

Some random stuff about cassowaries

1. Early European depictions of cassowaries
2. Early taxonomic studies on cassowaries
3. Where are cassowaries found?
4. Understanding Cassowary Senses
 - Cassowary vocalisation and hearing
 - Cassowary vision
 - Cassowary sense of smell



Cassowary painting by Francis Barlow in the Entrance Hall at Clandon Park, Surrey 1670's.

Also included in *Ornithologia* (1676) which was one of the first modern scientific treatises on birds.



Bird Engravings by Eleazer Albin
Cassawar cock **1730's**



George Louis Leclerc Buffon and Francois
Nicolas Martinet
Casoar des Indes orientales **1770's**



When live birds began to arrive in Europe, the details of illustrations greatly improved but the habitat detail was incorrect



Australian Cassowary, reproduced from *The Birds of Australia*, supplements by John Gould, London 1851, vol. 1 (5parts)
Image: Artist John Gould / Lithographer H. C. Richter
Source: Museum Victoria

Cartoon of 1868



But the Voracious Bird does his best to prevent the missionary from ever doing so. Hence the doggerel:

“Where stalked the dusky Cassowary,
On the plains of Timbuktoo;
There he ate the missionary,
Beads and prayer,
and hymn-book too.”

BUT THE VORACIOUS BIRD DOES HIS BEST TO PREVENT THE MISSIONARY FROM EVER GOING SO. HENCE THE DOGGEREL—

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Beads, and prayer, and hymn-book too.”

Lord Walter Rothschild (1868-1937)

[shown here with his trained zebra]



His most fanatical
interest were in:

- * **Birds of paradise**
- * **Fleas**
- * **Cassowaries**



In December 1900,
Walter Rothschild
published his
seminal work on
the cassowary.



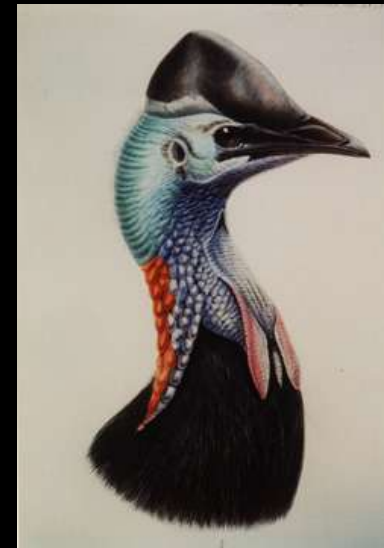
Casuarius casuarius beccarii

Casuarius casuarius bicarunculatus



Casuarius casuarius intensus

The work included
exquisite plates by
the bird artist John
Gerrard
Keulemans.



Casuarius casuarius salvadorii

The first cassowary specimen described in Australia was named by Wall as *Casuarius australius* (1848).

The second specimen was named *Casuarius johnsoni* by Mueller (1866).

The Australian cassowary was later recognised as a subspecies of *Casuarius casuarius* which is also found in PNG.

There are currently three recognised species of cassowary:

- *C. casuarius* described by Linnaeus in 1758
- *C. bennetti* described by Gould in 1857
- *C. unappendiculatus* described by Blyth in 1860

Dwarf Cassowary

Casuarius bennetti

Mostly montane

20-30 kg



Dwarf Cassowary

• *Casuarius bennetti* occurs in New Guinea (Papua, formerly Irian Jaya, Indonesia and Papua New Guinea).



Casuarius bennetti

range type

- native (resident)
- native (breeding)
- native (non breeding)
- reintroduced
- introduced
- uncertain origin
- possibly extinct
- extinct

- national boundaries
- subnational boundaries
- lakes, rivers, canals
- salt pans, intermittent rivers

data source:
BirdLife International, 2008



azimuthal equal area - central point: 0°, 0°

map created 09/15/2008



Northern Cassowary

Single-wattled Cassowary

Gold-necked Cassowary

Blyth's Cassowary

Casuarius unappendiculatus

Least known of the 3 spp.

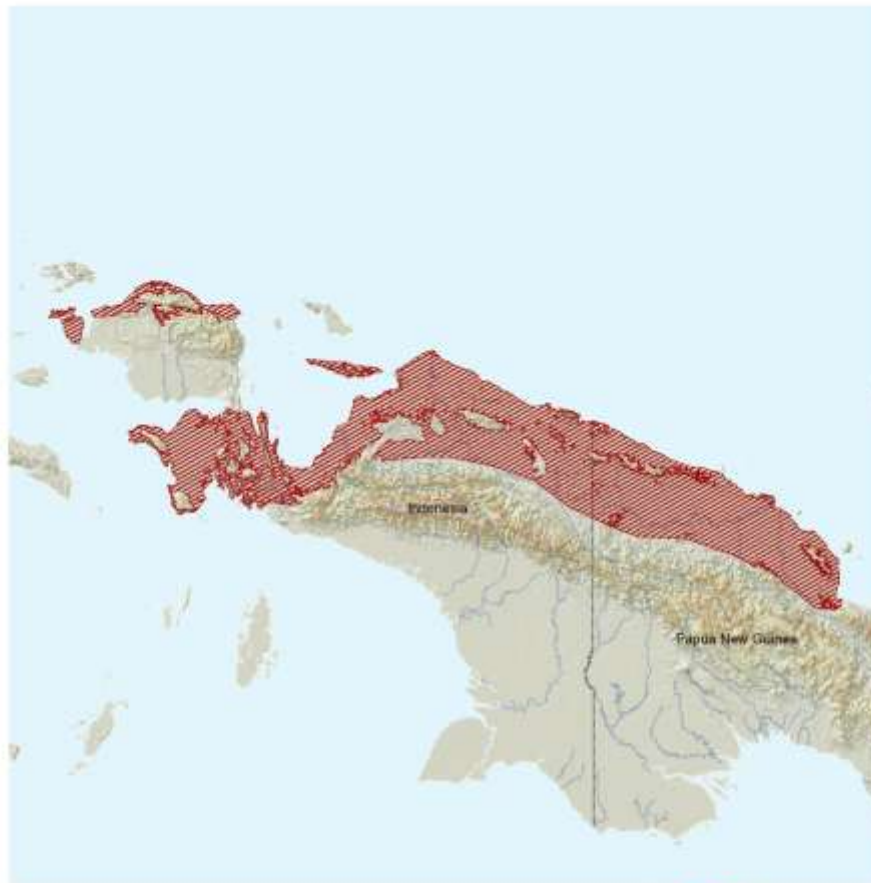
Mostly lowlands

up to 50 kg?



Northern Cassowary

(Single-wattled cassowary)



Casuarus unappendiculatus

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map created 08/15/2008



- *Casuarus unappendiculatus* is restricted to the northern lowlands of New Guinea (Papua, formerly Irian Jaya, **Indonesia**, and **Papua New Guinea**).
- inhabits lowland forest, including swamp-forest, to 700 m. Its ecology is poorly known but presumed to be similar to that of *C. casuarius*.

Southern Cassowary

Double-wattled Cassowary

Casuarius casuarius

Southern NG and
northern Australia

50+ kg



Southern cassowary

(Double wattled cassowary)

- ***Casuarius casuarius*** is found in New Guinea (Papua, formerly Irian Jaya, **Indonesia** and **Papua New Guinea**), including the islands of Seram and Aru, and north-eastern **Australia**.

- It occurs throughout the southern lowlands of New Guinea, eastern Cape York Peninsula and Wet Tropics of Queensland



Casuarius casuarius

range type

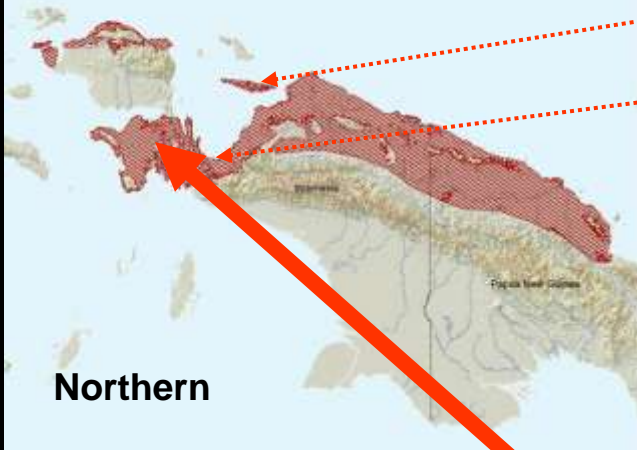
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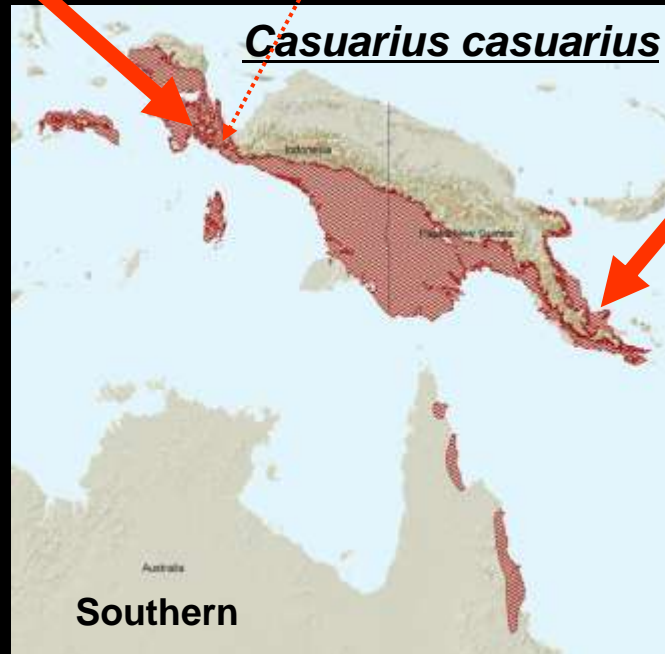
Casuarium unappendiculatum



Casuarium bennetti



Casuarium casuarium



The 8 Subspecies of the Southern Cassowary (*Casuarius casuarius*)



Subspecies

Casuarius casuarius casuarius

Casuarius casuarius bicarunculatus

Casuarius casuarius tricarunculatus

Casuarius casuarius lateralis

Casuarius casuarius sclaterii

Casuarius casuarius aruensis

Casuarius casuarius violicollis

Casuarius casuarius johnsonii

Distribution

Ceram island

Aru island & northern New Guinea

Geelvink Bay in New Guinea

Northern New Guinea

Southern New Guinea

Wokan Island

Trangan Island

Far North eastern Australia

Understanding Cassowary Senses

- **Cassowaries depend on their senses for survival**
- **Cassowaries have evolved their senses to maximise their survival**
- **Cassowaries have the same senses humans do – sight, hearing, touch, taste and smell – but they are specialised to help them survive.**

Sensory Research

Studies directed at gaining an understanding of cassowary communication and perception.

- infrasound communication and its effects on behaviour
- colour perception and its influence on sight, food preferences (and a range of other behaviours)
- sense of smell and how this might influences food preferences, location, interaction etc.

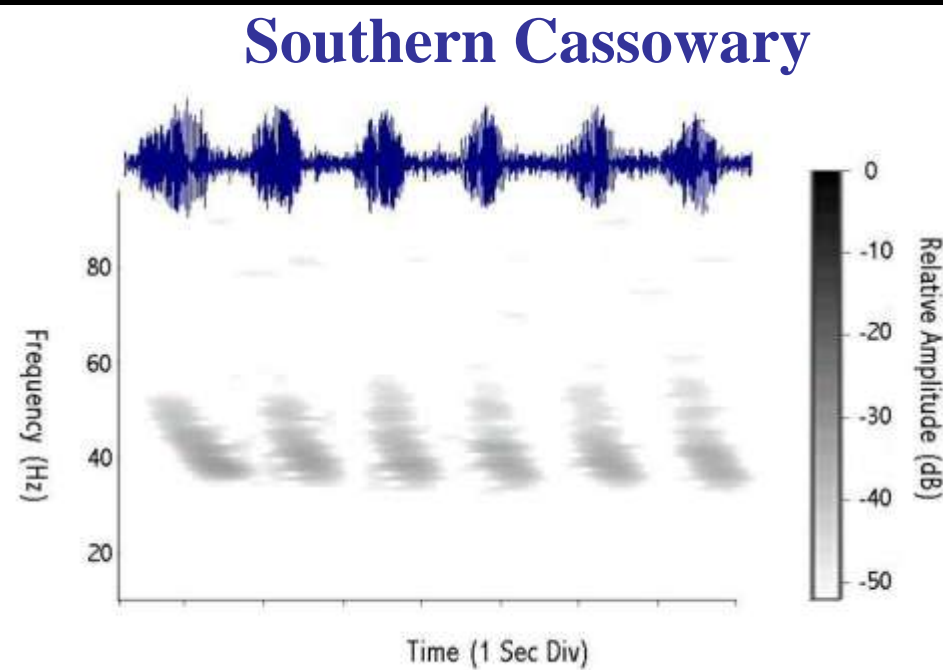
Communication



- among the lowest known frequencies produced by birds
- components inaudible to many people
- low frequencies travel well through rainforest
- purposes unknown— possibly territorial and /or attraction over long distances
- similarities to casqued dinosaurs??

Infrasound

Southern Cassowary



Dwarf Cassowary



pulsed harmonics 25, 50, 75, 100 Hz



Vision



At ground level in a rainforest 95% of the light is blocked out by the canopy.

Colour is not an inherent property of an object - it is a property of the nervous system of the animal perceiving the light.

Humans – only 3 cone types: red, green and blue (trichromatic vision)

Birds – 4 cone types: includes UV



Colour Perception



- **Colour perception in cassowaries is very different to the way humans see the world**
- **Implications in determining food preference and in understanding and manipulating a large range of behavioural responses.**



Sense of SMELL in cassowaries

- **The sense of smell in birds varies greatly between species depending on the size of their olfactory bulb - the brain region involved in sense of smell.**
- **Most bird species have very small olfactory centres in their brains, and they do not use smell extensively**
- **More evolutionary advanced bird species devote more brain space to visual and sound signals at the expense of their sense of smell.**
- **Kiwi has a very abnormally large olfactory bulb – is this true of other ratites?**