

# Primatologie IX.



**Doc. Václav Vančata**

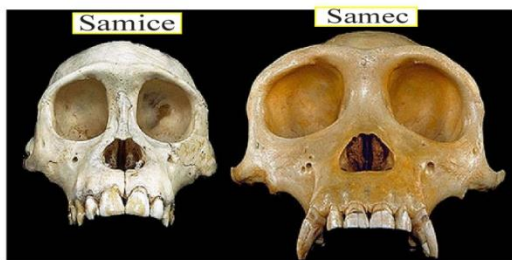
# Nadčeled' *Hominoidea*



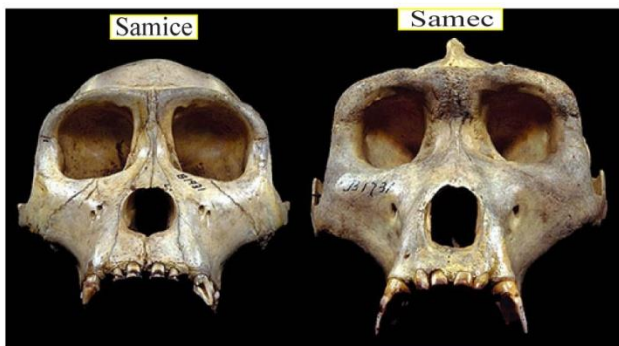


# Velcí lidoopi - monofyletická nebo polyfyletická skupina?

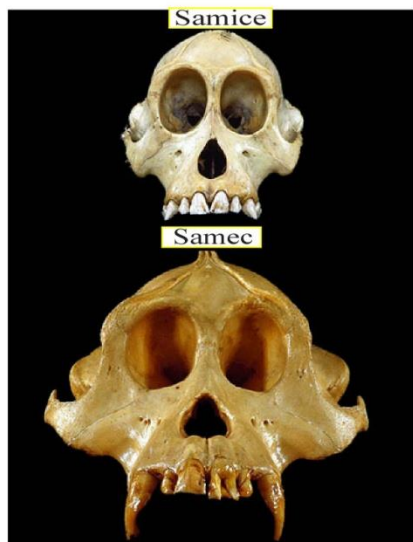
Šimpanz



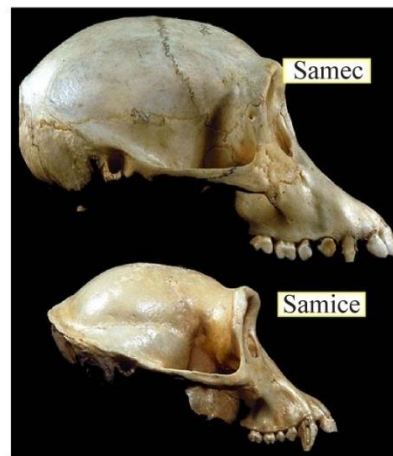
Gorila



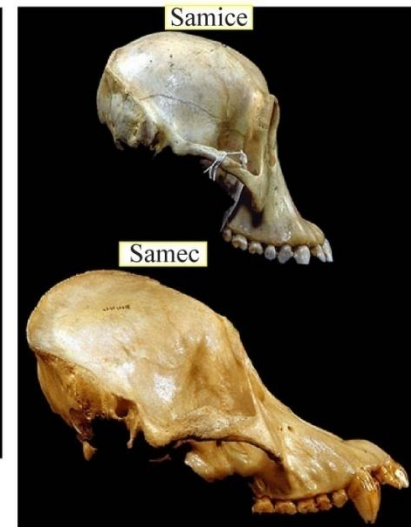
Orangutan



Šimpanz



Orangutan



Gorila

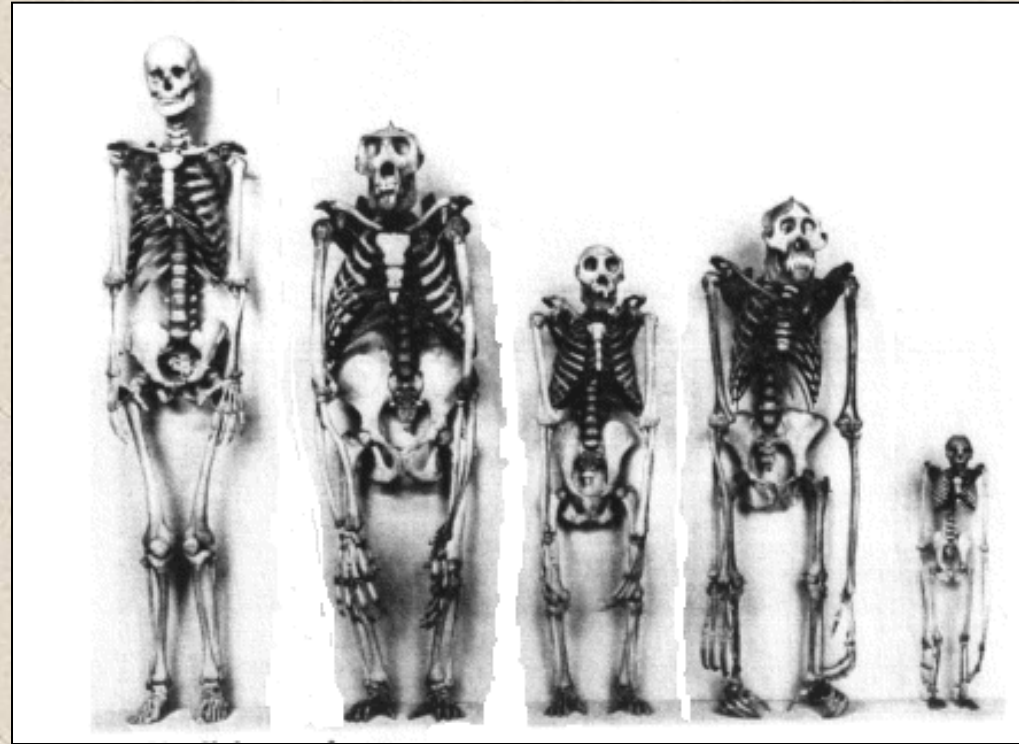
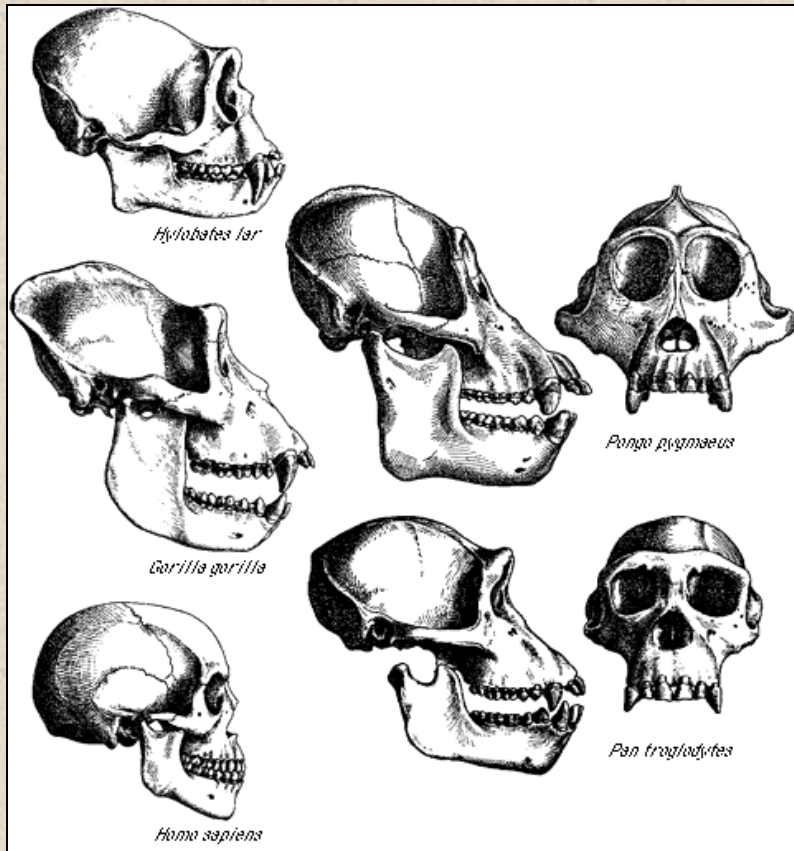


# Skelet velkých lidoopů

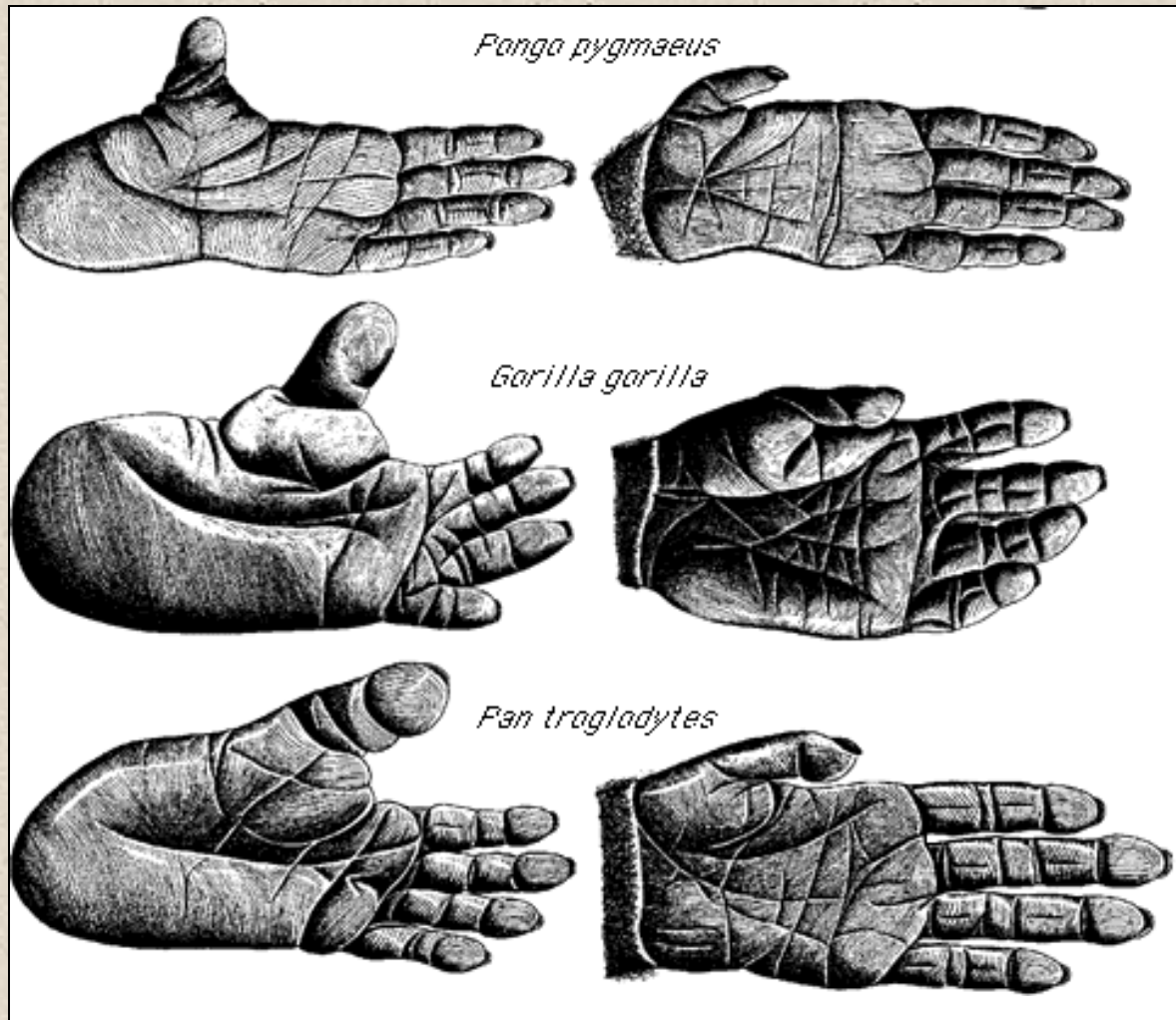




# Čeď *Hominidae* - charakteristické znaky - velcí lidoopi



# Ruka a noha velkých lidoopů



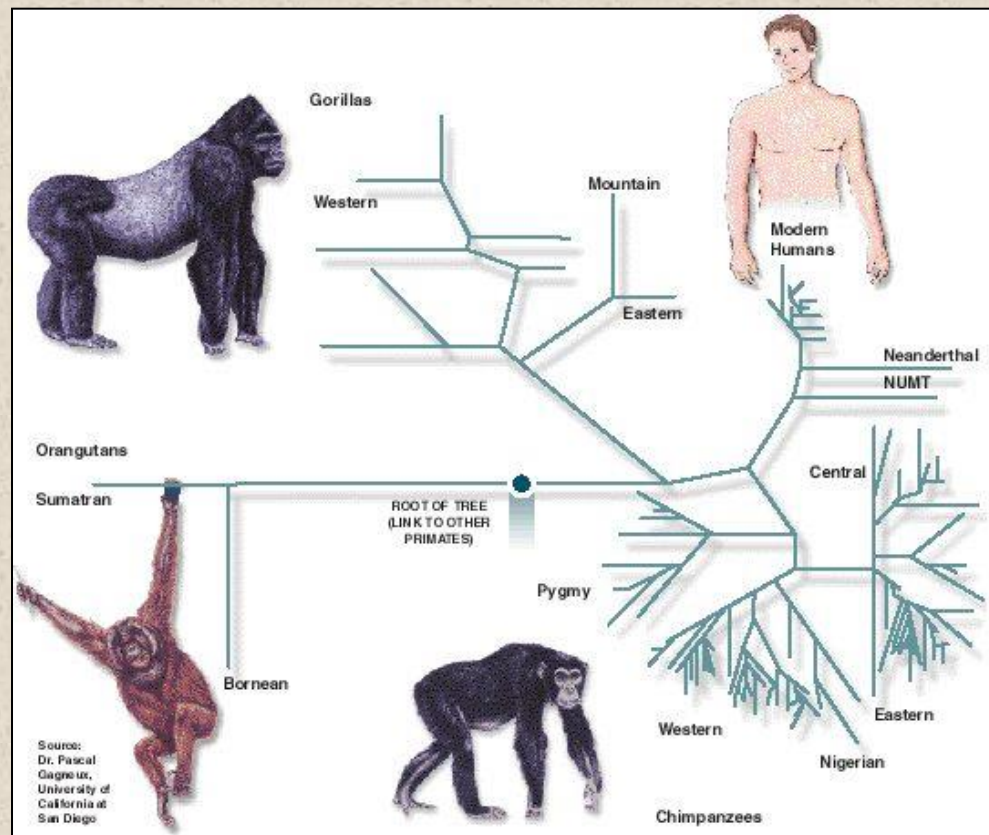


# Lokomoce a ekologie velkých lidoopů



# Genetická a biochemická příbuznost

Všichni velcí lidoopi mají stejný počet 48 chromozomů  
mají podobné imunitní, biochemické a hormonální profily  
a některé z krevních skupin jsou blízké člověku





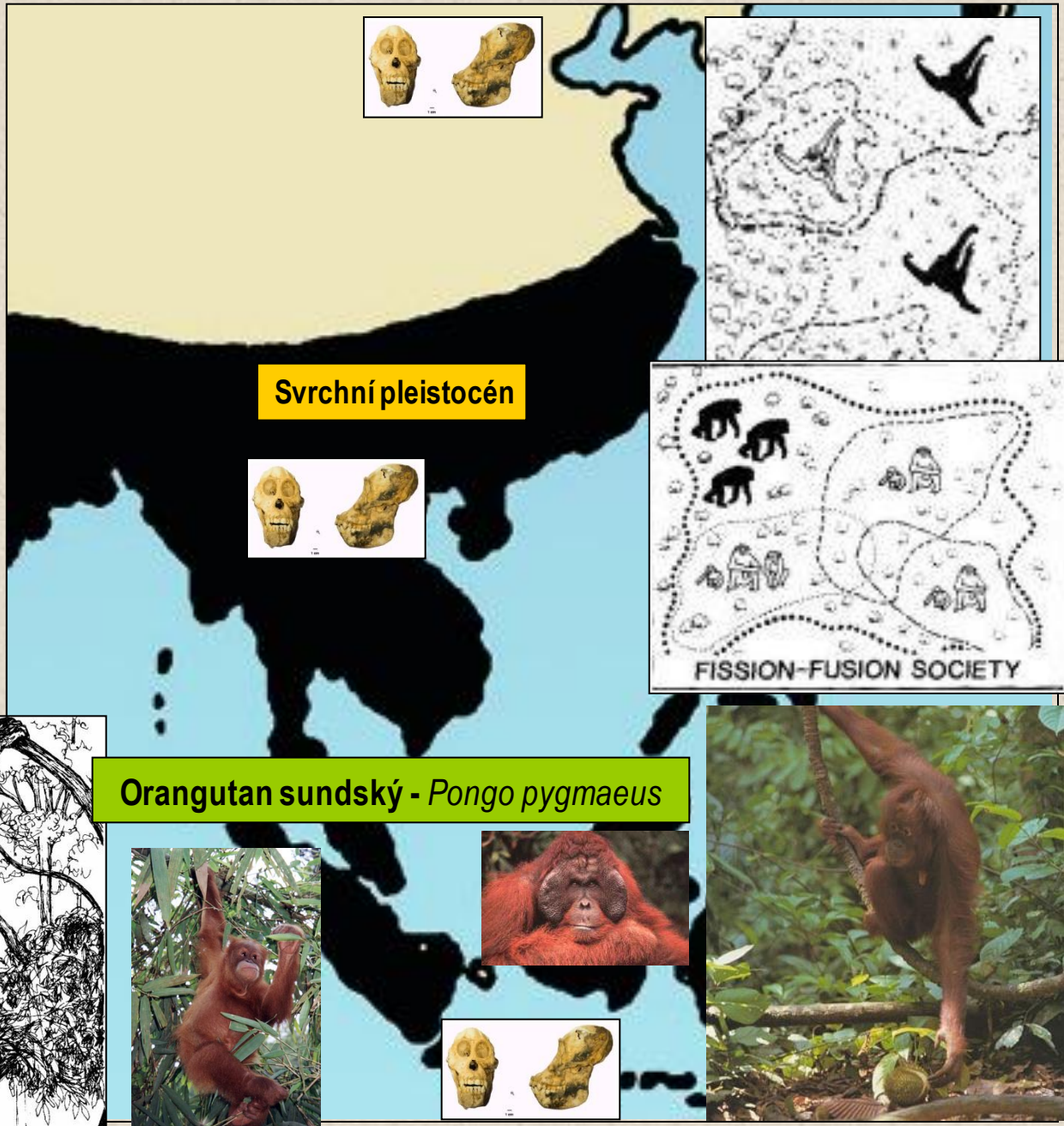
# Podčeled' *Ponginae*



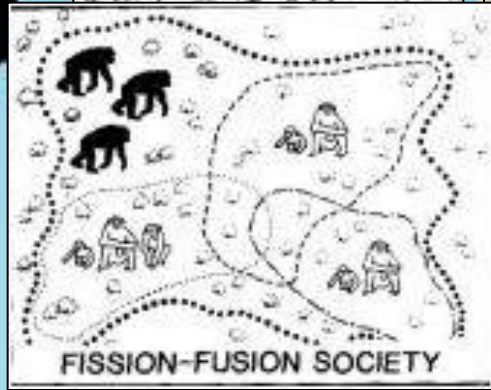




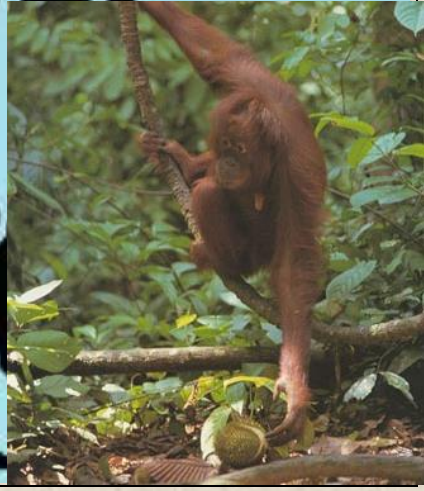
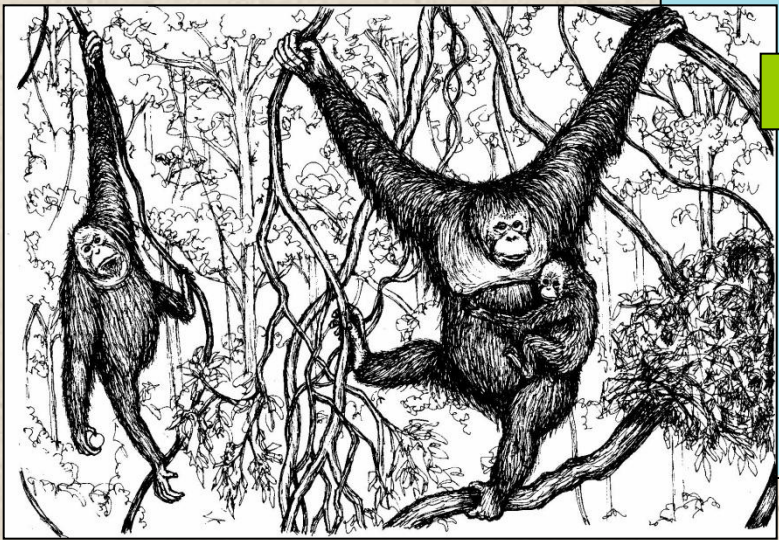
Rod  
orangutan  
*Pongo*



Svrchní pleistocén

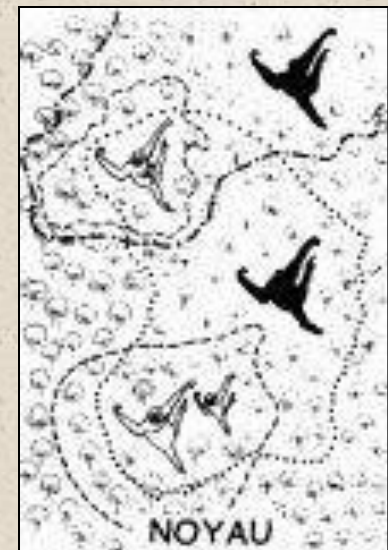
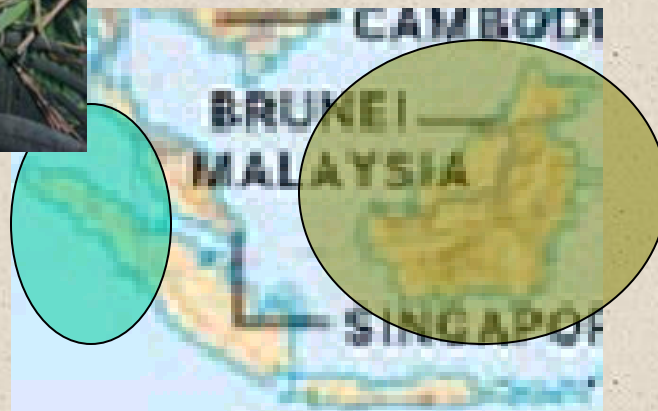


Orangutan sundský - *Pongo pygmaeus*





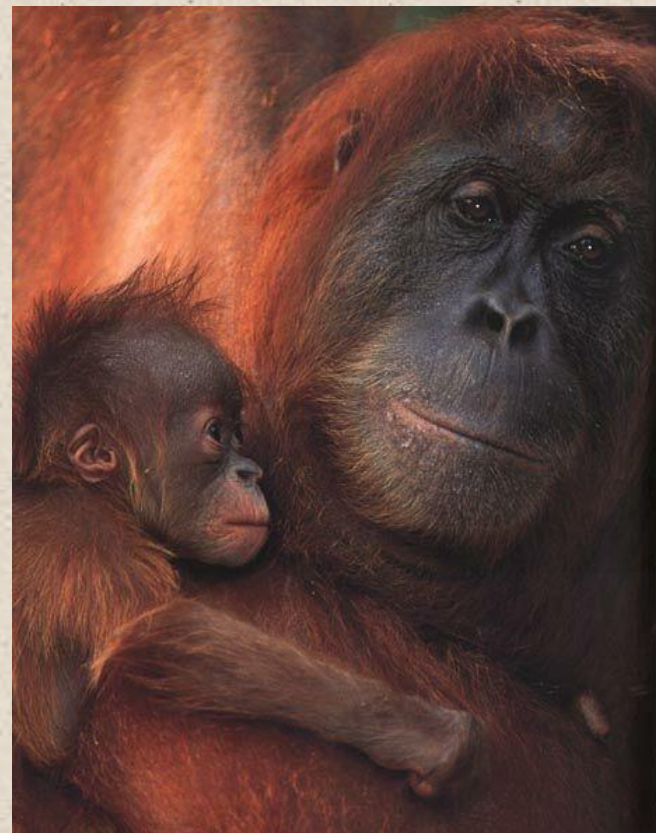
# Orangutan sundský - *Pongo pygmaeus*





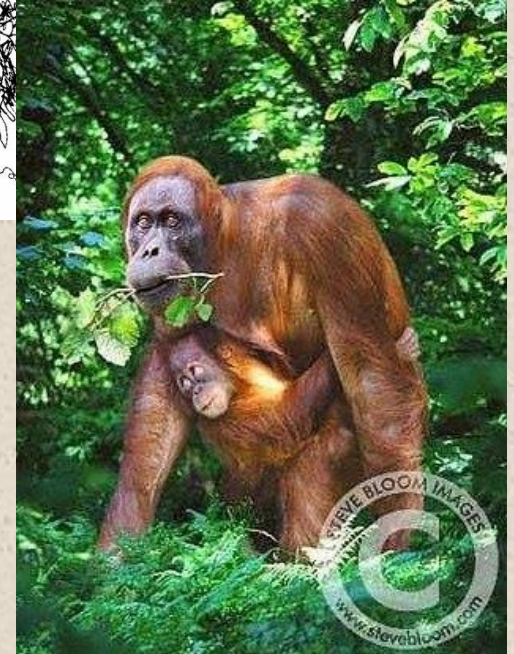
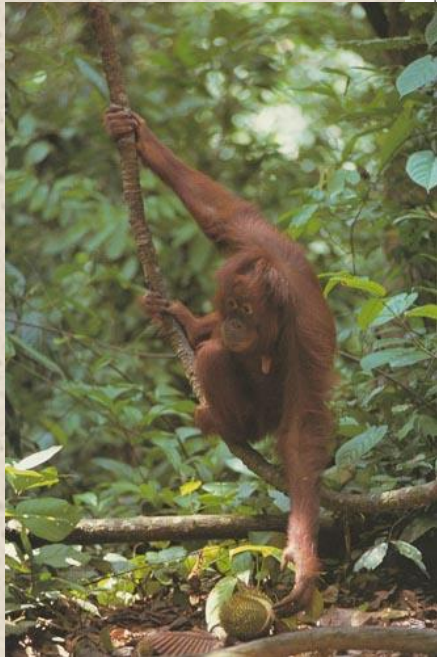
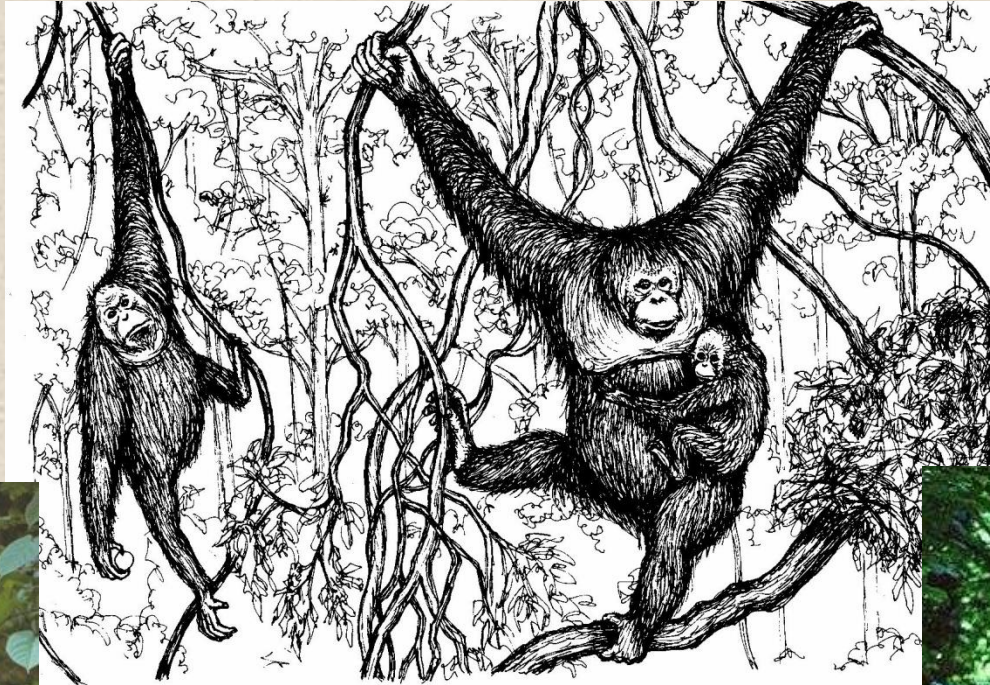
# Orangutan sundský - *Pongo pygmaeus* - biologie

GENUS	SPECIES	VÝSKYT	Hmotnost - samci	Hmotnost – samice	Index inter-membralis
Pongo	abeli	Sumatra	78500	35800	139
Pongo	pygmaeus	Borneo	77900	35600	139



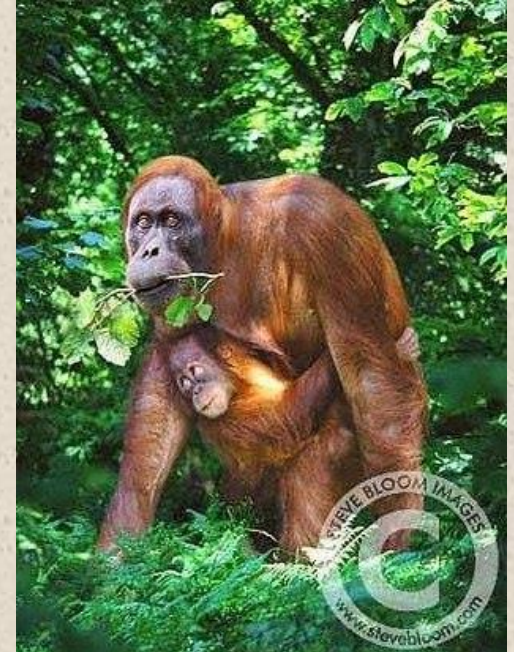
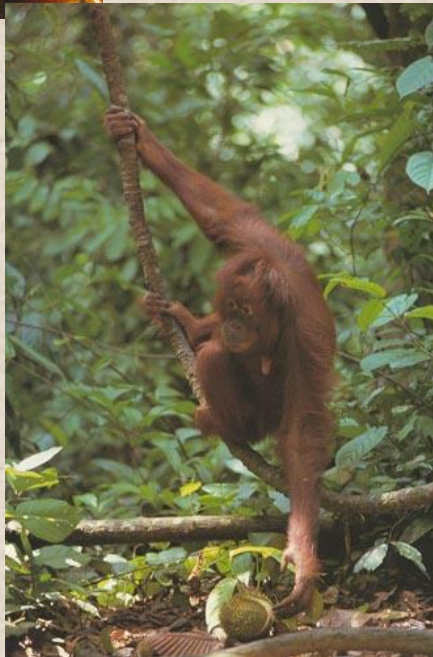
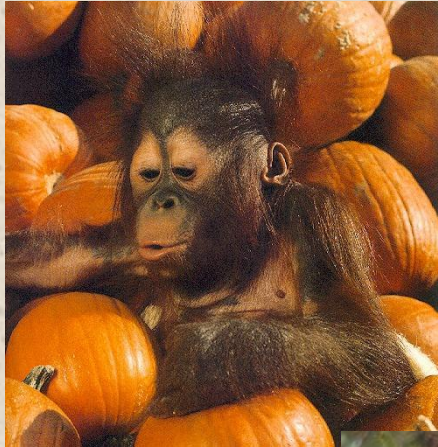


# Lokomoce orangutanů





# Ekologie orangutanů





# *Pongo p. pygmaeus* - orangutan bornejský







Unflanged Male

**Orangutan Range**

- Sumatran (Pongo abelii)
- Bornean (Pongo pygmaeus)

**Behavioral Study Sites**

- Sumatra
- Borneo
- Behavior observed at all sites

**TERMITE FEEDING**

Orangutans eat termites, from nests on the ground or in the forest canopy, by tapping the insects into their hands or sucking them out.



**LEAF WIPING**

Orangutans have been observed wiping their chins, eyes, and bodies with leaves. Sometimes this is to remove sticky residue left by food, but often the purpose is unclear.



**NESTBUILDING**

Each day the apes make fresh nests for sleep or day rest by breaking and weaving together branches to build a sturdy structure.



Nest size around 4 ft

**VARIATION**

Some use leaves as pillows, linings, covers, and possibly even mosquito repellent.

**THIRST QUENCHING**

Orangutans sometimes drink by dipping a hand into water and then dripping it into their mouths, but they get most hydration from food.



Male with facial flange

**VARIATION**

Some squeeze wet leaves like a sponge.

**VARIATION**

Some bite the bottom of a pitcher plant and suck out rainwater.

**VARIATION**

Some use leafy twigs to get water from very deep tree holes.

**UMBRELLA MAKING**

Orangutans make umbrellas to shelter from the rain, holding leaves over their heads and sometimes their backs.



**SNAG CRASHING**

Male orangutans push tree snags over to make noise as part of a display of dominant behavior.



**VARIATION**

Some ride the snag as it falls, grabbing onto vegetation before the snag hits the ground.

**"KISS SQUEAKING"**

Orangutans make a sound known as a kiss squeak to threaten other orangutans and humans.

**VARIATION**

Some kiss-squeak into a handful of leaves, then toss them on the ground.



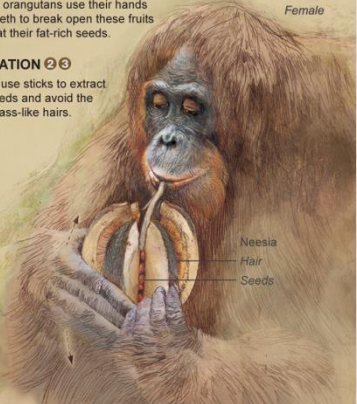
Juvenile

**NEESIA FEEDING**

In the rain forests where *Neesia* is found, orangutans use their hands and teeth to break open these fruits and eat their fat-rich seeds.

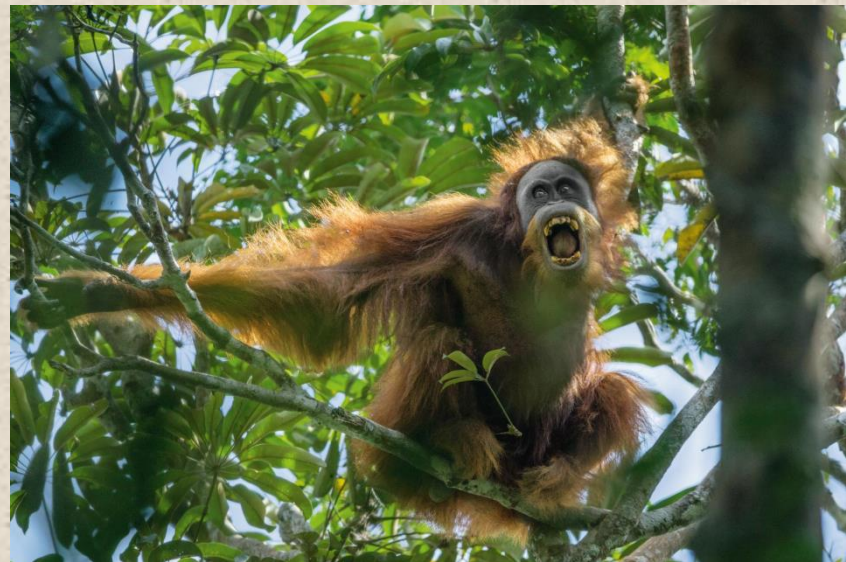
**VARIATION**

Some use sticks to extract the seeds and avoid the fibreglass-like hairs.



Female

Neesia  
Hair  
Seeds



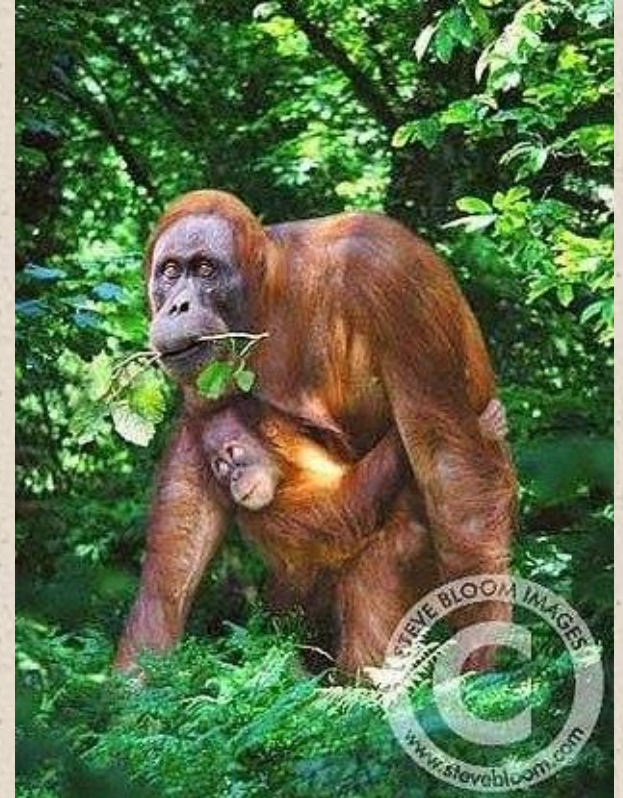


# Orangutan bornejský ekologie a sociální struktura



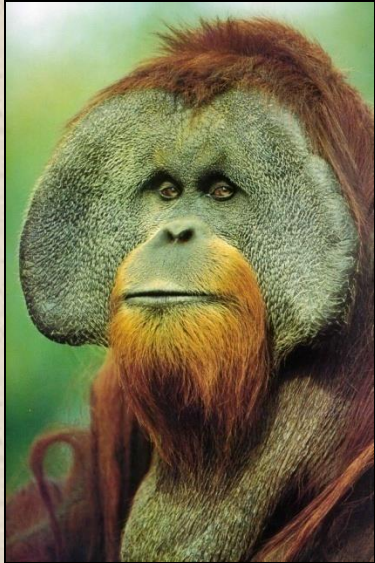


# *Pongo p. abeli* - orangutan sumaterský

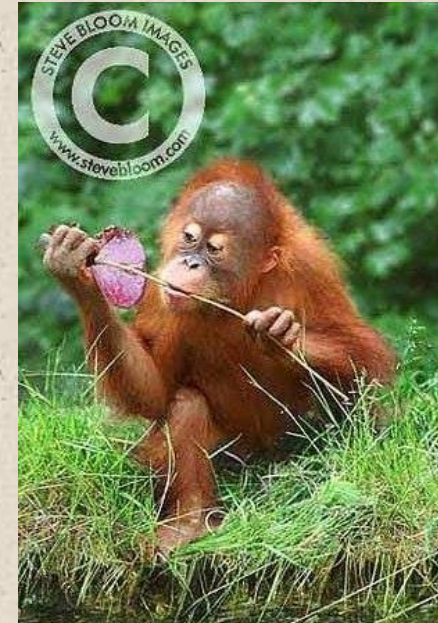
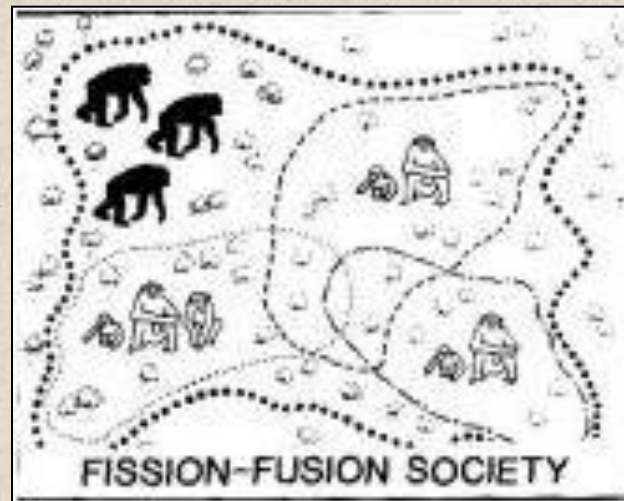




# Sociální struktura a chování orangutana sumaterského

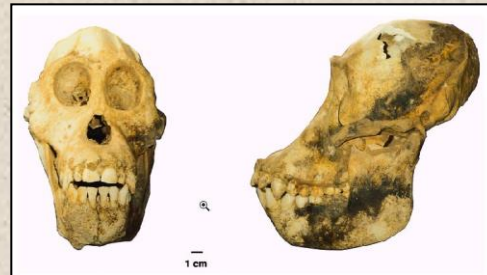


Orangutani vyrábějí nástroje  
a loví malé obratlovce  
Sumaterští orangutani  
vytvářejí kulturní tradice





# Orangutani – nástroje, voda a lov ryb







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# Čeled' *Hominidae*



*Gorilla*

*Paninae*



*Pan*

*Homininae*

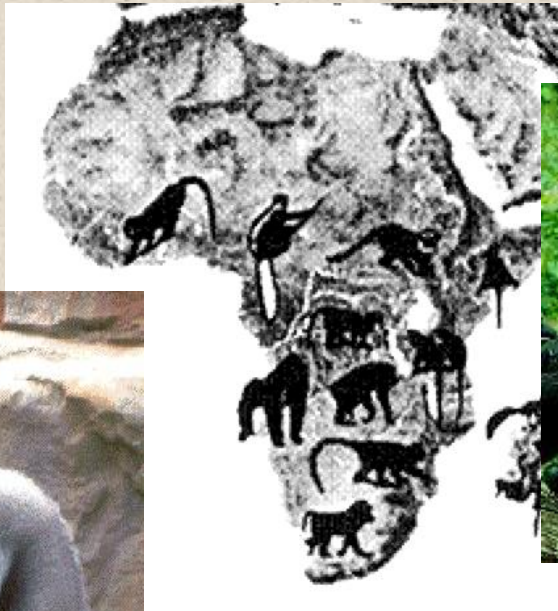


*Homo*

*Homininae*



# Podčeleď *Paninae* - gorily a šimpanzi

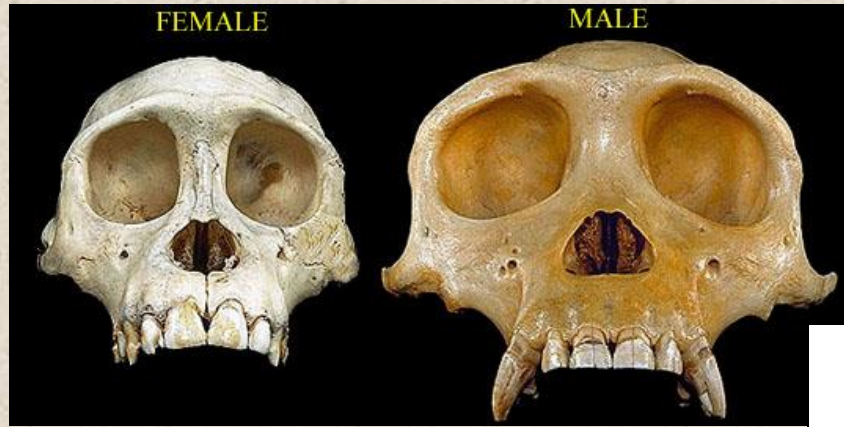
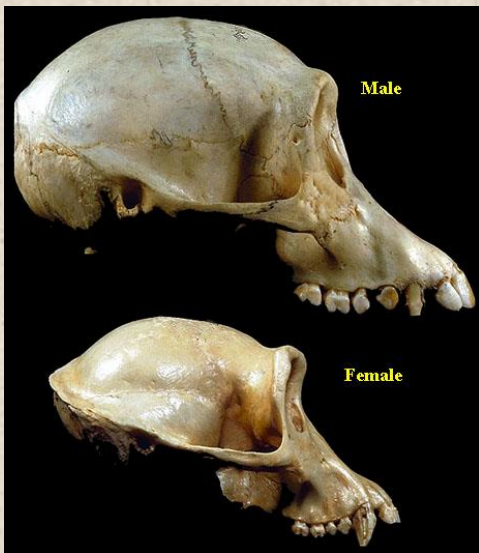


Franco de Waal, Frans Lanting.  
Bonobo: The Forgotten Ape  
(University of California Press 1997).





# Skelet *Paninae*



*Pan*

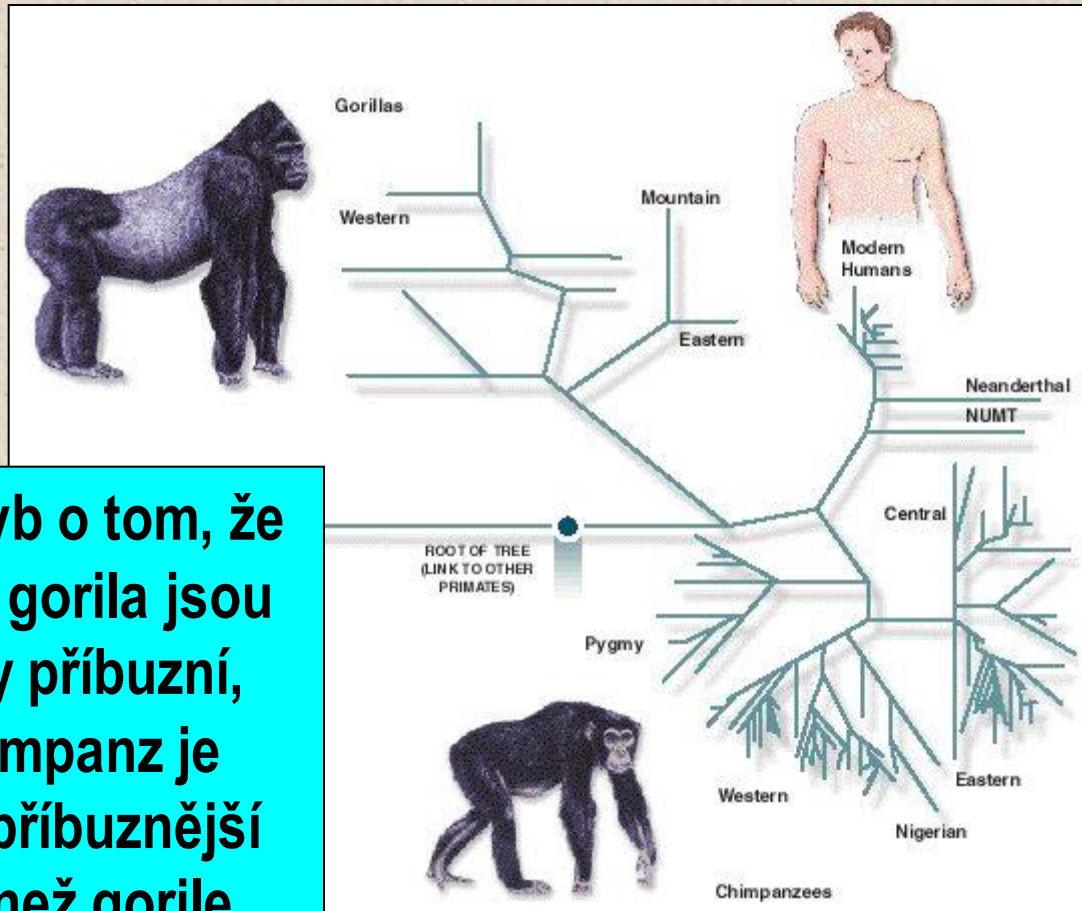
*Gorilla*





# Genetika hominidů

Afričtí lidoopi mají stejný počet 48 chromozomů a velmi podobné biochemické a imunologické charakteristiky



Není pochyb o tom, že šimpanz a gorila jsou geneticky příbuzní, avšak šimpanz je mnohem příbuznější člověku než gorile



# Systematika podčeledi *Paninae*

## podčeleď: *Paninae* - šimpanzi

### šimpanz učenlivý - *Pan troglodytes*

šimpanz čego - *P. t. troglodytes*

šimpanz hornoguinejský - *P. t. verus*

šimpanz východní - *P. t. schweinfurthi*

### šimpanz bonobo - *Pan paniscus*

### gorila obecná - *Gorilla gorilla*

gorila nížinná - *G. g. gorilla*

gorila nigerijská - *G. g. diehli*

(gorila horská – *Gorilla beringei*)

gorila horská (rwandská) - *G. g. beringei* (*G. b. beringei*)

gorila východní - *G. g. graueri* (*G. b. graueri*)



# Rod gorila - *Gorilla*

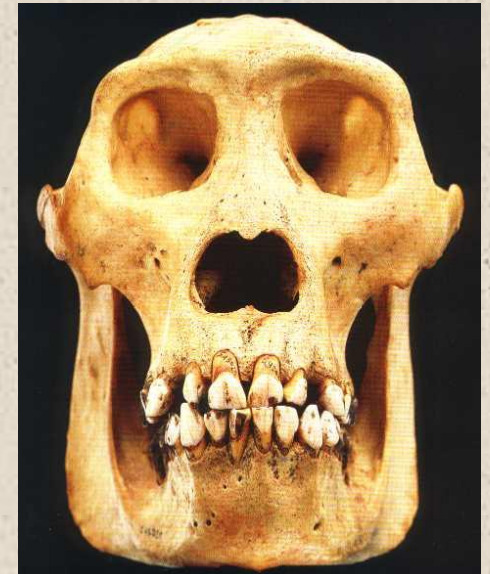


**Gorila je největší žijící primát.**

**Samci dosahují hmotnosti i přes 200 kg, samice jsou nanejvýš poloviční.**

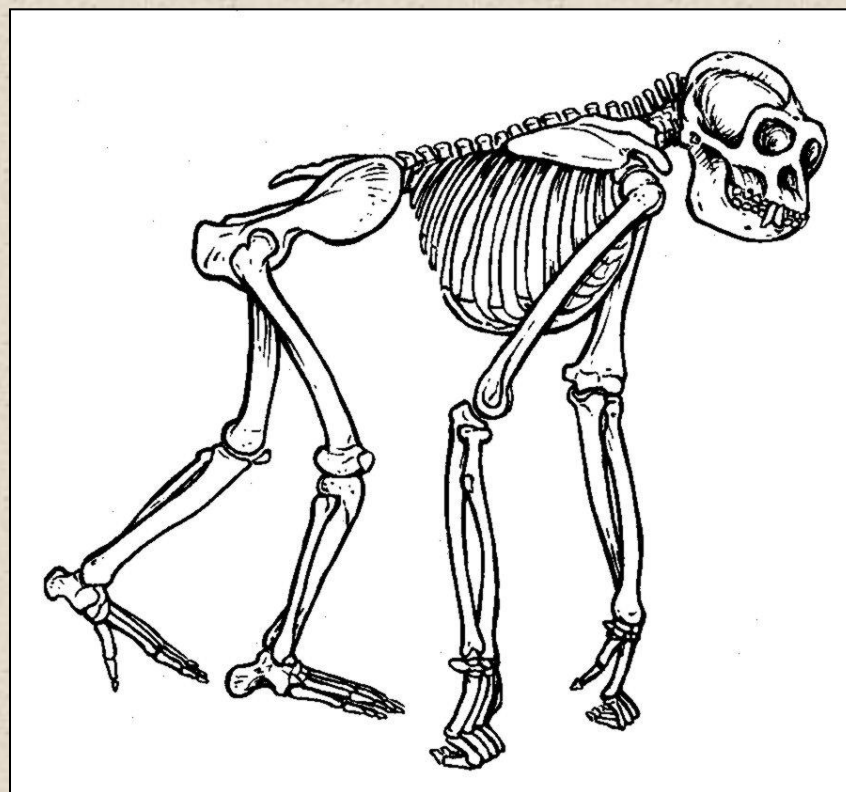


# Lebka gorily





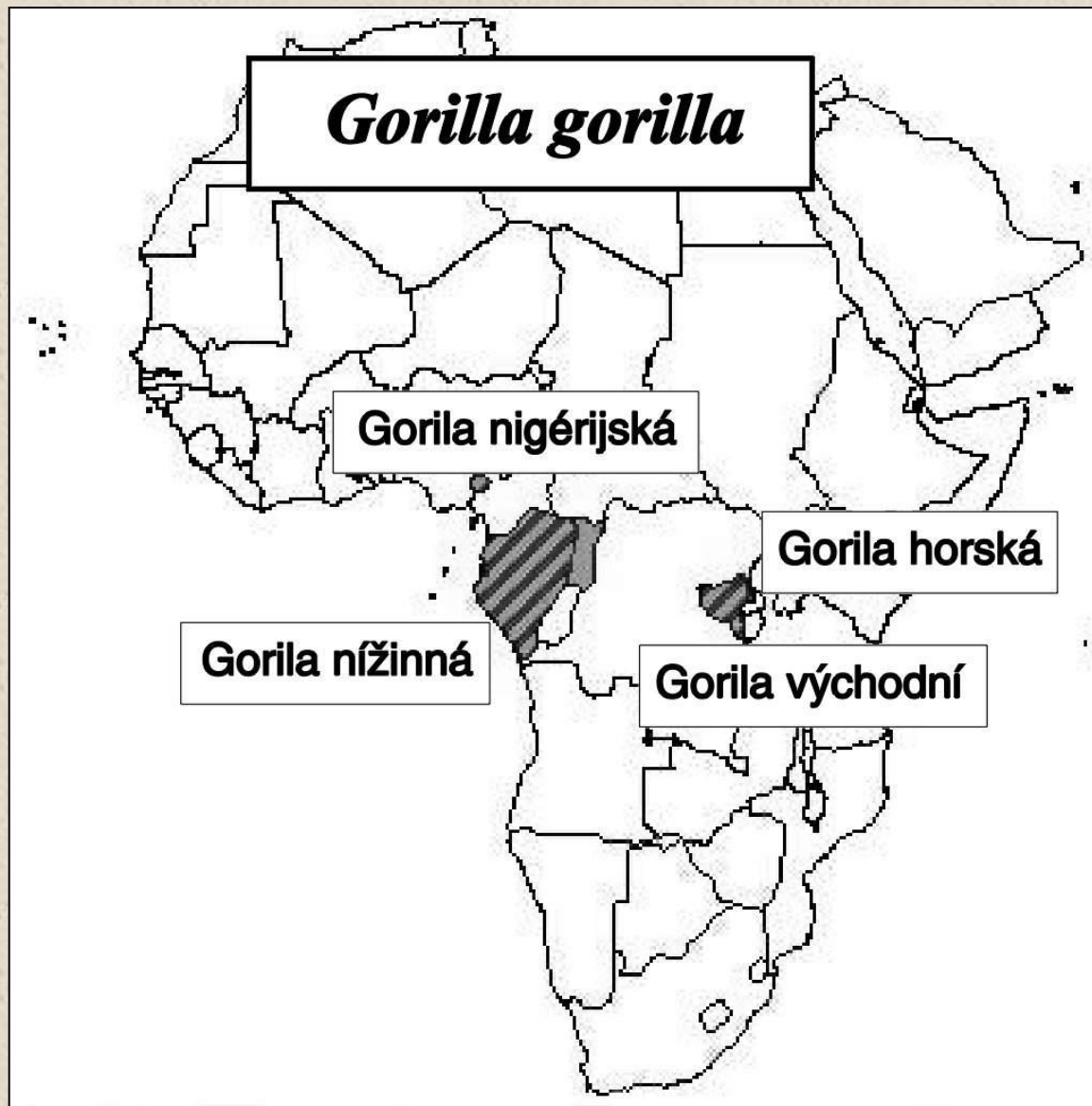
# Charakteristické znaky skeletu gorily a velikost jejich těla



GENUS	SPECIES	VÝSKYT	Hmotnost - samci	Hmotnost - samice	Index inter-membralis
Gorilla	<i>g. gorilla</i>	Nigérie až Zaire	170400	70500	116
Gorilla	<i>g. diehli</i>	Nigérie			
Gorilla	<i>g. beringei</i>	Uganda, Rwanda, Burundi, Zaire	162500	97500	116
Gorilla	<i>g. graueri</i>	Zaire	175200	71000	

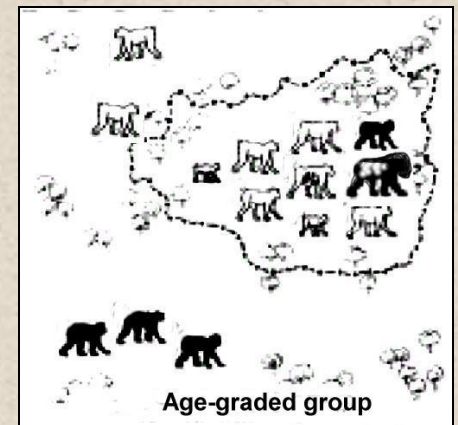
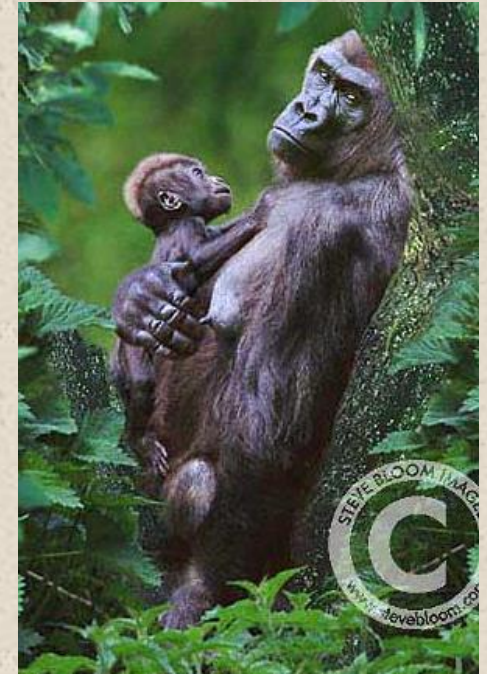
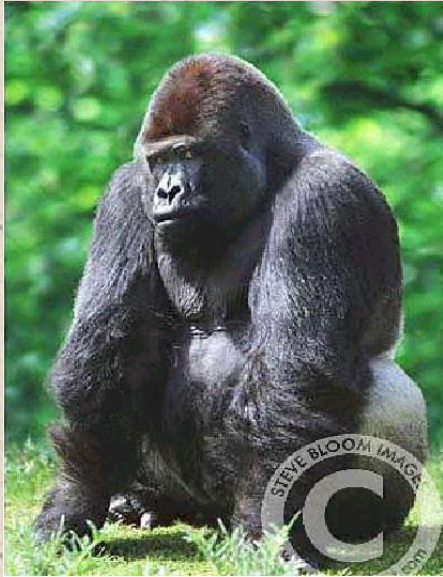


# Současné rozšíření goril





# *Gorilla gorilla* - gorila obecná



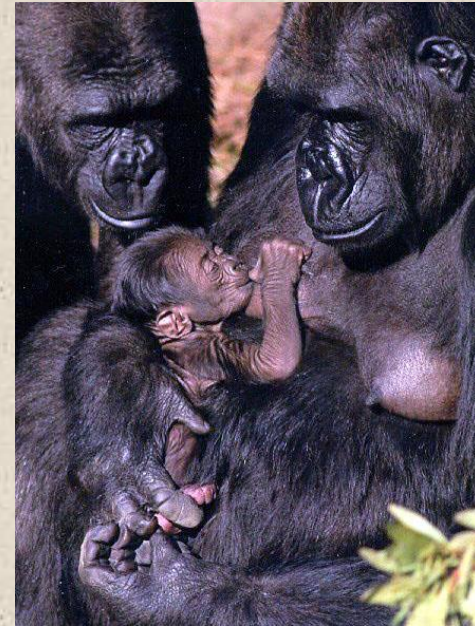


# *Gorilla gorilla* - gorila obecná - ekologie



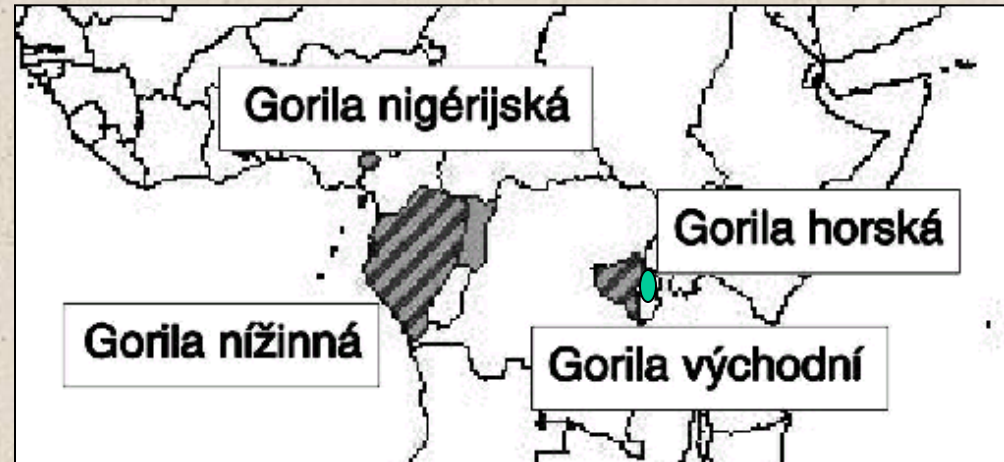


# *Gorilla gorilla* - gorila obecná - chování





# *Gorilla g. beringei* - gorila horská

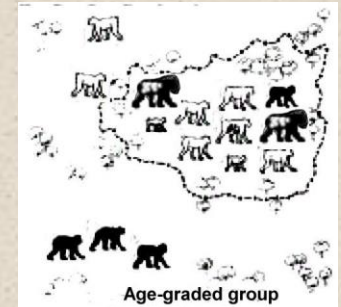
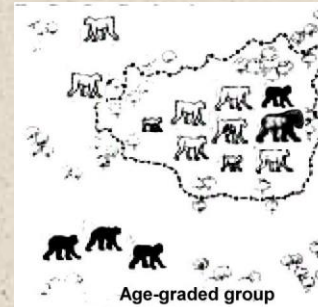




# *Gorilla g. beringei* - gorila horská - ekologie a chování

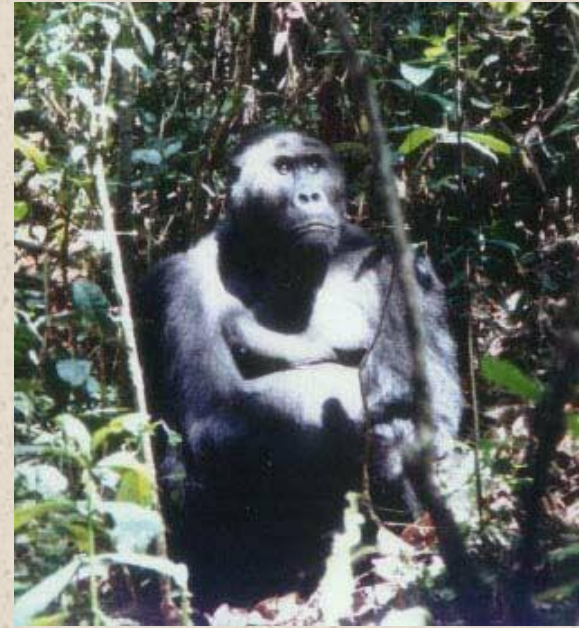
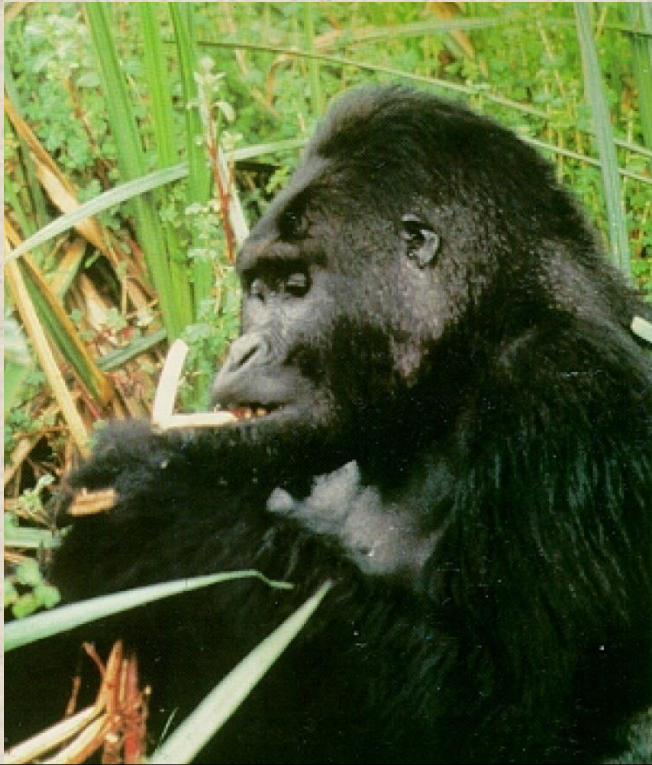


Gorilla horská pojídá velké množství špatně stravitelné vláknité potravy. Potrava je trávena dlouho a málo efektivně, gorily nemají specializovaný trvávicí trakt ani symbiotické bakterie. Častá je koprofágie.





# *Gorilla g. graueri* - gorila východní



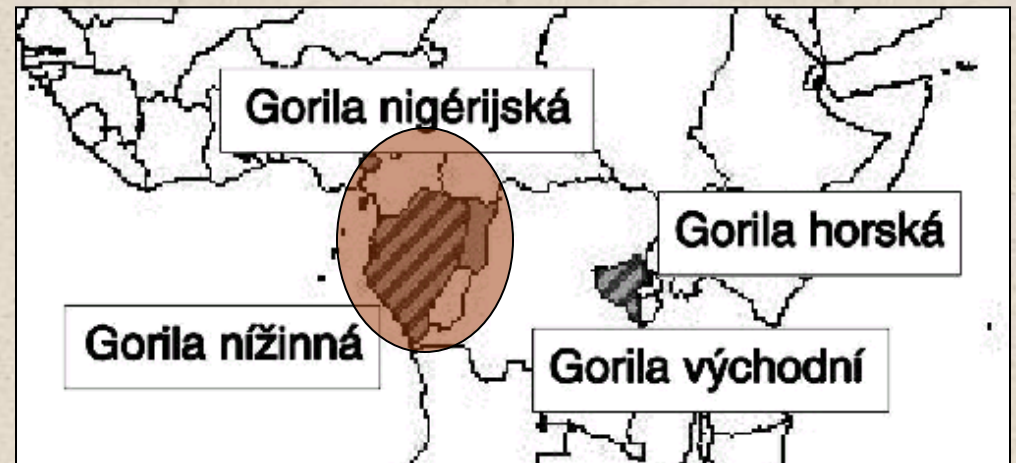
**Gorila východní je příbuzná gorile horské, ale je:**

- **více stromová**
- **mnohem více plodožravá**
- **sociálnější**





# *Gorilla g. gorilla* - gorila nížinná





# *Gorilla g. gorilla* - gorila nížinná - ekologie a chování

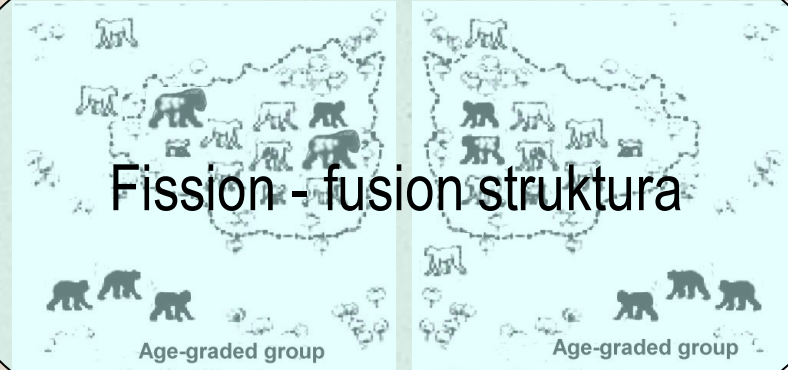




# *Gorilla g.gorilla* - gorila nížinná - chování, sociální struktura

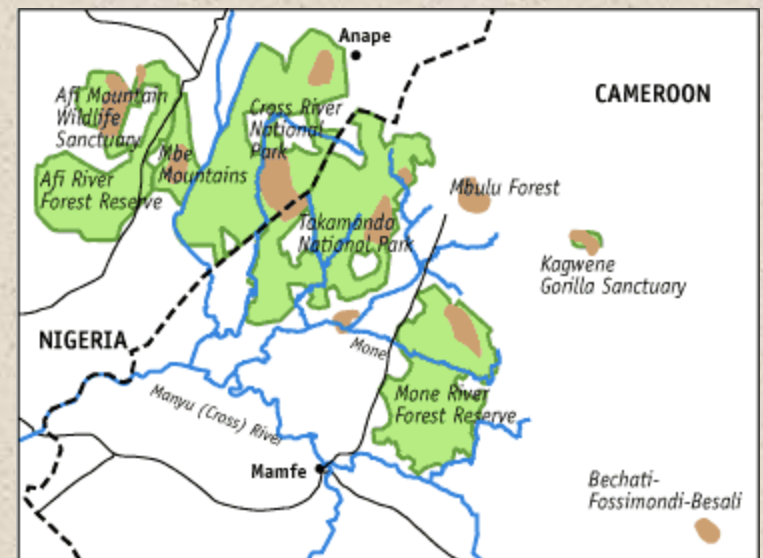


- Gorila nížinná je nepříbuzná gorile horské a je:
- mnohem více stromová
  - stromy často využívá, i pro stavění hnízd
  - v potravě mají významný podíl plody
  - ve srovnání se šimpanzi nekvalitní potrava
  - je z goril nejsociálnější
  - používání nástrojů i u goril v přirozených podmínkách, v zajetí je relativně velmi pokročilé





# Gorila nigérijská





# Současné rozšíření goril





# Nástrojové chování goril

