

## Outline

- ❖ The Amazon River
- ❖ Flooding
- ❖ Amazon flora and fauna

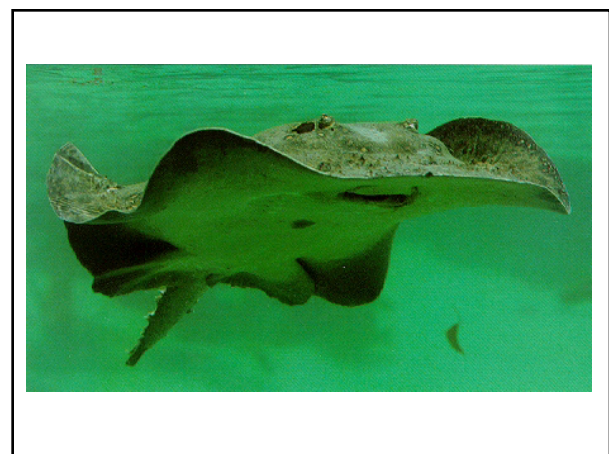
## ❖ Amazon development and geomorphology

## 🌐 Amazon: makings of a giant river

Length	6500 km
WS Area	Size of Canada (alternat)
Width	20-50 km/ /2-5 km
Depth	Avg: 30-50m
Volume discharge	10 x Mississippi 3500 x Fraser 1/5th the world

## 🌐 Major events in history shaping the Amazon

- ❖ 80 - 90 million years ago, Gondwanaland split apart
  - South America became a “floating island”
  - Tropical bonanza of niches
- ❖ Arrival of flowering plants (angiosperms)
  - 30,000 known flowering plants
- ❖ The Andean mountains arising in the last 15 million years
  - Plates collide (South American and Nazca)
  - The Amazon became one big huge lake and swamp ecosystem!
  - Stingrays evolve in inland seas cut off from the ocean



❖ 10 million years ago, during the Pliocene period, the Amazon river excavated its present course eastwards

❖ Polar ice caps locked & unlocked HUGE amounts of water

- Sea levels rose and fell

❖ Whitewater - eating a piece of the Andes!

❖ Clearwater tributaries (mercury - big problem)

❖ Blackwater rivers (Guinness-coloured)

- Incompletely-decomposed organic matter
- Neons and cardinals



The Andean mountains formed over the past 15 million years



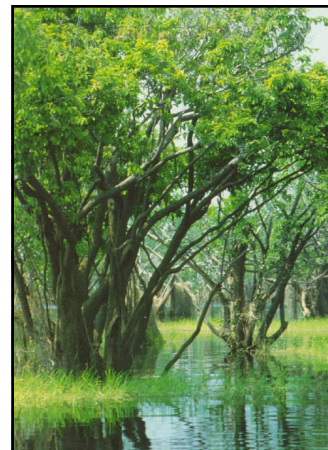
## 🌐 Flooding the Amazon

❖ Three features of the Amazonian floodplains

- Flooded forest
- Open waterbodies - "lakes"
- Floating meadows of herbaceous plants

❖ Flooded forest the largest

- 100,000 square kilometres
- Flooding time: 5-7 months of the year
- Small tributaries are like bristles in a giant ecological broom. Organic matter is swept downstream to the large, nutrient-poor river.
- Timing of plants fruiting: kapok vs shrubs



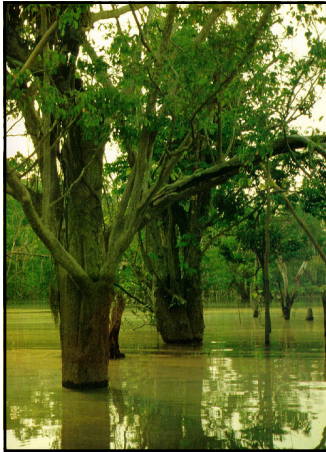
Dry season



Wet season







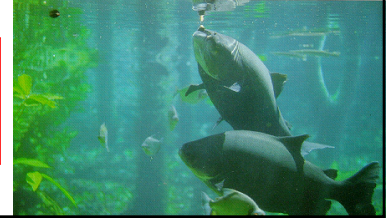
Trees are inundated for up to 10 months

The flooded forest provides foraging and cover to animals



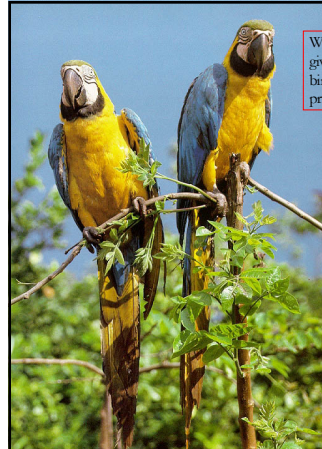
Stems and roots underwater provide refuge and invite prey for this predator - the Amazonian big-head turtle...

...and fruits and rubber tree seeds provide food for the *tambaqui*. There are >200 fruit-eating fishes.

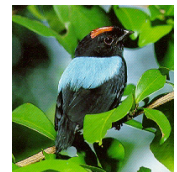


Fruit-eater of the flying form: toucan

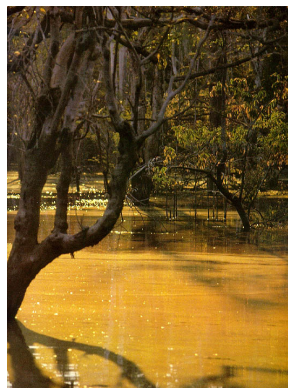
Rare and highly-adapted leaf eater: hoatzin



What feature gives away these birds' food preference?



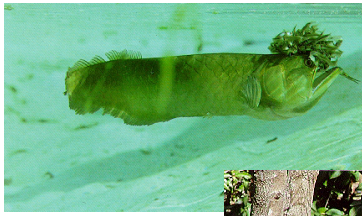
# 🌐 Flora and fauna of the Amazon flooded forest



Pink river dolphin

Tucuxi

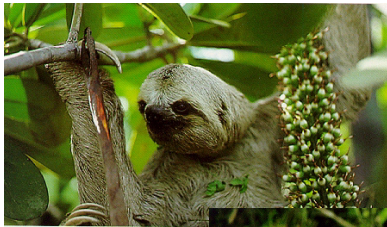




Arowana



Sloth



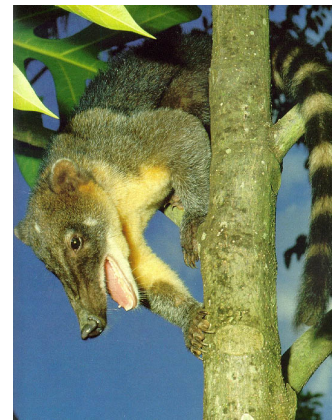
Capybara



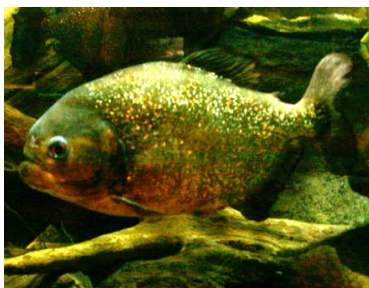
Giant  
river  
otter



Manatee



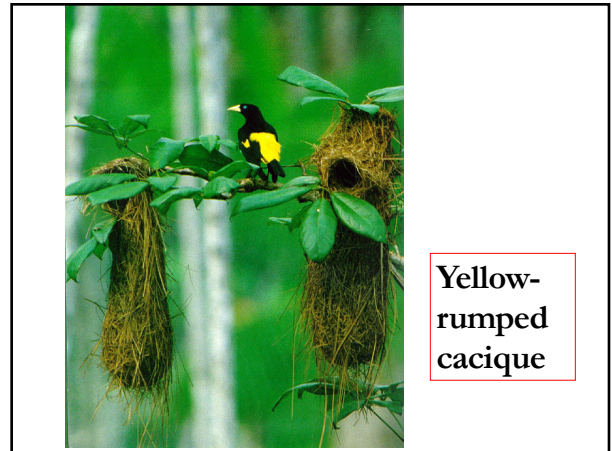
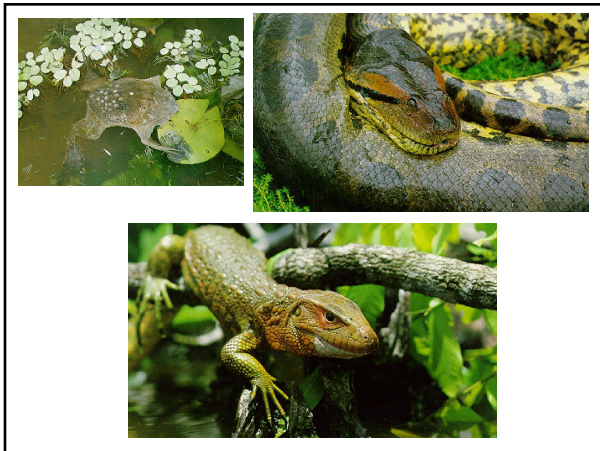
Coati



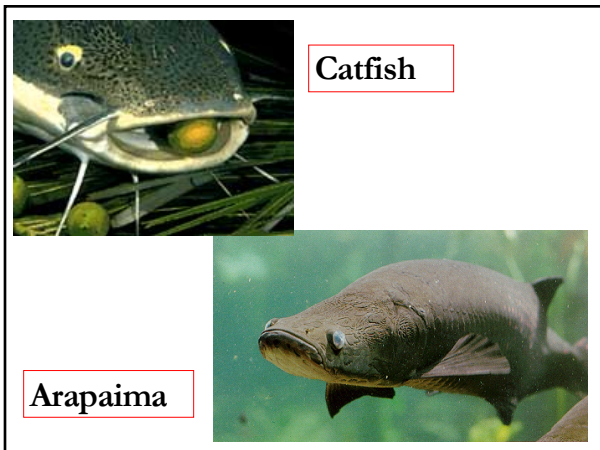
Piranha







Yellow-rumped cacique



Catfish

Arapaima

