

Species kept in Europe

- Black necked grebe (*Podiceps nigricollis*)
- Little grebe (*Tachybaptus ruficollis*)
- Great Crested Grebe (*Podiceps cristatus*)
- Red necked Grebe (*Podiceps grisegena*)



European Captive population

Facilities	Little Grebe	Black necked Grebe	Great Crested Grebe	Red necked Grebe
Private breeders	9	10	1	1
Zoological institute	13	6	2	0
Total individuals worldwide, on ZIMS	40	10	7	0

- Countries with captive grebes: Netherlands(P), Germany(PZ), Belgium(P), U.K(P), France(Z), Switzerland(Z), Czech Republic(Z), Sweden (Z), Italy (Z), Austria(P)
- 10 countries have populations

Captive management – Diet



- **Piscivorous diet-** sea duck pellet(Wisbroek, Lundi, Mazuri), smelt, shrimp, chopped sprat, chopped freshwater fish
- **Insectivorous diet-** sea duck pellet (Wisbroek, Lundi, Mazuri), Micro 40% and 22% (Wisbroek, Lundi), Mealworms, Buffalo worms, crickets, access to macrophytic vegetation
- Food is fed either on waters surface or next to waters edge
- Advances in pelleted diets and acclimation of individuals to a captive lifestyle, have aided greatly with avicultural success

Captive management – Enclosure



- Access to large bodies of deep, clean, freshwater
- Inflow and outflow to maintain water clarity and cleanliness
- Possible filtration systems
- Aquatic vegetation provides shelter, food sources and nesting material
- Loafing and roosting areas
- Indicator species
- Access in and out of the water
- Food provisioned at the waters surface



Black necked
grebe
enclosure -
Wisbroek
Research and
Development
centre -
Netherlands

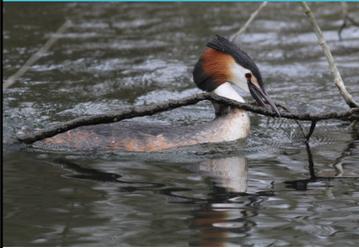


Captive
management –
Social dynamics



- Colonial nesters- Black necked grebes, Hooded Grebes
- Solitary nesters- Great crested grebes, Little grebes
- Migratory species-Seasonal changes in social behaviour *e.g.* Great crested Grebes exist in Large winter flocks
- Inter specific- smaller species often tolerate other taxa to share their environment *e.g.* Wisbroek set up

Captive management – Nest building



- Floating vegetation: chopped phragmites, bull rushes, blanket weed
- Important aspect of the pair bond and mating display rituals
- Artificial platforms are readily used
- Provisioning of nesting material can kick start breeding behaviour
- Important not to clog water with material, as chicks are at risk from drowning



Captive management – Breeding, parent rearing

- Bonded, displaying pairs precursor to nest building
- Nesting material must be provided, to allow the creation of their semi-submerged floating nests
- Bond male and female share incubation duties
- Incubation period: Little grebe(20-25), Black necked grebe (20-23), Great Crested grebe (25-31)
- Chicks will be carried on the back of one parent for c.10 days
- At 10 days the chicks begin to dive and are cared for by a single parent
- Food must be placed on the water surface c. 3 times a day. Food available *ab lib.*
- Livefood important during first week



Black necked grebe
(*Podiceps nigricollis*)
feeding 3 day old
chicks.



Chick rearing timeline

- Day 0-5- Chicks are poor swimmer, spending the majority of their time on the back of one of the parents. Fed entirely by the parents
- Day 5-10- chicks are left on waters surface unattended, for longer periods. Still require feeding
- Day 10-15- chicks begin to dive, and surface gleaning is observed, rarely on the parents backs
- Day 15-20- chicks begin to feed themselves
- Day 22-26- old enough to be close rung- Microchip
- Day 35- fully fledged, self feeding and capable of flight



Captive management – Hand rearing

- Chicks must be presented food
- Soaked 22% Micro (Lundi, Wisbroek), daphnia, blood worms, buffalo worms(heads crushed)
- Chicks reared singly, as they can show sibling aggression (Bienvenu *pers coms.* 2018)
- **Dry brooder**- hot spot c.30 degrees. Soft matting. Shallow water bowl.- for rest and sleep
- **Wet brooder**- water of c.10 cm deep, with floating micro sprinkled over the surface- for feeding and defecation.
- Active feeding from 8:00am – 8:00pm, every two hours.
- c.12 days- given full access to a deep wet brooder
- c.25 days- fully fledged and self feeding.



Hand rearing dry brooder

video provided by Jeroen Wynants



Hand rearing Wet brooder

video provided by Jeroen Wynants

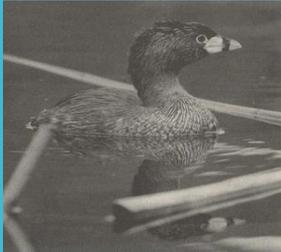


Hand rearing Feeding method

video provided by Jeroen Wynants



Why is grebe aviculture necessary?



- **2 species Critically Endangered**

- Junin flightless Grebe (*Podiceps taczanowskii*) - 50-249 (ECOAN 2009)
- Hooded grebe (*Podiceps gallardoi*) – 900 (Roesler, I. et al. 2015)

- **1 species Endangered**

- Titicaca grebe (*Rollandia microptera*) - 750 adults (BirdLife International 2006)

- **3 species have gone Extinct in the last 30 years.**

- Colombian grebe (*Podiceps andinus*)- Ex- 1982 (del Hoyo et al. 1992)
- Alaotra grebe (*Tachybaptus rufolavatus*)- Ex- 2010 (Birdlife international 2012)
- Atitlán grebe (*Podilymbus gigas*)- Ex-1990 (Fuller 2000)



Avicultural Conservation successes

- Madagascan pochard
- Laysan teal
- Brazilian merganser
- Blue duck (Whio)
- Baer's pochard
- Nene goose



Future of Grebe aviculture

- WAZA,EAZA,AZA wide studbooks and management of genetics
- More holders of the species currently held
- Possible new species held- rehab individuals
- Advances in hand rearing- through breeders experimenting
- Protocols devised for best practise
- Discussion between holders
- Development of a Podicipediformes TAG- both within private aviculture and Zoological
- Current species, ideal models for future conservation work
- Possible *Ex situ, In situ* captive management of vulnerable species

Thank you for listening

- I must thank: Chris Bienvenu, Ludger Brokemper and Jeroen Wynants who greatly assisted me in collecting information about Grebes in private aviculture, and providing me with photos and videos of their birds.

