheilinus undulatus
Picture by Honeycutt, K.

Add your observation in Fish Watcher

| Native range | All suitable habitat | PointMap | Year 2100 |



This map was computer-generated and has not yet been reviewed.
Cheilinus undulatus AquaMaps Data sources: GBIF OBIS

Number of species found = 1
Number of records found = 1
Number of records with coordinates = 0

Sort by Species Locality Country Year

No.	Collection name	Country
1.	*Cheilinus undulatus*	Philippines

Back to Search

1 of 1 | Jump to: 1

cfm script by eagbayani, 20.03.00 , php script by celloran, 20.04.10

Philippines country informati

Common names: [No common name]
Occurrence: native
Salinity: marine
Abundance: | **Ref:**
Importance: commercial | **Ref:**
Aquaculture: never/rarely | **Ref:**
Regulations: no regulations | **Ref:**
Uses: live export: yes;
Comments: Known from Lucena City (Ref. 58652). Also Ref. 1602, 48613.
National Checklist:
Country Information: https://www.cia.gov/cia/publications/factbook/geos/rp.html
National Fisheries Authority:
Occurrences: Occurrences Point map
Main Ref: Broad, G., 2003
National Database:

Cheilinus undulatus Rüppell, 1835
Humphead wrasse

Humphead wrasse Lupaen, Mameng, Balaki, Bankilan, Banog, Bungat, Buntogon, Danlugan, Hipus, Humphead maori wrasse, Ipus-ipus, Ipus-ipus, Isdang bato, Labayan, Labayan, Labayan, Lampalampa, Langkani, Lubay-lubay, Lubayan, Mameng, Mamin, Maming, Mammi, Mamming, Maringyan, Molmol, Mul-mul, Pilo-pilo, Pirat-pirat, Tamago, Tarungan, Tausay, Tul-ungan, Verde verde,

Country information for the species

Information by Ecosystem

Mekong (River (basin)

- (•) All fishes
- ( ) Point data
- ( ) Ecosystem info
- ( ) Resilience of fishes
- ( ) Trophic pyramids
- ( ) Species Ecology Matrix
- ( ) Deep-water
- ( ) Ecopath parameters
- ( ) Identification by pictures
- ( ) Identification keys

Species in *Mekong*

n= 802 (Incomplete)
See pictures

Species	Name	Family	Habitat	Length (cm)	Trophic
Oryzias haugiangensis		Adrianichthyidae	benthopelagic		
Oryzias javanicus	Javanese ricefish	Adrianichthyidae			
Oryzias latipes	Japanese rice fish	A			
Oryzias mekongensis		Ad			
Oryzias minutillus	Dwarf medaka	Ad			
Oryzias pectoralis		Adr			
Oryzias sinensis		Adri			
Oryzias songkhramensis		Adria			
Akysis bilustris		Akysi			
Akysis brachybarbatus		Akysic			
Akysis ephippifer		Akysid			
Akysis fuliginatus		Akysida			
Akysis maculipinnis		Akysidae			
Akysis recavus		Akysidae			
Akysis variegatus		Akysidae			
Akysis varius		Akysidae			
Pseudobagarius filifer		Akysidae			
		Akysidae			

Other identification tools | FishBase

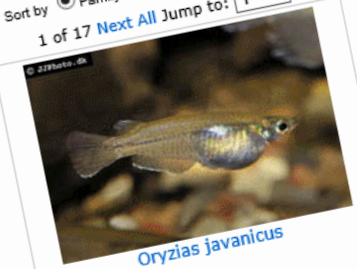
Fish Species in Mekong

n = 802 | See tabular list

Sort by (•) Family ( ) Species ( ) Phylogenetic
1 of 17 Next All Jump to: 1

Oryzias haugiangensis

Class: Actinopterygii
Order: Beloniformes
Family: Adrianichthyidae



Oryzias javanicus

Class: Actinopterygii
Order: Beloniformes
Family: Adrianichthyidae

Oryzias latipes

Class: Actinopterygii
Order: Beloniformes
Family: Adrianichthyidae

Oryzias mekongensis

Oryzias minutillus

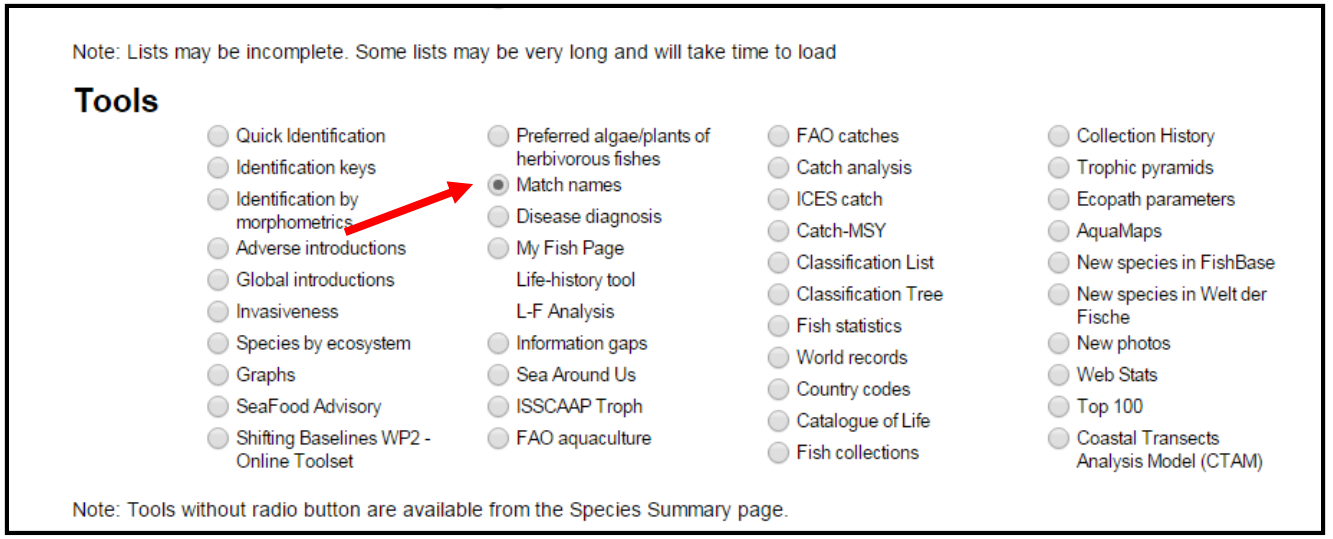
Class: Actinopterygii
Order: Beloniformes
Family: Adrianichthyidae

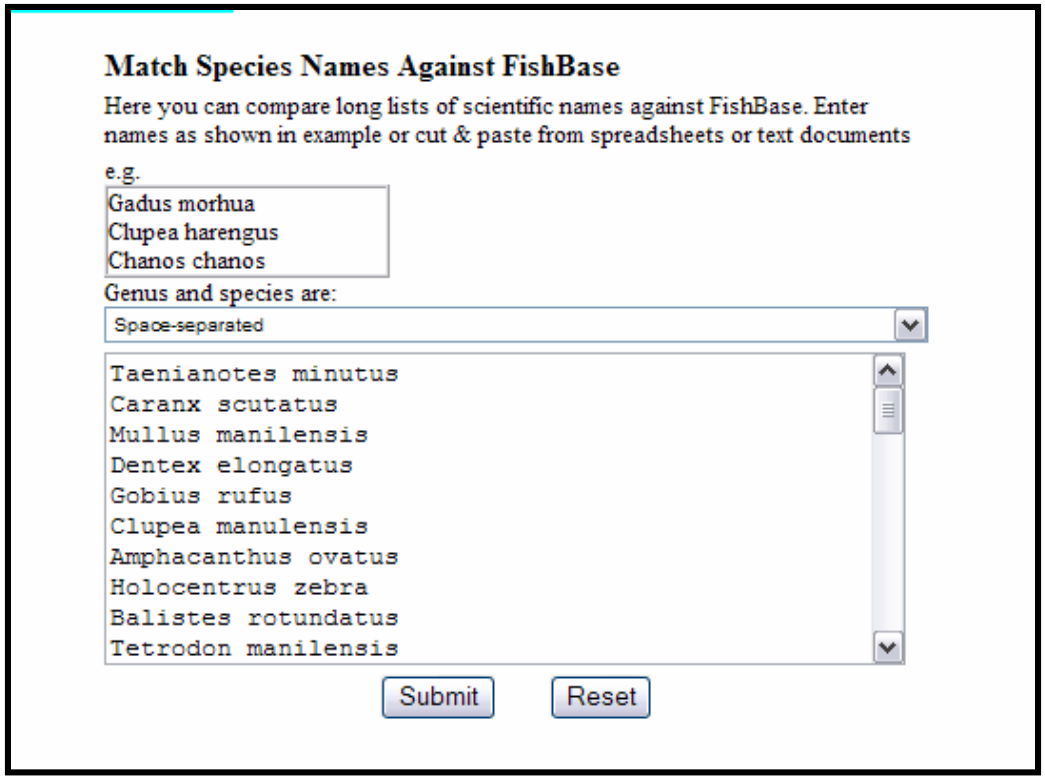
Oryzias pectoralis

Class: Actinopterygii
Order: Beloniformes
Family: Adrianichthyidae

Ecosystem Checklists

Taenianotes minutus
Caranx scutatus
Mullus manilensis
Dentex elongatus
Gobius rufus
Clupea manulensis
Amphacanthus ovatus
Holocentrus zebra
Balistes rotundatus
Tetrodon manilensis
Saurus depressus
Tetrodon compressus
Labrus baccatus
Polynemus longifilis
Pristipoma nigrum
Caranx mertensii
Trachi dermus fasciatus
Plotosus lineatus
Arius venosus
Arius manillensis
Pimelodus manillensis
Encheliophis vermicularis
Cyrene philippinia
Cyrene cyanopareja
Pseudochromis adustus
Brotulophis argentistriatus
Tetraroge cristagalli
Mugil kelaartii
Gobius (Awaous) litturatus
Gerres philippinus
Glyphidodon assimilis
Leptocephalus brevicaudus
Cristiceps filifer
Muraena manillensis
Hemirhamphus viviparus
Hapalogenys meyenii
Gobius pavo
Lethrinus jagorii
Hemirhamphus philippinus





FishBase Tools: Match Names Routine

Resulting valid names in FishBase

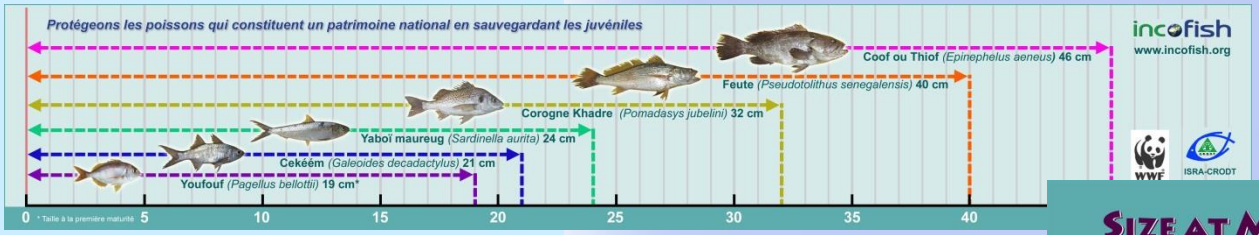
Your IP address is: 202.123.56.189

FishBase

Results from matching names against FishBase 49 name(s) submitted

Matched Species:

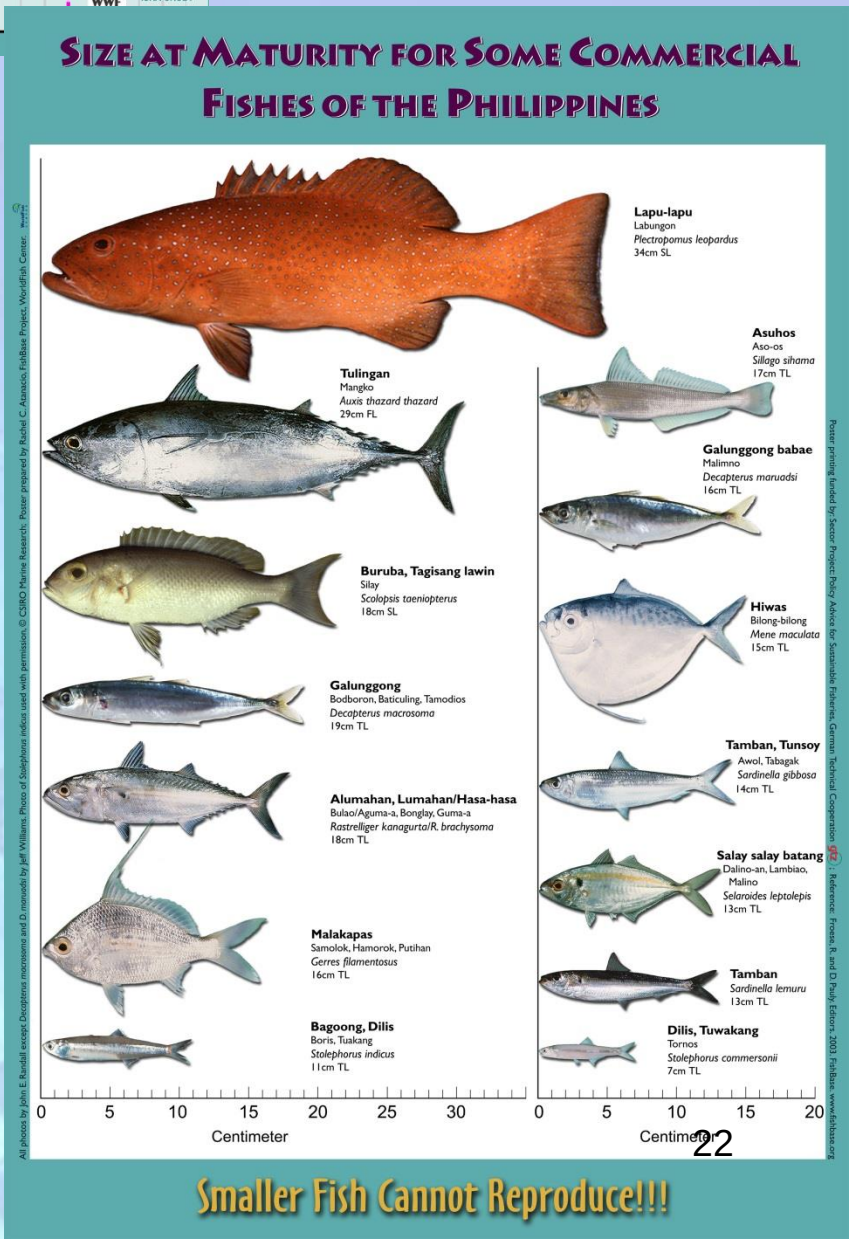
#	Your data	Valid name	Author	Family	Order	Class	SpecCode
1.	*Balistes rotundatus*	*Balistes rotundatus*	Marion de Procé, 1822	Balistidae	Tetraodontiformes	Actinopterygii (ray-finned fishes)	59946
2.	*Tetrodon manilensis*	*Arothron manilensis*	(Marion de Procé, 1822)	Tetraodontidae	Tetraodontiformes	Actinopterygii (ray-finned fishes)	7187
3.	*Tetrodon compressus*	*Canthigaster compressa*	(Marion de Procé, 1822)	Tetraodontidae	Tetraodontiformes	Actinopterygii (ray-finned fishes)	6542
4.	*Labrus baccatus*	*Halichoeres nigrescens*	(Bloch & Schneider, 1801)	Labridae	Perciformes	Actinopterygii (ray-finned fishes)	58179
5.	*Polynemus longifilis*	*Polynemus paradiseus*	Linnaeus, 1758	Polynemidae	Perciformes	Actinopterygii (ray-finned fishes)	8318
6.	*Pristipoma nigrum*	*Plectorhinchus nigrus*	(Cuvier, 1830)	Haemulidae	Perciformes	Actinopterygii (ray-finned fishes)	23485
7.	*Caranx mertensii*	*Selaroides leptolepis*	(Cuvier, 1833)	Carangidae	Perciformes	Actinopterygii (ray-finned fishes)	388
8.	*Plotosus lineatus*	*Plotosus lineatus*	(Thunberg, 1787)	Plotosidae	Siluriformes	Actinopterygii (ray-finned fishes)	4706
9.	*Arius venosus*	*Arius venosus*	Valenciennes, 1840	Ariidae	Siluriformes	Actinopterygii (ray-finned fishes)	1283
10.	*Arius manillensis*	*Arius manillensis*	Valenciennes, 1840	Ariidae	Siluriformes	Actinopterygii (ray-finned fishes)	27634
11.	*Pimelodus manillensis*	*Cephalocassis manillensis*	(Valenciennes, 1840)	Ariidae	Siluriformes	Actinopterygii (ray-finned fishes)	51585
12.	*Encheliophis vermicularis*	*Encheliophis vermicularis*	Müller, 1842	Carapidae	Ophidiiformes	Actinopterygii (ray-finned fishes)	10226
13.	*Pseudochromis adustus*	*Pseudochromis fuscus*	Müller & Troschel, 1849	Pseudochromidae	Perciformes	Actinopterygii (ray-finned fishes)	6627
14.	*Brotulophis argentistriatus*	*Pholidichthys leucotaenia*	Bleeker, 1856	Pholidichthyidae	Perciformes	Actinopterygii (ray-finned fishes)	4433
15.	*Tetraroge cristagalli*	*Ablabys taenianotus*	(Cuvier, 1829)	Tetrarogidae	Scorpaeniformes	Actinopterygii (ray-finned fishes)	10232



FishBase can be utilized to produce simple, but effective fish rulers and posters:

….. customized for a fishery, a fishing area, fishing gear, fish market, bay etc.

A simple ruler and poster showing the actual lengths of fish species at first maturity can be a useful management tool. Posted or used in public places (e.g. public market), consumers can compare the size of the fish they buy with the pictures and know whether the fish has reached maturity.



Tools

Bio-Quiz | E-book | Field guide | Identification keys | Length-frequency wizard | Life-history tool | Point map | Classification Tree | Catch-MSY |

Plectropomus leopardus (Lacepède, 1802)
Leopard coralgrouper

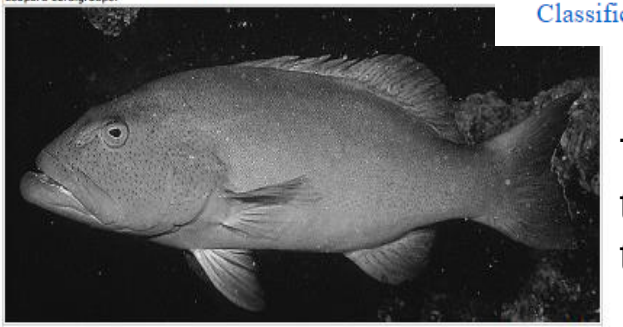


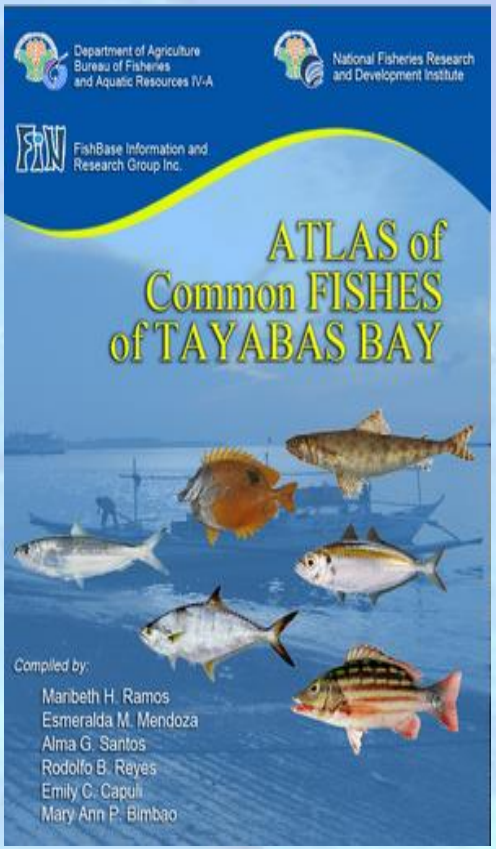
photo by Randall, J.E.

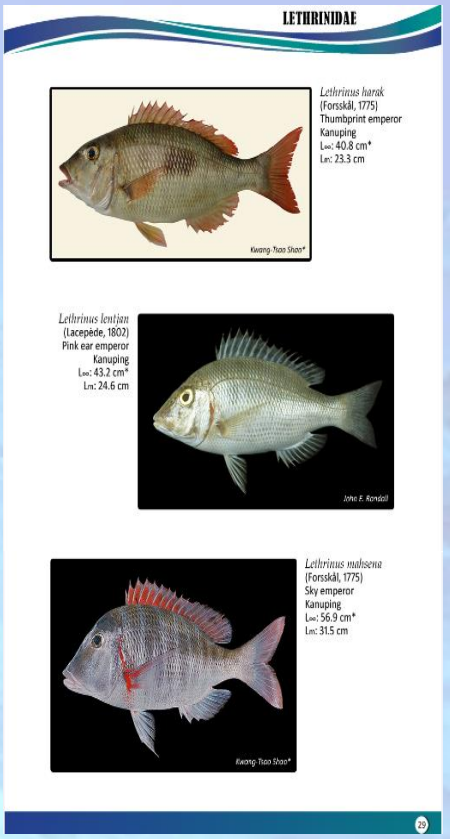
Family:	Serranidae (Sea basses: groupers and fairy basslets), subfamily: Epinephelinae
Max. size:	120 cm SL (male/unsexed); max.weight: 24 kg; max. reported age: 26 years
Environment:	reef-associated; depth range 3 - 100 m
Distribution:	Western Pacific: southern Japan to Australia (Queensland and Western Australia) and eastward to the Caroline Islands and Fiji. Recently recorded from Tonga (Ref. 53797). Often misidentified as Plectropomus maculatus.
Diagnosis:	Dorsal spines (total): 7-8; Dorsal soft rays (total): 10-12; Anal spines: 3-3; Anal soft rays: 8-8. Color in life olivaceous to reddish brown (some are orange-red), paler ventrally with numerous minute round, dark-edged blue spots on head and body (except lower thorax and abdomen), median fins and pectoral fin base; largest spots on body with 3 times or more in greater pupil diameter; with more than 10 spots on cheek (in the region below and behind center of eye to preopercular margin); only Plectropomus with a nearly complete blue ring (dark brown in preservative) around the eye (sometimes broken into segments); whitish margin very narrow and usually present along middle or posterior margin of caudal fin, often preceded by an indistinct dark band; pectoral rays 14-17 (modally 16); 89-99 lateral line scales; 112-127 scales in longitudinal series; interorbital space no embedded scales; gill rakers on first gill arch developed 1-3 + 6-10; gill raker at right angle of first arch longer than longest gill filaments at angle; enlarged posterior nostril on individuals > 40 cm SL; dorsal soft ray 3rd or 4th longest, 2.2-2.75 in head; anal soft ray longest 2nd or 3rd, 2.05-2.45 in head; outer margin of anal fin from 4th -8th soft ray straight to slightly convex; emarginate caudal fin, caudal concavity 5.0-12.0 in head, fin length 1.3-1.55 in head; pectoral fins 1.9-2.2in head; pelvic fins 1.9-2.2 in head (Ref. 4787).
Biology:	Inhabit coral-rich areas of lagoon reefs and mid-shelf reefs (Ref. 6390, 48635). Solitary (Ref 90102). Inactive at night, hiding under ledges (Ref. 9710). Juveniles have a demersal existence in shallow water in reef habitats, especially around coral rubble (Ref. 27259). Adults feed mainly on fish (Ref. 6390). Juveniles feed on small fish and invertebrates such as crustaceans and squid (Ref. 27261). A protogynous hermaphrodite (Ref. 55367). Form several spawning aggregations on a reef occurring around the new moon (Ref. 27259). Eggs float just below the surface (Ref. 6390). Larvae are pelagic (Ref. 6390). P. leopardus is used in cage culture; P. maculatus in Ref. 3081 was probably a mixture of P. maculatus and P. leopardus; the Plectropomus sp. used for the experiments reported in Ref. 4719 consisted predominantly of P. leopardus, with some P. maculatus (M.F. Capra, pers. comm.). On the Great Barrier Reef, its maximum lifespan is 14 years (Ref. 37816).
IUCN Red List Status:	Near Threatened (Ref. 96402) , IUCN Grouper and Wrasse Specialist Group
Threat to humans:	reports of ciguatera poisoning
Country info:	

Entered by:	Binohlan, Crispina B. - 18.12.91
Modified by:	Valdestamon, Roxanne Rei - 20.08.14
Checked by:	Capuli, Estelita Emily - 02.05.94

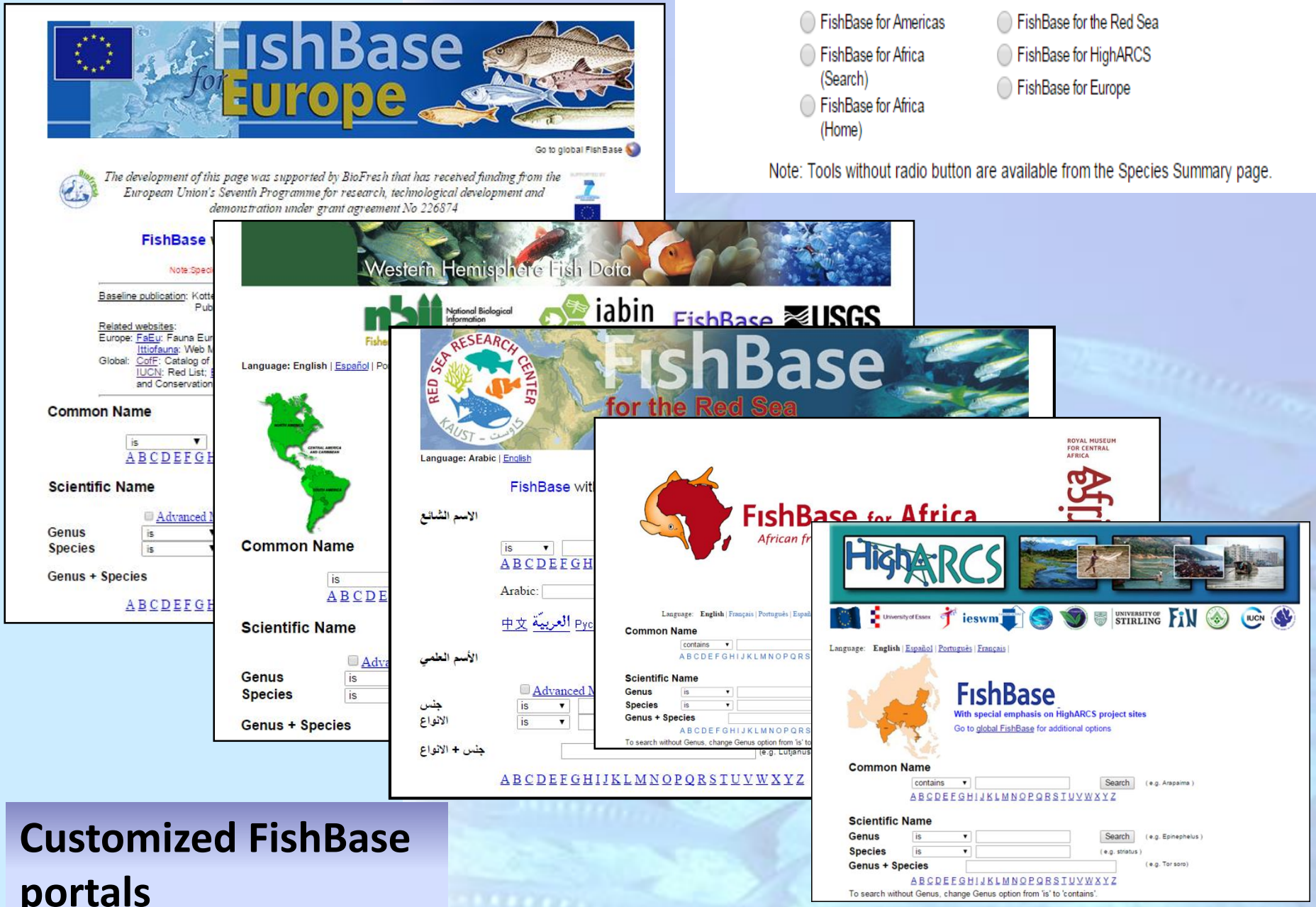
Source and more info: www.fishbase.org. For personal, classroom, and other internal use only. Not for publication.

The E-book or Field guide tool gives a print-out of the species summary page with information that can be **useful in the field or for teaching**.





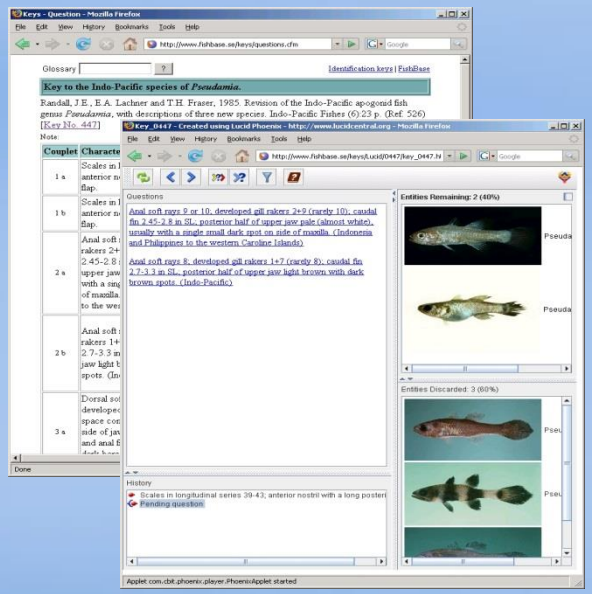
FishBase can be used as **a tool to compile faunal checklists**



Customized FishBase portals

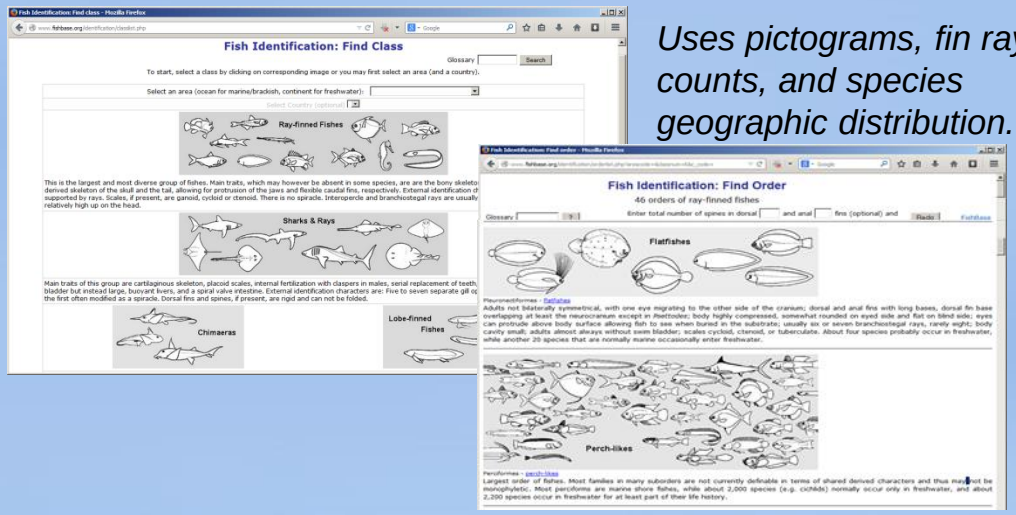
FishBase Tools: Species Identification Tools

Identification Keys



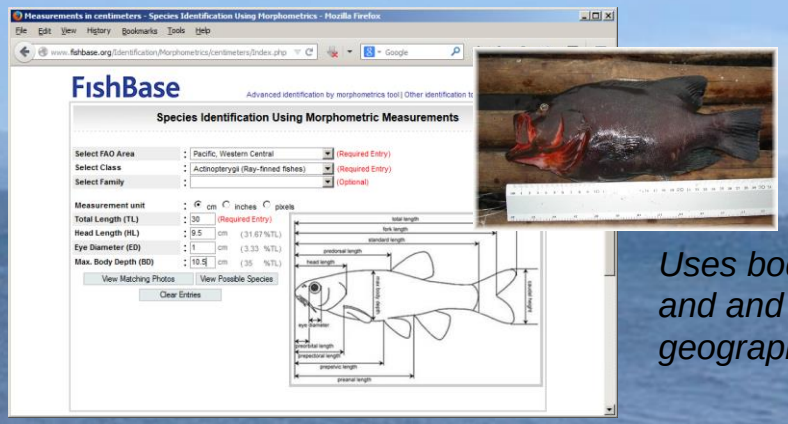
Includes photos and diagrams.

Quick Identification



Uses pictograms, fin ray counts, and species geographic distribution.

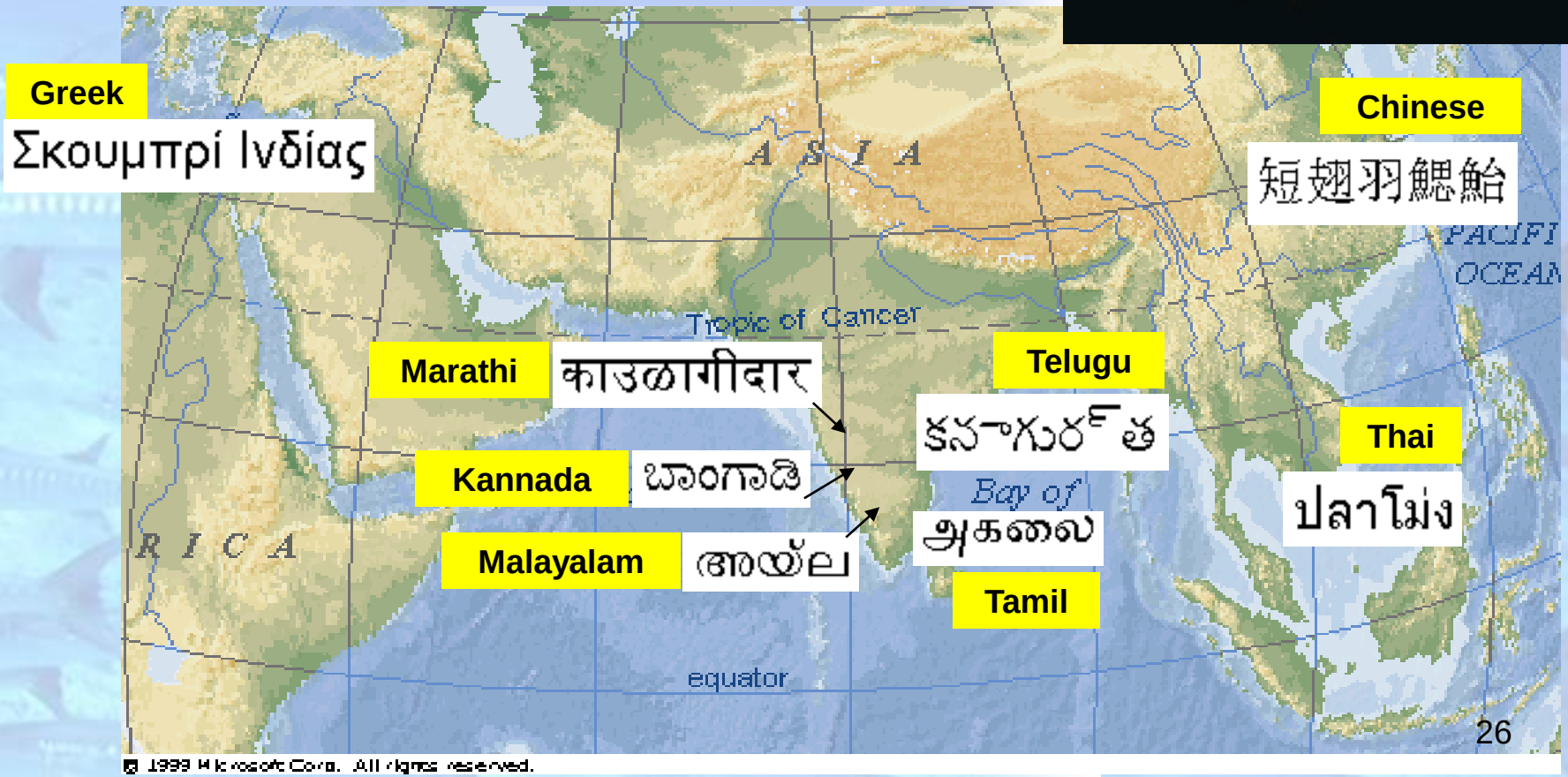
Species ID Using Morphometrics



Uses body measurements and and species geographic distribution.

FishBase as a tool to identify equivalent scientific name of a fish through common names

247 Common names of *Rastrelliger kanagurta* in 72 languages and 10 non-Roman scripts



FishBase Tools: Invasiveness Tool

Sieves of the Invasiveness Tool

All Fish Species

↓

Commercially utilized in the Ornamental or Aquaculture industry

↓

Have at least one reported establishment record

↓

Country level limitations

Non-indigenous

↓

with a natural climate similar to the country

Aquaculture and Aquarium Fishes Which May Establish Themselves in Myanmar

[n = 118]

List of commercial aquaculture and aquarium fishes which match the environmental conditions in Myanmar, and which have established themselves in at least one other country.

Refresh ○ FishBase name ○ Species ○ Family ○ Aquaculture ○ Aquarium ○ Max. length ○ Productivity ◉ Other countries

Select: Myanmar Percent established: 6%

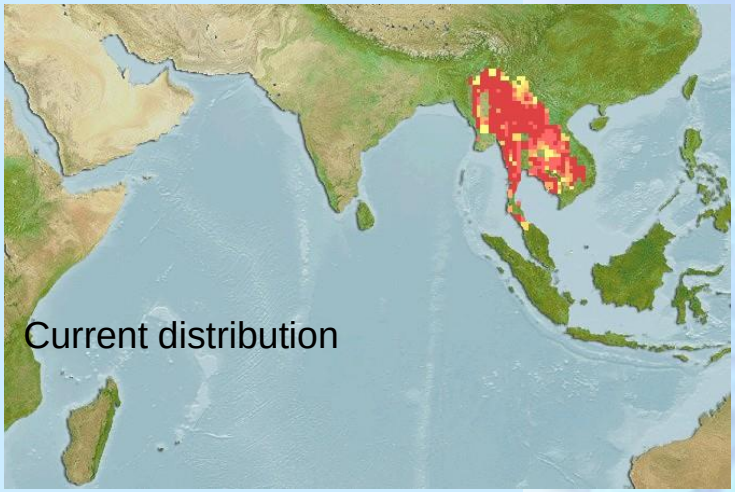
FishBase name	Species	Family	Aquaculture	Aquarium	Max length (cm)	Temp. (°C)	Climate zone	Productivity	Established in countries	
									This	Other
Mozambique tilapia	*Oreochromis mossambicus*	Cichlidae	commercial	commercial	39	17 - 35	tropical	Med.	Yes	108
Nile tilapia	*Oreochromis niloticus*	Cichlidae	commercial	never/rarely	60	14 - 33	tropical	Med.	Yes	67
Blue tilapia	*Oreochromis aureus*	Cichlidae	commercial	commercial	46	8 - 30	tropical	High	No	36
Redbreast tilapia	*Tilapia rendalli*	Cichlidae	commercial	commercial	45	24 - 28	tropical	Med.	No	28
Green swordtail	*Xiphophorus hellerii*	Poeciliidae	never/rarely	highly commercial	14	22 - 28	tropical	High	No	28
Redbelly tilapia	*Tilapia zillii*	Cichlidae	commercial	commercial	40	11 - 36	tropical	Med.	No	25
Red lionfish	*Pterois volitans*	Scorpaenidae	never/rarely	commercial	38	22 - 28	tropical	Low	No	21
Longfin tilapia	*Oreochromis macrochir*	Cichlidae	commercial	never/rarely	43	18 - 35	tropical	High	No	20
Southern platyfish	*Xiphophorus maculatus*	Poeciliidae	never/rarely	commercial	4	18 - 25	tropical	High	No	17
Jaguar guapote	*Parachromis managuensis*	Cichlidae	commercial	commercial	55	25 - 36	tropical	Med.	No	13
Giant gourami	*Osphronemus goramy*	Osphronemidae	commercial	commercial	70	20 - 30	tropical	Med.	Yes	11
Convict cichlid	*Amatitlania nigrofasciata*	Cichlidae	never/rarely	highly commercial	10	20 - 36	tropical	High	No	9
Peacock cichlid	*Cichla ocellaris*	Cichlidae	commercial	commercial	74	24 - 27	tropical	High	No	9

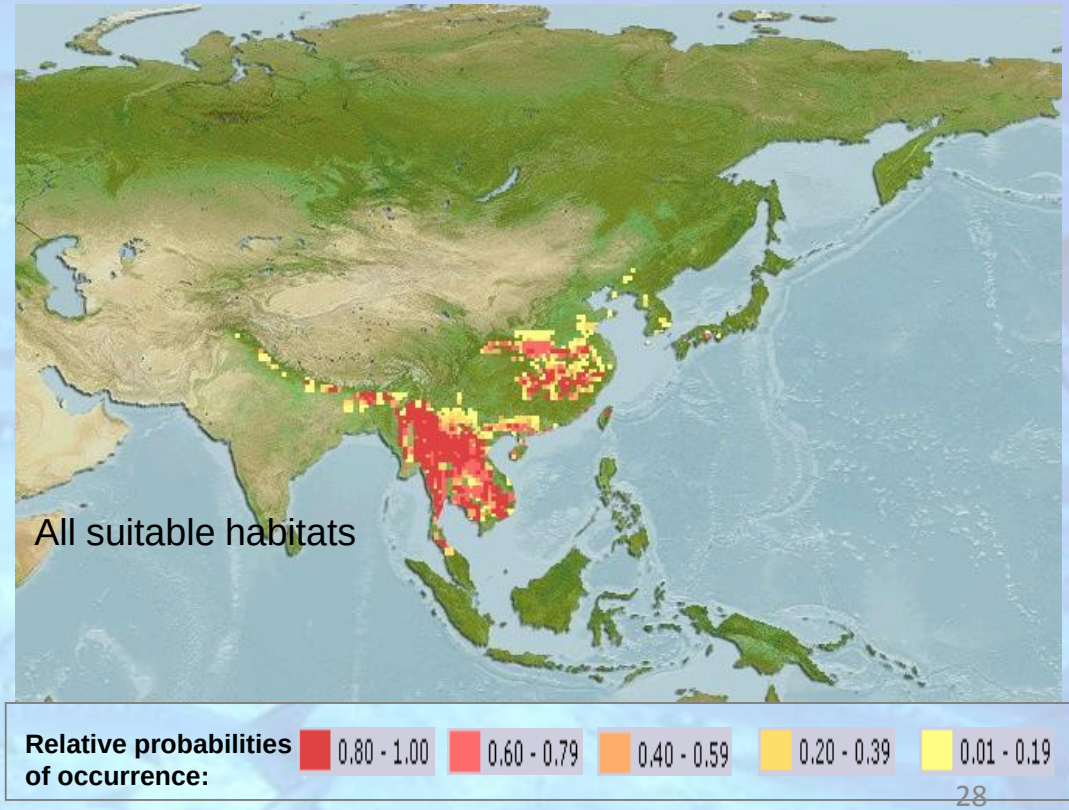
FishBase Tools: AquaMaps

Danio albolineatus (Pearl Danio)

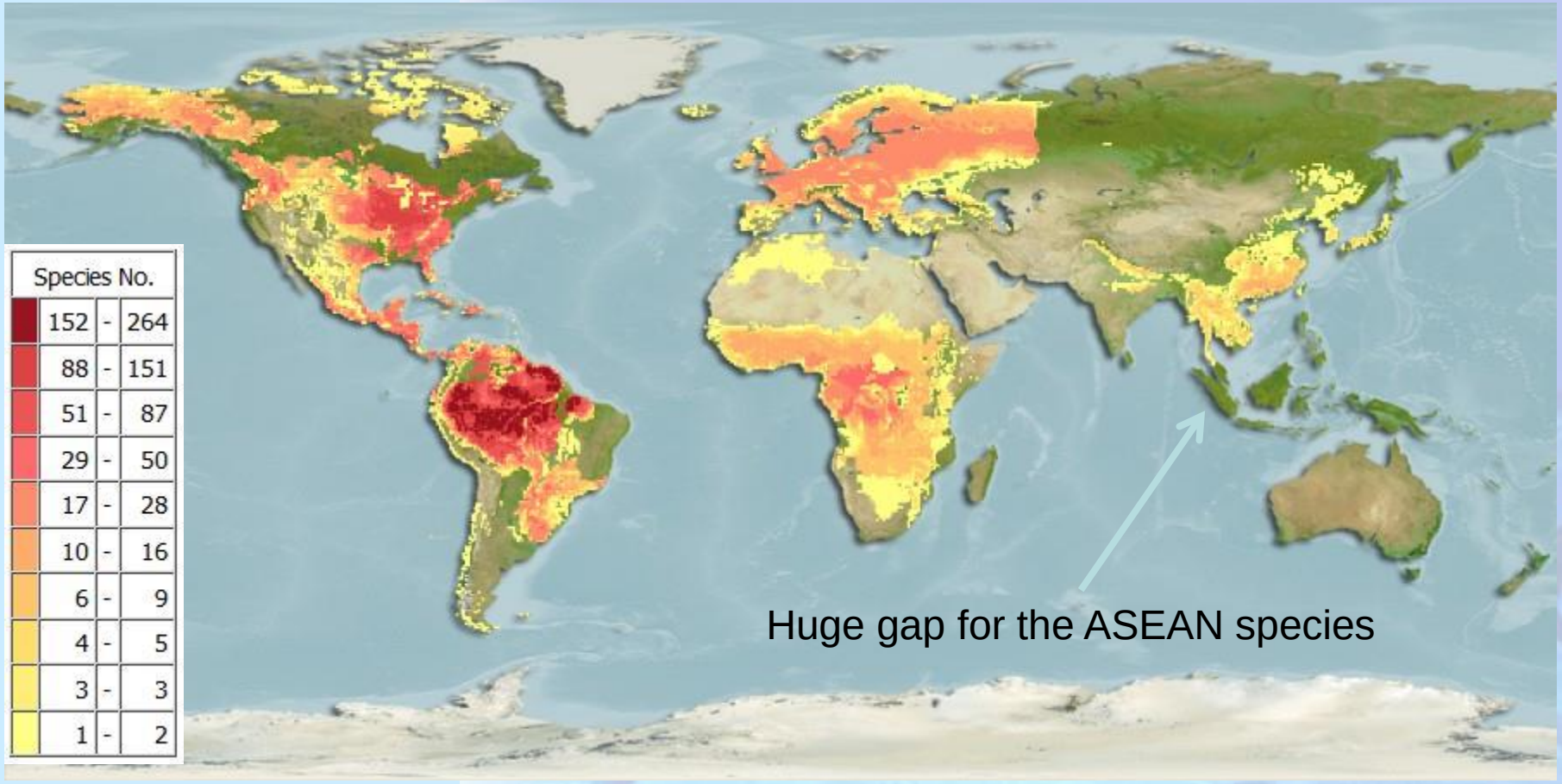
Native to Cambodia, China, Indonesia., Laos, Malaysia, Myanmar, Thailand, Vietnam

Introduced to Japan and Singapore





Global Freshwater AquaMaps

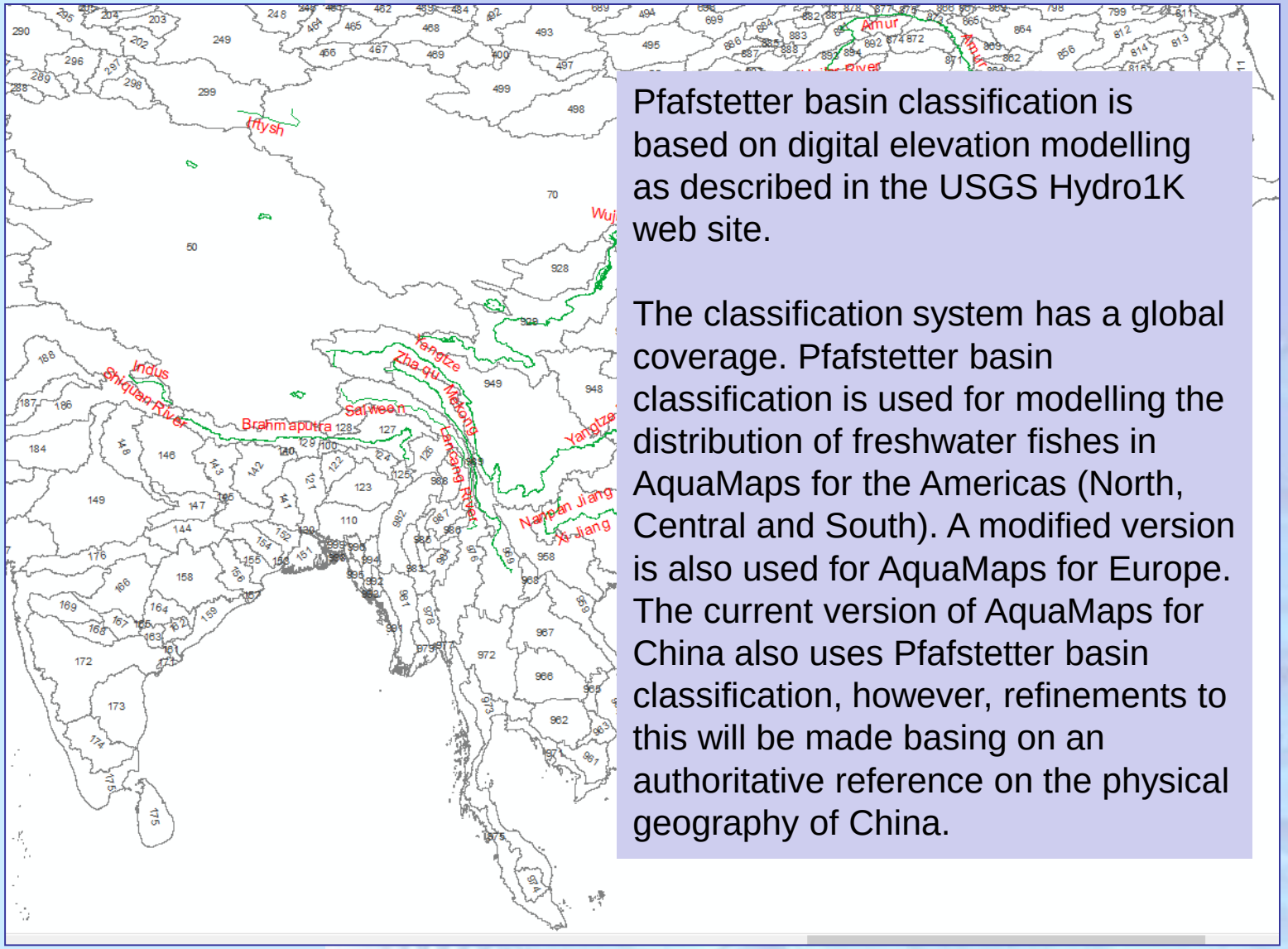


No. of mapped fish species

Global: 825
Africa: 258
Americas: 688
China: 32
Europe: 33

Need for authoritative classification of FW basins with shapefiles
Opposing views on the 2 types of classification and this needs to be resolved. Group to define the basins in Asia?

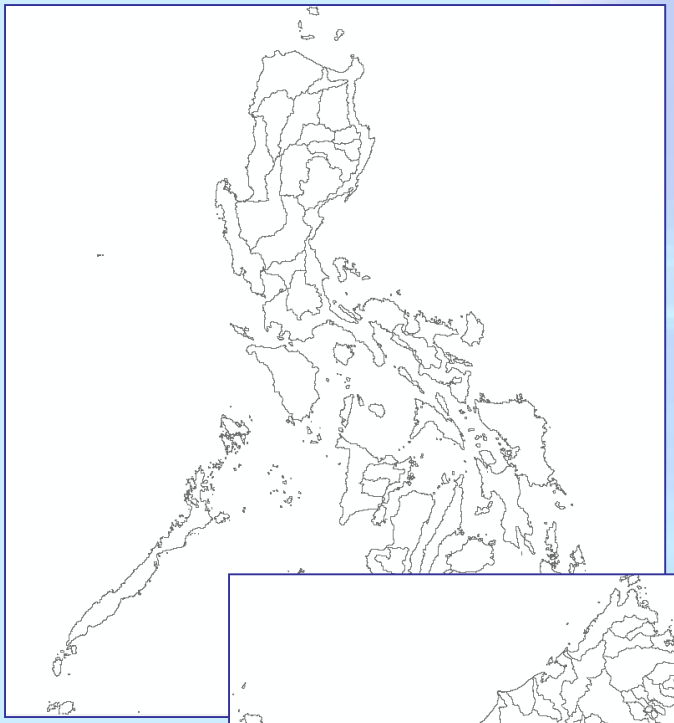
Pfafstetter Basin Classification (Level 3) for Mainland Asia

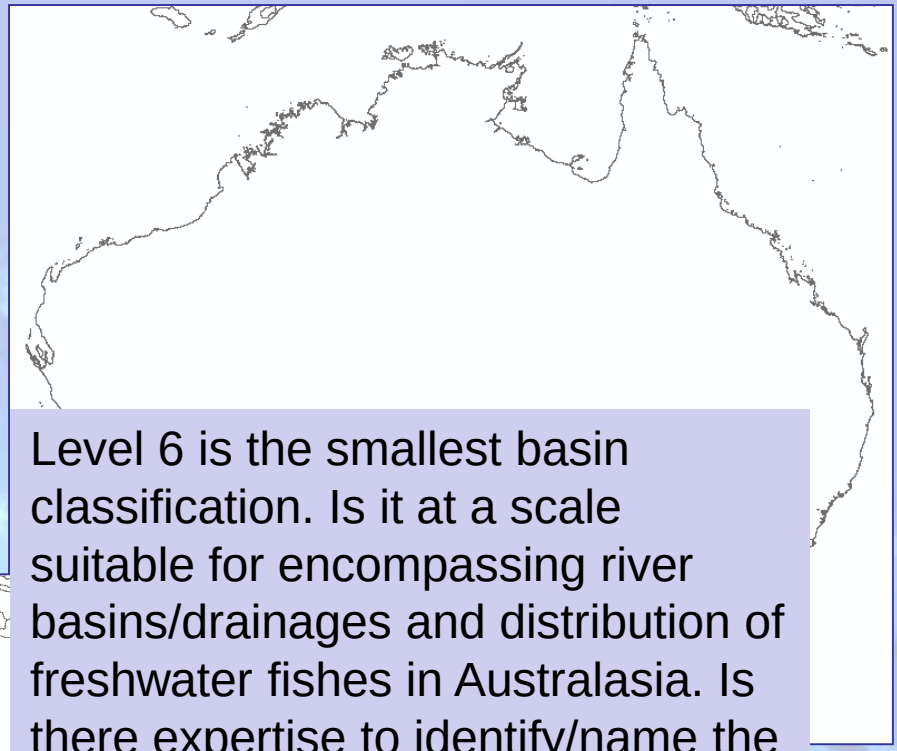


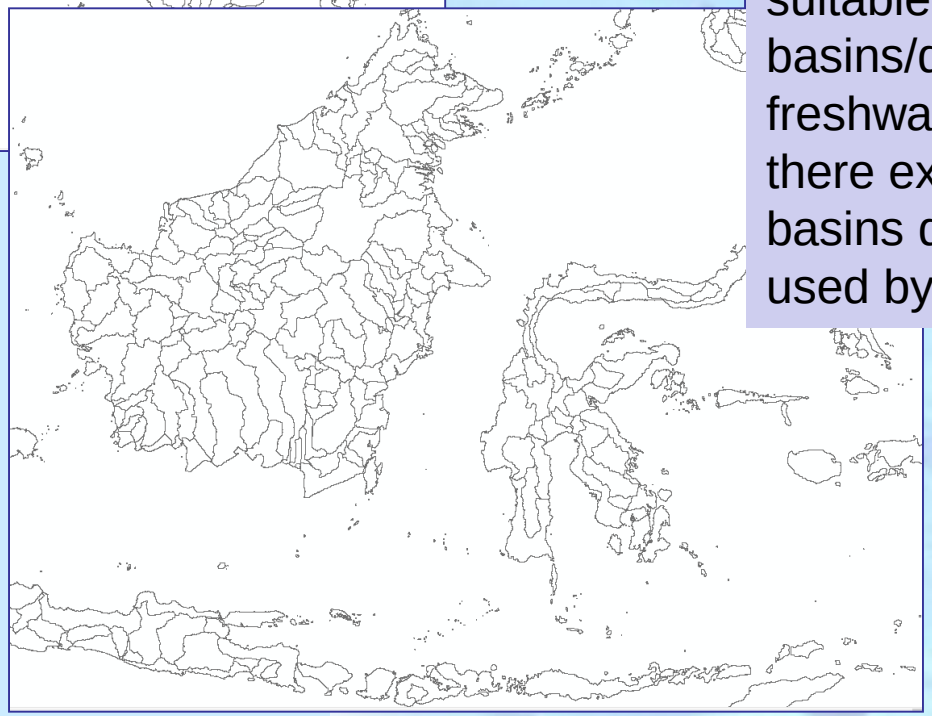
Pfafstetter basin classification is based on digital elevation modelling as described in the USGS Hydro1K web site.

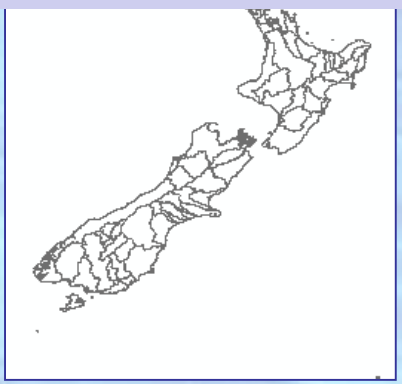
The classification system has a global coverage. Pfafstetter basin classification is used for modelling the distribution of freshwater fishes in AquaMaps for the Americas (North, Central and South). A modified version is also used for AquaMaps for Europe. The current version of AquaMaps for China also uses Pfafstetter basin classification, however, refinements to this will be made basing on an authoritative reference on the physical geography of China.

Pfafstetter Basin Classification (Level 6) for Australasia



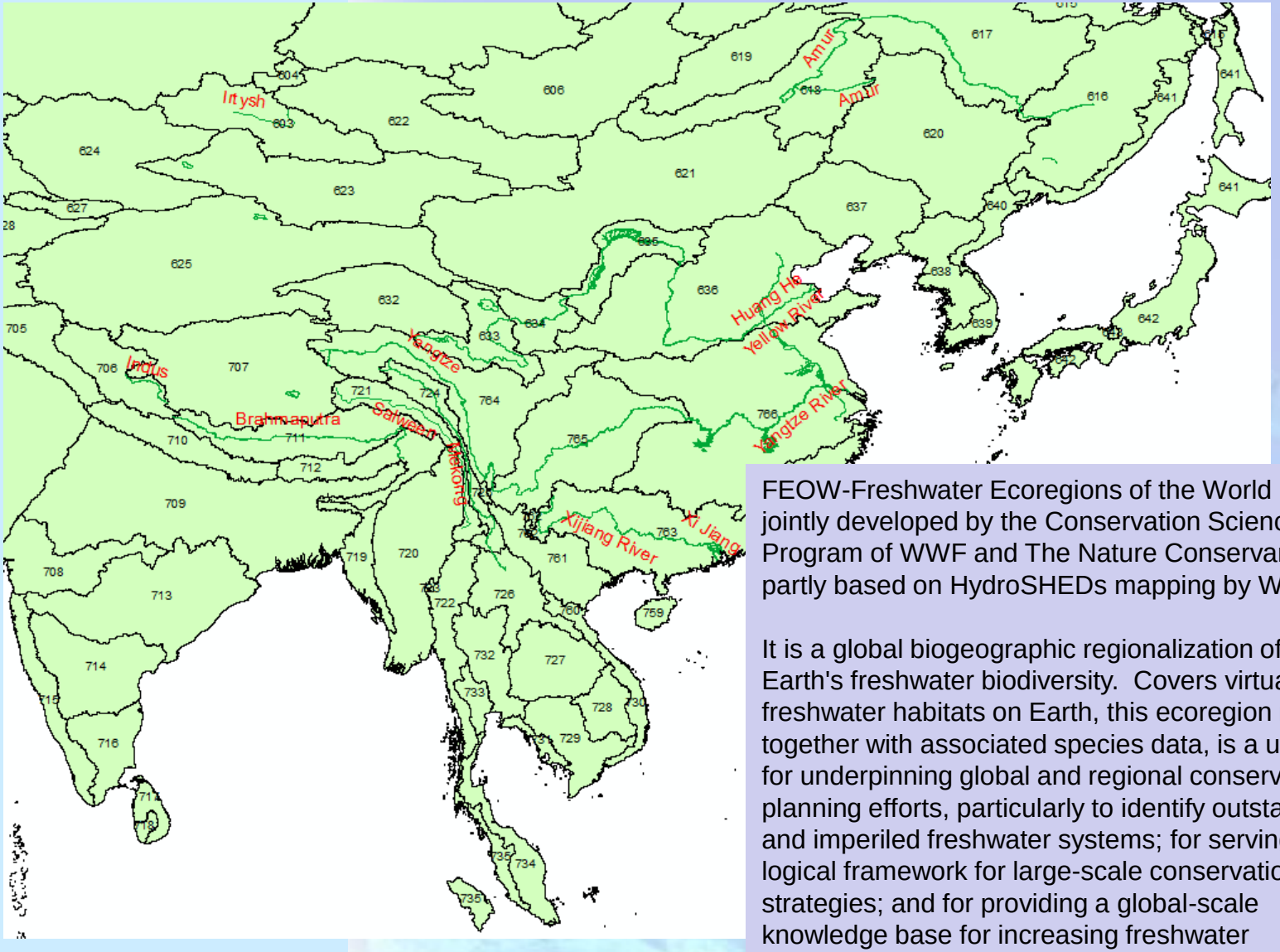






Level 6 is the smallest basin classification. Is it at a scale suitable for encompassing river basins/drainages and distribution of freshwater fishes in Australasia. Is there expertise to identify/name the basins delineated so that it can be used by the AquaMaps model?

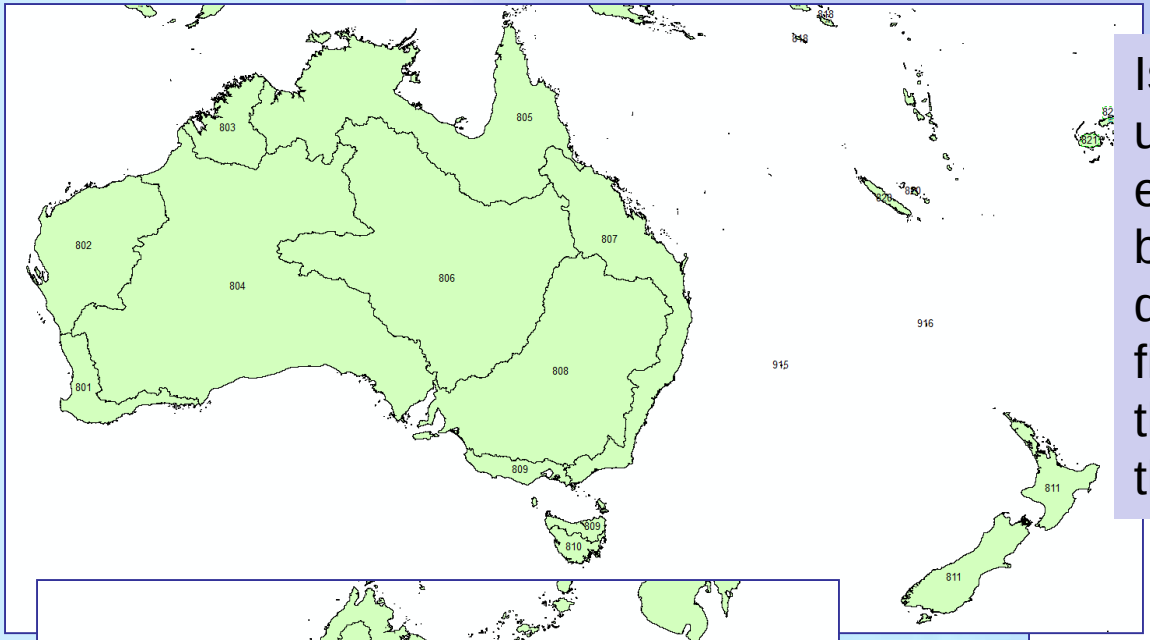
Freshwater Ecoregions (FEOW) for Mainland Asia

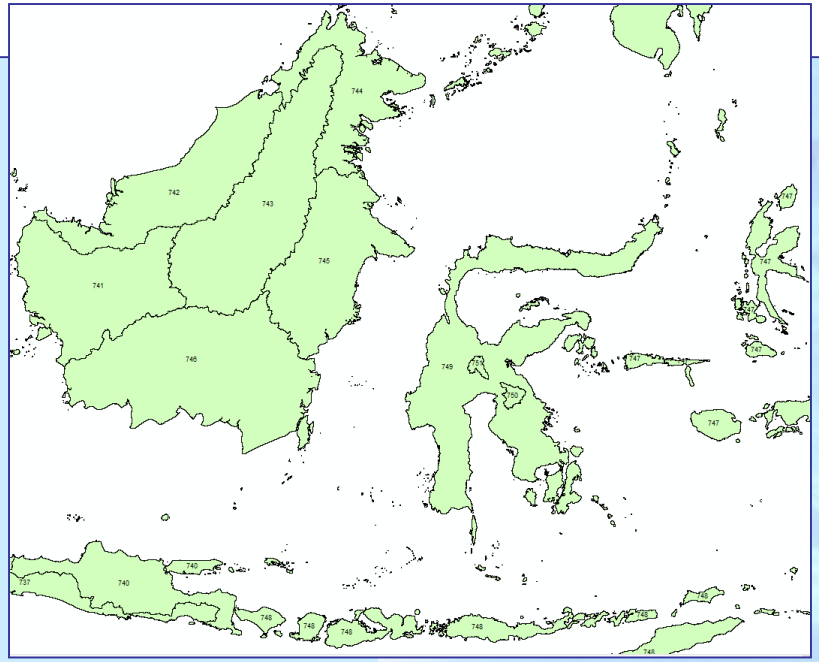


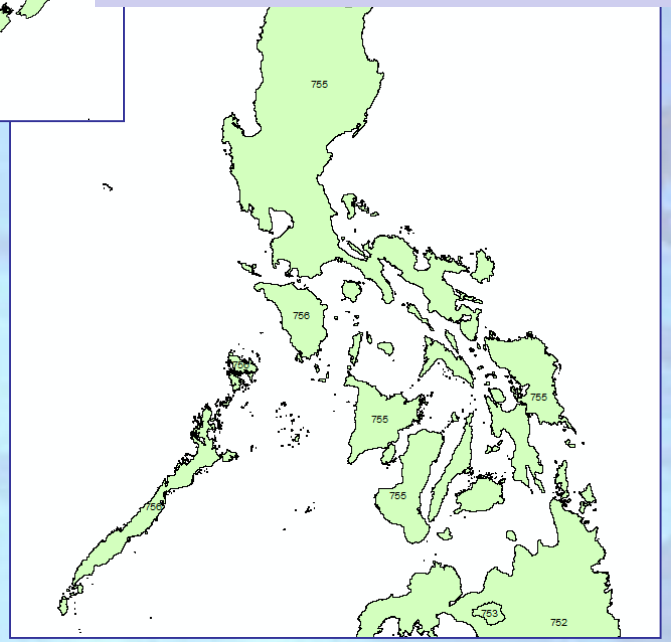
FEOW-Freshwater Ecoregions of the World has been jointly developed by the Conservation Science Program of WWF and The Nature Conservancy, partly based on HydroSHEDs mapping by WWF.

It is a global biogeographic regionalization of the Earth's freshwater biodiversity. Covers virtually all freshwater habitats on Earth, this ecoregion map, together with associated species data, is a useful tool for underpinning global and regional conservation planning efforts, particularly to identify outstanding and imperiled freshwater systems; for serving as a logical framework for large-scale conservation strategies; and for providing a global-scale knowledge base for increasing freshwater biogeographic literacy.

Freshwater Ecoregions (FEOW) for Australasia







Is the scale of FEOW units suitable for encompassing river basins/drainages and distribution of freshwater fishes in Australasia? Are they too broad, e.g., for the Philippines?

For fw AquaMaps, the mapping parameters used are:

- elevation
- mean annual temperature
- soil pH (but not used in AqM for Europe)
- soil moisture
- soil carbon
- annual mean precipitation
- Compound Topographic Index (but not used in AqM Europe)

As for gaps in the map---the model still lacks a definitive delineation of freshwater drainages/basins for most of Asia (Central, West, South, Southeast Asia) and Australia. We need experts to identify and name the drainages/basins into sublevels to which freshwater ecosystems in these subregions can be assigned.

It is useful for us to work with shapefiles so we can associate with FB data.

Fish Sounds

n = 90

Sort By: (•) Species ( ) English name ( ) Family

Species	English name	Fami
Albula vulpes	Bonefish	Albulidae
Alectis ciliaris	African pompano	Carangidae
Alphestes afer		
Anguilla rostrata		
Anisotremus virginicus		
Ariopsis felis		
Brevoortia tyrannus		
Carangoides bartholomaei		
Caranx crysos		
Caranx hippos		
Caranx latus		
Caranx ruber		
Centropomus ensiferus		
Centropristis striata		
Cephalopholis cruentata		
Cephalopholis fulva	Coney	Serranidae
Chloroscombrus chrysurus	Atlantic bumper	Carangidae
Clupea harengus	Atlantic herring	Clupeidae

For a database of fish sounds, we can propose some fields and controlled vocab

Language: English ▾ FishBase

List of Sound for *Albula vulpes*

n = 4

Main Ref.	Sound File	Type	Production
35830	ALVUL_S1	clicks, scratches, knocks	yes, active sound production
35830	ALVUL_S2	thumps, booms	yes, active sound production
35830	ALVUL_S3	thumps, booms	yes, active sound production
35830	ALVUL_S4	escape kno	

Glossary

Comments & Corrections Sign our Guest

Sounds Made by *Albula vulpes*

Picture by Patzner, R.

Please be patient while sound file is loaded. You may have to increase volume settings.

If you did not hear the sound. Click here to download sound file.

Sound produced	yes, active sound production
Type of sound produced	clicks, scratches, knocks
Sound production organ	teeth & swimbladder
Sound mechanism	vibration, stridulation
Behavioural context	feeding sounds
Reference	Fish, M.P. and W.H. Mowbray, 1970
Remark	

Entered by Kaschner, Kristin on 08.24.01

Fish, M.P. and W.H. Mowbray, 1970. Sounds of Western North Atlantic fishes. A reference file of biological underwater sounds. The John Hopkins Press, Baltimor.

Environmental Biology of Fishes **33**: 351–358, 1992.

Species produce different sounds in its lifetime.

Sounds produced by spawning fishes

Phillip S. Lobel
Woods Hole Oceanographic Institution, Woods Hole, MA 02543, U.S.A.

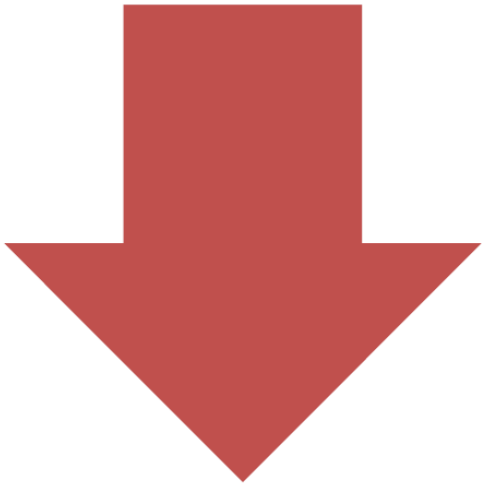
Received 12.9.1990 Accepted 23.1.1991

Key words: Hypolectrus, Scarus, Serranidae, Scaridae Fish spawning, Underwater acoustics

Synopsis

Low frequency sounds are shown to be associated with the spawning of two Caribbean coral reef fishes: the hamlet, *Hypoplectrus unicolor* (Serranidae) and the striped parrotfish, *Scarus iserti* (Scaridae). Both fishes produce distinctive sounds while broadcasting gametes in midwater. *H. unicolor* produces sounds via muscle stimulation of the swimbladder. Fin movements among group spawning *S. iserti* produce hydrodynamic noise. Although reproductive behaviors of these two species have been previously studied in detail, the association of sounds with mating is new. The mating sounds cannot be easily detected by human hearing underwater but are recordable using a hydrophone. The sounds are distinct and recognizable enough to allow counting and acoustic mapping of mating events in these species.

Information Gaps



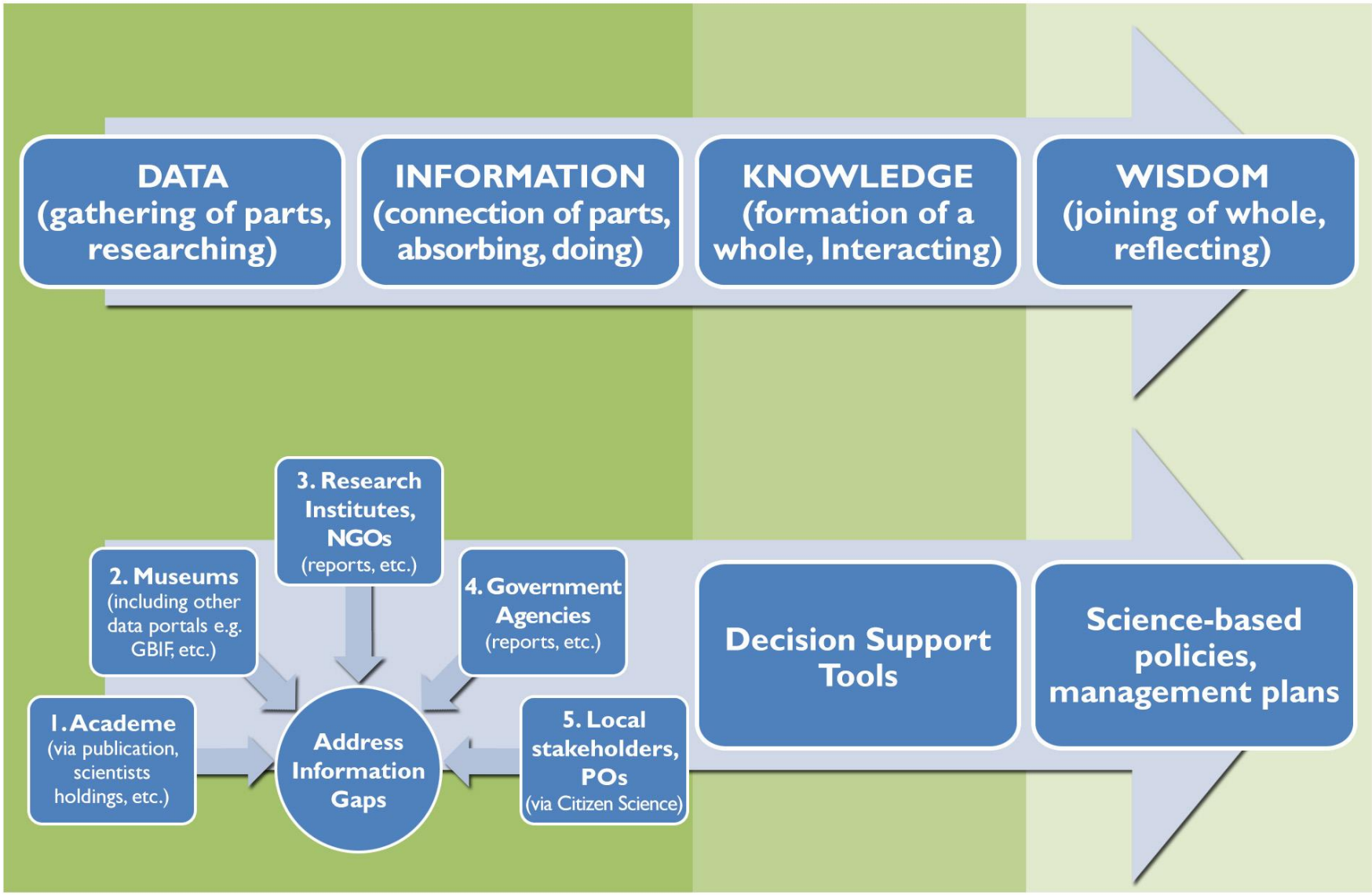
REAL

- No available information
- In other languages and scripts

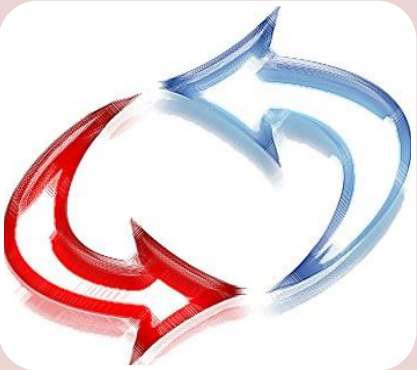
DOUBTFUL

- Information not incorporated in FishBase
- No reference or information still in grey literature

Collaborative scheme to complete information

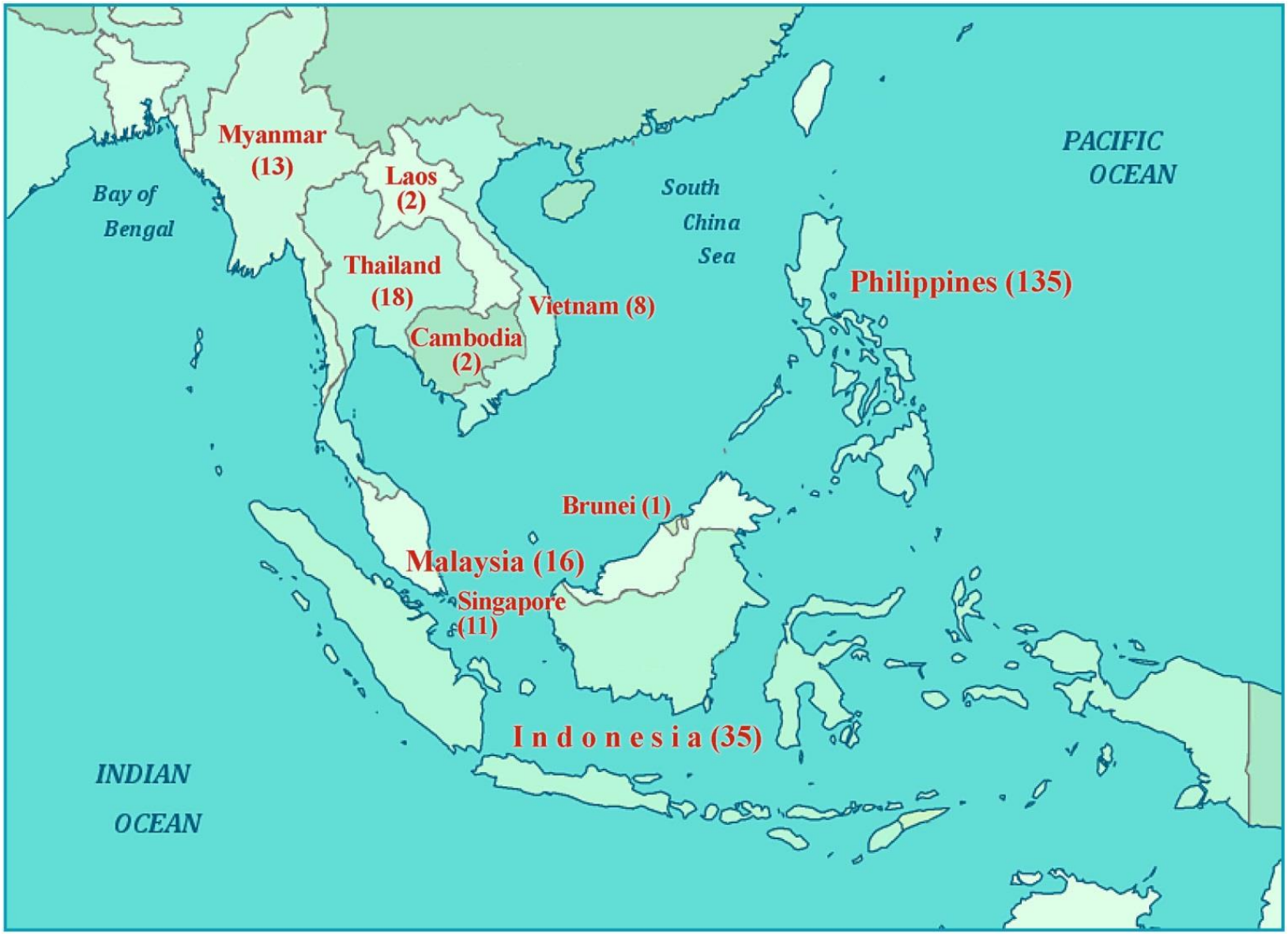


Collaboration



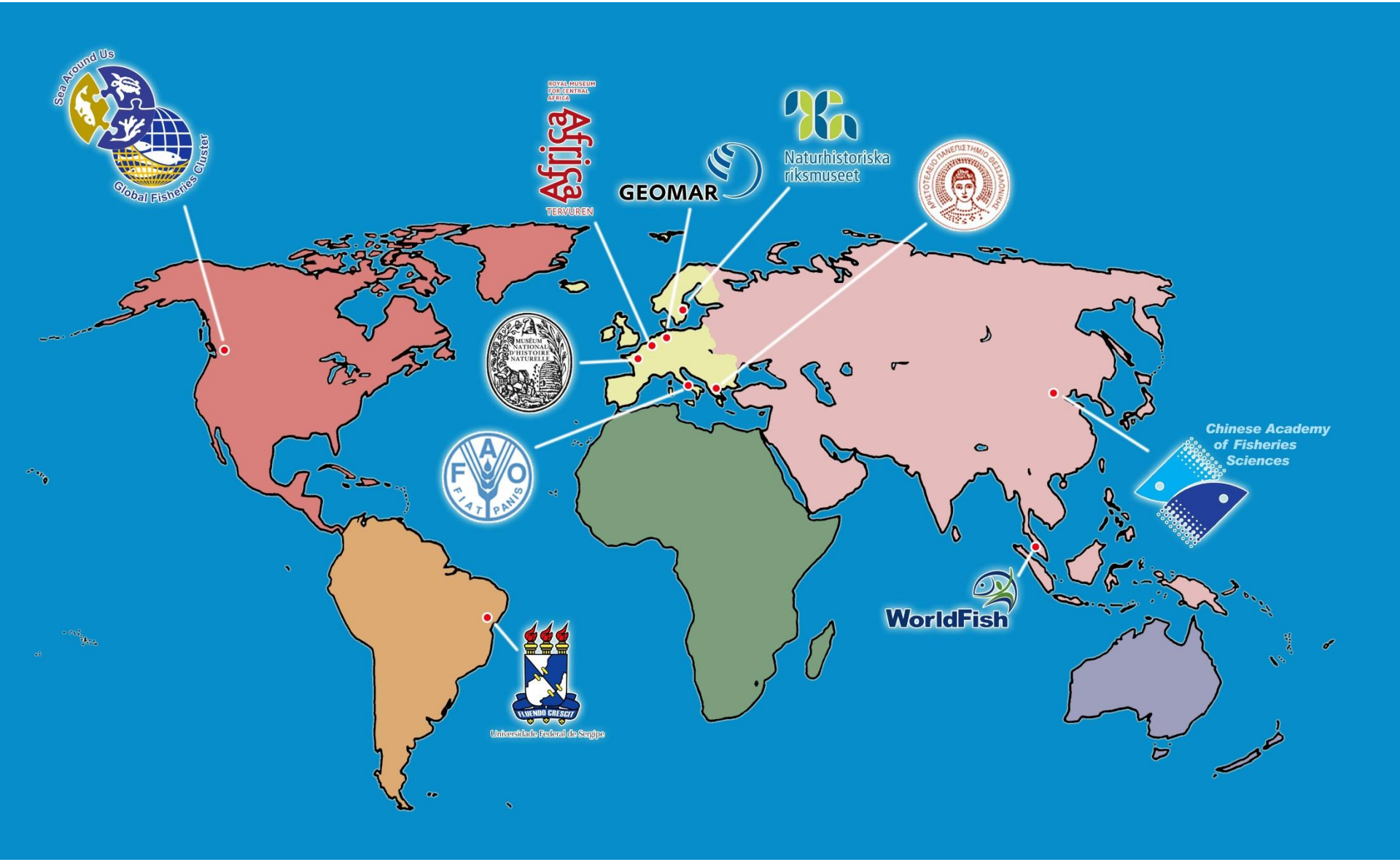
Information sharing	Feedback/ review on data/tools/ reports	Analyses and co-authorship on papers	Collaborative projects

Collaborators in ASEAN



FishBase Consortium Members

(North and South America, Europe, Asia)



FishBase

Maraming salamat!
Thank you!

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