Frogs and reptiles Backgrounds and Progress

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What is Herptiles?

- Amphibians



- Reptiles

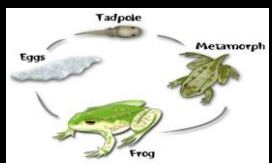



What is Herptiles?

- Quite diverse group
  - In body size

  - Habitat preference

  - Life-circle



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Background on Herpetofauna in Lower Mekong Basin

- Long history
  - Gunther (1860): On the Reptiles of Siam
  - René Bourret (1938 – 1942): Les Batracienne; Les Turtles; Les Serpent de L'Indochine
  - Douve (1970): Serpents du Laos
  - Smith (1970): Snakes of South Vietnam
  - Dao et al (1986): Reptiles of North Vietnam
- Recent studies (after 1980)
  - Dozens studies carried out in LMB

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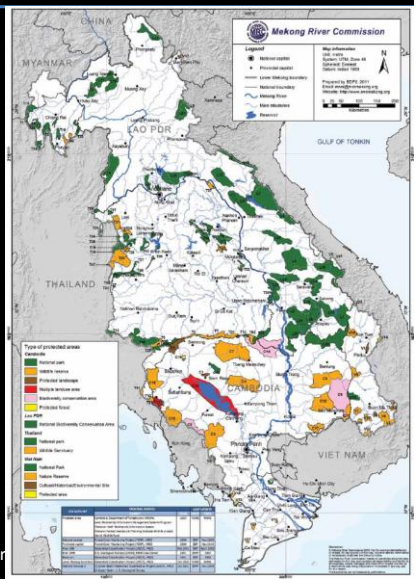
Background on Herpetofauna in Lower Mekong Basin

- but limited information
  - Most studies focused on taxonomy, distribution, species composition (with additional info on population status, threats)
  - focused on protected areas or biodiversity hotspot
  - few studies focused on human exploitation, wildlife trade



Background on Herpetofauna in Lower Mekong Basin

- Current knowledge:
  - Amphibian: 316 species (AmphibiaWeb)
  - Reptile: 686 species (Reptile Database)
  - ❖Very little information is available specifically along the Mekong mainstem.
  - ❖Lake of information on population status and trend, and behavioural ecology of most species

Main relationships with the flow of sediments and water

- Water-dependant species
  - Most amphibians rely on freshwater habitat
  - Several families of reptiles (e.g. Acrochordidae, Homalopsidae, Geoemydidae, ...)
- Prefer living in area with
  - Still open / low flowing freshwater
  - Low water-level fluctuation
  - Low sediment flow (low level of water contamination)
  - Associated with sandbars and riverbanks

Selection of Indicators

No.	Indicator
RMiAmphi	Ranid and Microhilid amphibians
AquSerp	Aquatic serpents
SAquSerp	Semi-aquatic serpents
AquTur	Aquatic turtles
SAquTur	Semi-aquatic turtles
Amphib	Amount of Amphibians available for human exploitation
SAquRep	Amount of Aquatic/semi-aquatic reptiles available for human exploitation
SpAmphib	Species richness of riparian/floodplain amphibians
SpRep	Species richness of riparian/floodplain reptiles
DivAmphib	Diversity riparian/floodplain amphibians
DivRep	Diversity riparian/floodplain reptiles

Selection of Indicators

Indicator	Description	Species
Ranid and microhylid amphibians	- These species are associated with water bodies for whole or part of their life-cycle.	*Hylarana nigrovittata* *Hoplobatrachus rugulosus*

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Selection of Indicators

Indicator	Description	Species
Aquatic serpents	- viviparous species - lives entirely in water - feeds mainly on fishes and other aquatic species.	*Enhydris* spp *Cylindrophis rufus*

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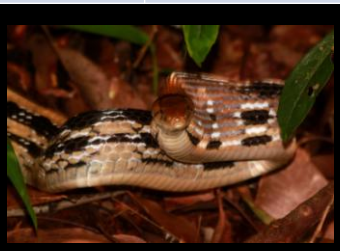
Selection of Indicators

Indicator	Description	Species
Semi-aquatic serpents	- oviparous snakes; - live on the ground or in the trees ; - feed on fishes and other aquatic species; - lay their eggs on the ground.	*Coelognathus radiatus*, *Elaphe* spp., *Ptyas* spp. *Python bivittatus*



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Selection of Indicators

Indicator	Description	Species
Aquatic turtles	- live and feed mainly in water bodies - lay their eggs on sandbars or river/stream banks.	*Amyda cartilaginea* *Malayemys subtrijuga*

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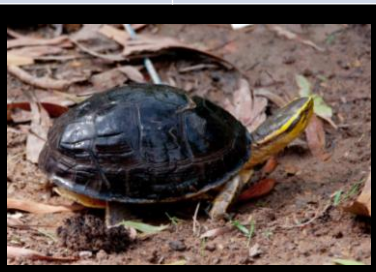
Selection of Indicators

Indicator	Description	Species
Semi-aquatic turtles	- live in grasslands, and riverine and swamp forests. - nest on sandbars and riverbanks and also in the tidal areas of large estuaries	*Cuora amboinensis* *Heoesemys grandis*



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Selection of Indicators

Indicator	Description	Species
Amphibian avaliable for exploitation	- Large in size - Live in the floodland or along rivers	*Hoplobatrachus rugulosus*, *Fejervarya limnocharis*, *F. cancrivora* (lowland) *Limnonectes* spp., *Ordorrana* spp. (upland)

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Selection of Indicators

Indicator	Description	Species
Reptiles available for exploitation	- Provide food, skin, medicinal materials	Aquatic and semi-aquatic reptiles (turtles, snakes, lizards)

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Selection of Indicators

Indicator	Description	Species
Species richness of riparian/FP amphibians	- the number of different species represented in an ecological community region. - does not take into account the abundances of the species	All species live in relevant habitats
Species richness of riparian/FP reptiles	- the number of different species represented in an ecological community region. - does not take into account the abundances of the species	All species live in relevant habitats

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DRIFT Herpetofauna Indicators

Herpetofauna indicators	Links
Ranid & microhylid amphibians	Hydro., Hydru., Sed., Wqua., Geom., Veg. Macroin., Fish, Birds
Aquatic serpents	Hydro., Hydru., Sed., Wqua., Geom., Veg., Fish, Birds
Semi-aquatic serpents	Hydro., Hydru., Sed., Veg., Fish, Birds
Aquatic Turtles	Hydro., Hydru., Sed., Wqua., Geom., Veg., Fish,
Semi-aquatic Turtles	Hydro., Hydru., Sed., Geom., Veg., Fish.
Amphibians -human exploitation	Hydru., Herp
Aqu/semi-aqu reptiles: human explitation	Herp
Species richness of riparian/FP amphibians	Hydro., Hydru., Sed., Geom., Veg
Species richness of riparian/FP reptiles	Hydro., Hydru., Sed., Geom., Veg

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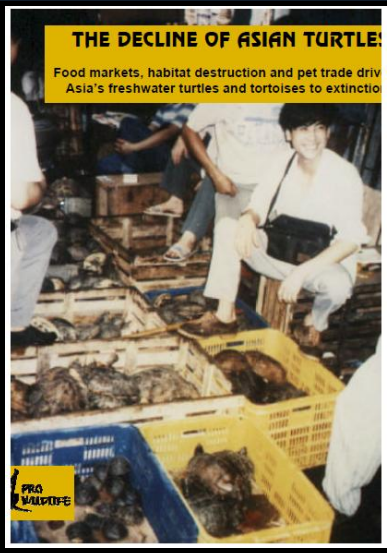
Herptile indicators by Focus Areas

Indicator	Indicator Species	FA1	FA2	FA3	FA4	FA5	FA6	FA7	FA8
Ranid & microhylid amphibians	*Rana nigrovittata*	P	P	P	P	P			
	Hoplobatrachus rugulosus		P	P	P	P	P	P	P
Aquatic serpents	*Cylindrophis ruffus*		P	P	P	P	P	P	P
	Enhydris bocourti				P	P	P	P	P
Semi-aquatic serpents	*Coelognathus radiatus*	P	P	P	P	P	P	P	P
	Python bivittatus	P	P	P	P	P	P	P	P
Aquatic Turtles	*Amyda cartilaginea*		P	P	P	P	P	P	P
	Malayemis subtrijuga		P	P	P	P	P	P	P
Semi-aquatic Turtles	*Cuora amboinensis*			P	P	P	P	P	P
	Heosemys grandis		P	P	P	P	P	P	P
Quantity of amphibians - human exploitation		P	P	P	P	P	P	P	P
	All species	P	P	P	P	P	P	P	P
Quantity of aquatic/ semi-aquatic reptiles - human exploitation	All species	P	P	P	P	P	P	P	P
Species richness of riparian/FP amphibians		P	P	P	P	P	P	P	P
Species richness of riparian/FP reptiles		P	P	P	P	P	P	P	P

Status and Trend Assessment

- Assessment methods
  - Information from published/unpublished documents
  - Expert judgment



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Status and Trend Assessment

- Assessment methods
  - General assumption:
    - Ecological status along Mekong Mainstem and its plains was intact before 1900 (except Mekong Delta with 10% development);
    - Ecological status was slightly degraded from 1900 to 1950 ;
    - Ecological status was moderately degraded from 1950 to 1970
    - Ecological status was greatly degraded from 1970 to 2000

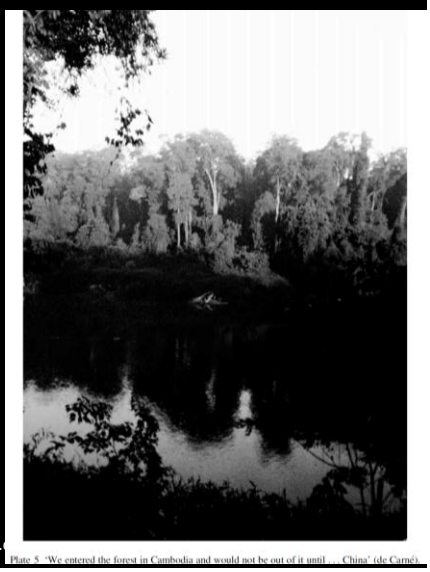

Plate 5 'We entered the forest in Cambodia and would not be out of it until . . . China' (de Carnè).

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