

RATITES

- All flightless birds → typically very large → eg emus, ostrich, elephant bird, kiwis, cassowaries
- Name means raft → have flat breast bone → lacks ability to fly
- Elephant bird → now extinct → was in Madagascar → weighed ~400kg and 3m tall
- Kiwis are the smallest group of ratites → only bird in group which hasn't evolved gigantism
- **Evolution of Ratites**
 - Earliest fossils date from 56mya
 - There is debate about ratite classification → are they all in same order, or separate?
 - DNA analysis suggests that ratites diverged too recently to share a common Gondwana ancestor → don't all share common ancestor
- **Ratite Biology**
 - Non flying birds → had to evolve different features to protect their young → THICK eggshells → different for a predator to crack open
 - Have **Precocial Young** → not dependent after birth → can swim, dive, be independent
 - There are **communal nests** → another way to protect offspring
 - Variable mating systems:
 - Polyandry → cassowary, emu
 - Polygyny → ostrich, rhea
 - Monogamy → kiwi

RATITE EXAMPLES

- **EMU**
 - **Gondwana** species
 - Found pretty much all over Australia → very widespread → lots of environments
 - Need water every day → so found in places max ~20km from water
 - Live for about 6 years → relatively short → small birds can live for 12-15 years!
 - Feed on seeds, fruits and insects
 - Solitary → but can be found in groups or pairs in breeding season
 - **Male looks after young** → male incubation for 2 months and chick care for 5-7 months
 - Polyandry?
 - **SOUTHERN CASSOWARY**
 - **Gondwana** → in North Australia, but most south Cassowary of all species
 - Heavier than emus → female larger than male and has brighter colours
 - Exclusively eat **fruit** → so confined to rainforest habitats
 - Solitary & territorial
 - Have feathers → but not adapted for flight so look almost like coarse hair
 - Have robust feet and **sharp claw on inner toe** → **lethal**, for fighting
 - Have **Casque** on head → maybe for shock absorption? Shovel? But if it was important for survival then young birds would have it → maybe is a sign of dominance?
 - **Cassowary Breeding**
 - Females mature slightly later than males
 - Females breed with a male → lay 3-6 eggs → then breed with another male → lay eggs
 - Called Successive Polyandry
 - Male incubates eggs for ~2 months and care for them for ~9 months
- ** Cassowaries are a "Keystone Species" → pivotal role in seed dispersal in forests**
 70 plants depend entirely on cassowaries, and 80 plants are assisted by cassowaries!
 Some of these plant seeds/fruits are toxic to other animals → Cassowaries has overactive liver & short digestive system so can manage the toxins
- ** Cassowaries are threatened → habitat clearance & fragmentation, vehicle traffic, dogs, pigs**

