



HAND-RAISING WATERFOWL: THE SCIENCE IS IN THE SETUP

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Big topic, from ASAG hand-rearing survey and selected topics. Will field questions about specifics at end.

Pre-incubation

- Egg management depends on species/location/season
 - Geese/swans left alone (Nene/Red-breasted Geese)
 - Wooden dummies, infertile dummies
- Black-rat snake prevention
- Wine cooler for storage during clutch formation?

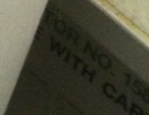
Precocial species.

Ducks can't count past 3-4 eggs under themselves.

Electric wire predator deterrent?

Response	Percentage
Yes	75%
No	25%

- However have used
Sharpie pen –
not a fan.*



Incubation

- 14 days under hen (real, foster, chicken)
- R-com 20 Pro (not the 50)
 - 99.5F at 55% humidity
 - Success from day 0
 - Previously did not artificially incubate some species
 - Fumigation?
- Hand turn swan/geese eggs

Homemade incubator / Grumbach, Lyon, Brinsea

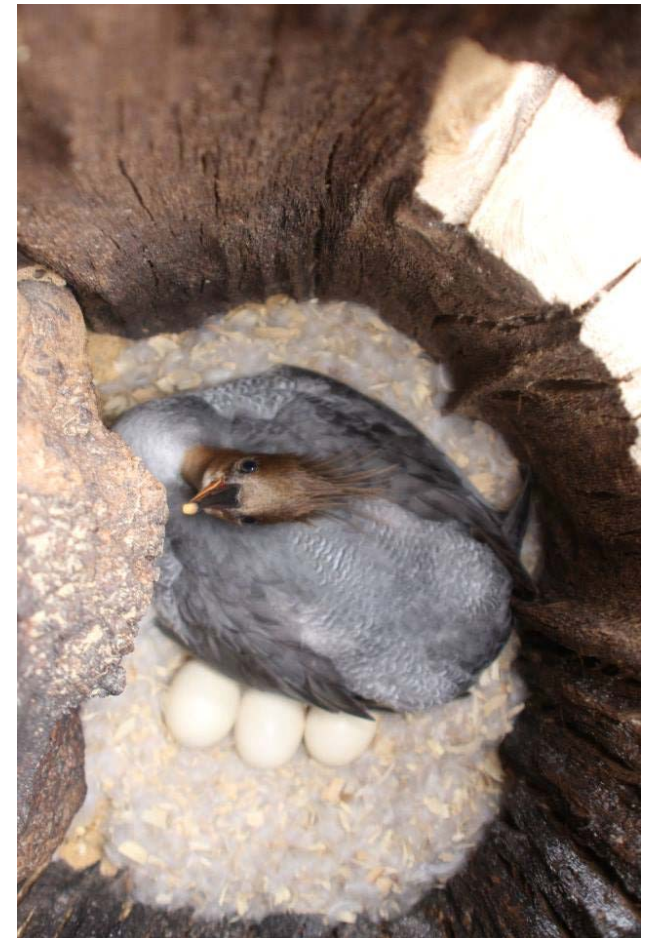
R-Com 50 is the same guts as the 20.

R-com details (max) - set programs

Turning radius

Brinsea disinfectant versus formaldehyde

/potassium permanganate fumigation



Hatching

- Egg is moved to pre-hatcher at internal pip
 - Misted directly
- Moved to hatcher when externally pipped
- “Fluffer-upper” after hatch for 12 hours to dry

Modified Roll-X incubator as hatcher.

Shop vac for removing fluff.



Incubation Notes

- Eggs candled every morning
 - Lights left off in room otherwise
- Lids left off for cool down
 - Important to think about general biology
 - Stiff-tail verse tree-duck, etc.
- Except R-com, water trays in all incubators not used
 - Room humidity controlled

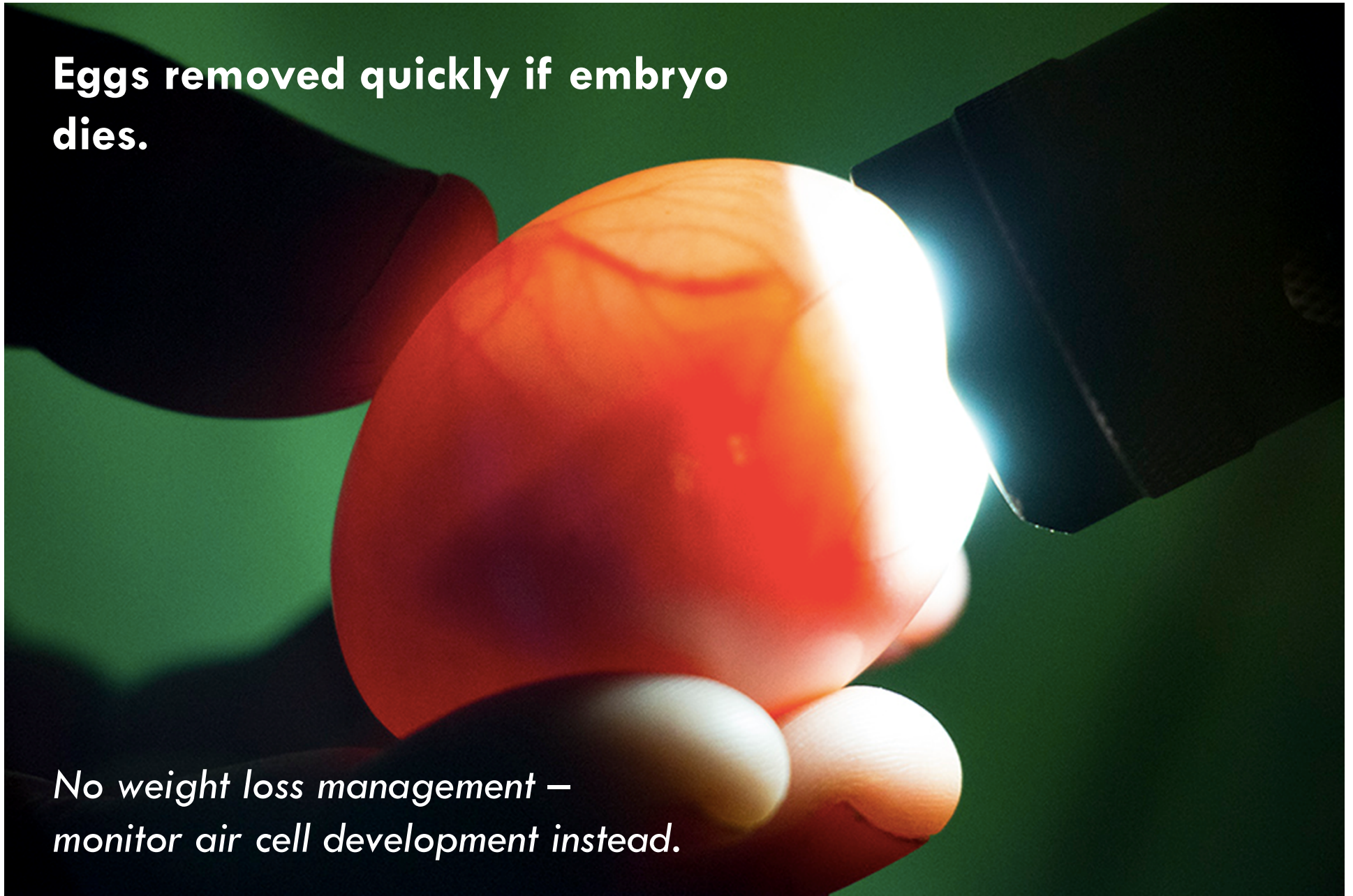
LED tactical flashlight –

Swans

Anything bad about them?

**Eggs removed quickly if embryo
dies.**

*No weight loss management —
monitor air cell development instead.*



Hatching Assistance

- Once pipped, we expect the bird out in 24 hours, or making progress
- We will slowly help eggs that are not making progress
 - First check on ability to breath
 - Slowly start looking for wing position (right?)
 - Pull-wing and rest for 6 hours
 - Slowly start working chick out, leaving last bit for chick
- Don't let dry out (wet paper towel)
- Yolk sac infection: Iodine on yolk scar

*Hatching assistance is a
slow process.
I prefer dental tools.*



Raising “wild” Ducklings

- Ducklings that have been on open water are a different story
- Constantly try to climb out of brooder, fail to feed, etc.
- For accidental hatchings, we often just leave the ducklings
- Domestic/hand-reared ducklings can help calm “wild”
 - Best left alone

Brooder Recommendations

- All birds start in dry brooder
- 2'x3.5' dry brooder with .25" hardware cloth on the floor
- Bar mat is placed on one end of the brooder under a 250watt heat bulb
 - No specific temperature we aim for, but instead check the activity. We want them to be active, not be directly under the bulb or pressed to the sides of the brooder
- Marbles in water bowl
- Transition to wet brooder based on species (~7days)
 - Remove floor
 - Pinion/vent sex prior?

Shorebird setup, bowl is smaller



Little Duckery

- Adjustable flow, seaducks like splashing water
- Nail trims for cavity nesters



Little Duckery



halogen lamps, low splash, flip between
175-250 watts

Big Duckery

- After 2+ weeks moved to larger wet brooders
- Adjustable pool depth with eventual access to outdoor pools and natural sunlight
- Both the initial move from dry to wet brooders, and the move to outdoor pools early is important on feather quality





for seaducks add rocks

Juvenile Pens

- Low aggression if birds moved out under 18 months



Large amount of unpaired birds ok.

Rearing Spaces

- Sylvan is designed to raise ducks, however there are lots of unique ways to hand-raise ducklings
- The important components are...
 - Clean water
 - Our flow through system reduces bacteria buildup
 - Reduced “people time”
 - I.e. how long does it take staff to clean?
 - Outdoor rearing areas

Fledging / Integration with other Birds

- Same genus important prior to entering Big Duckery
- Transitioning into mixed flocks easier in juvenile pens
- Conspecific aggression



Diets

- In-house corn based extruded pellet (Mazuri Waterfowl Maintenance)
- Mazuri Seaduck
- Mazuri Waterfowl Starter
- Some experience with Mazuri trial diets
 - Diving duck, high-fiber: palatability issues
- Japanese white millet
- Milo
- Greens (not spinach or high iron types)

Starting Feeding

- Depends on species
 - Most do well with ground egg yolk, crumble, Mazuri waterfowl starter
- No daily weights
- Pygmies, Pink-eared, Stiff-tails do well with teal teachers
 - Duck weed encourages feeding
- Feed pan location important!

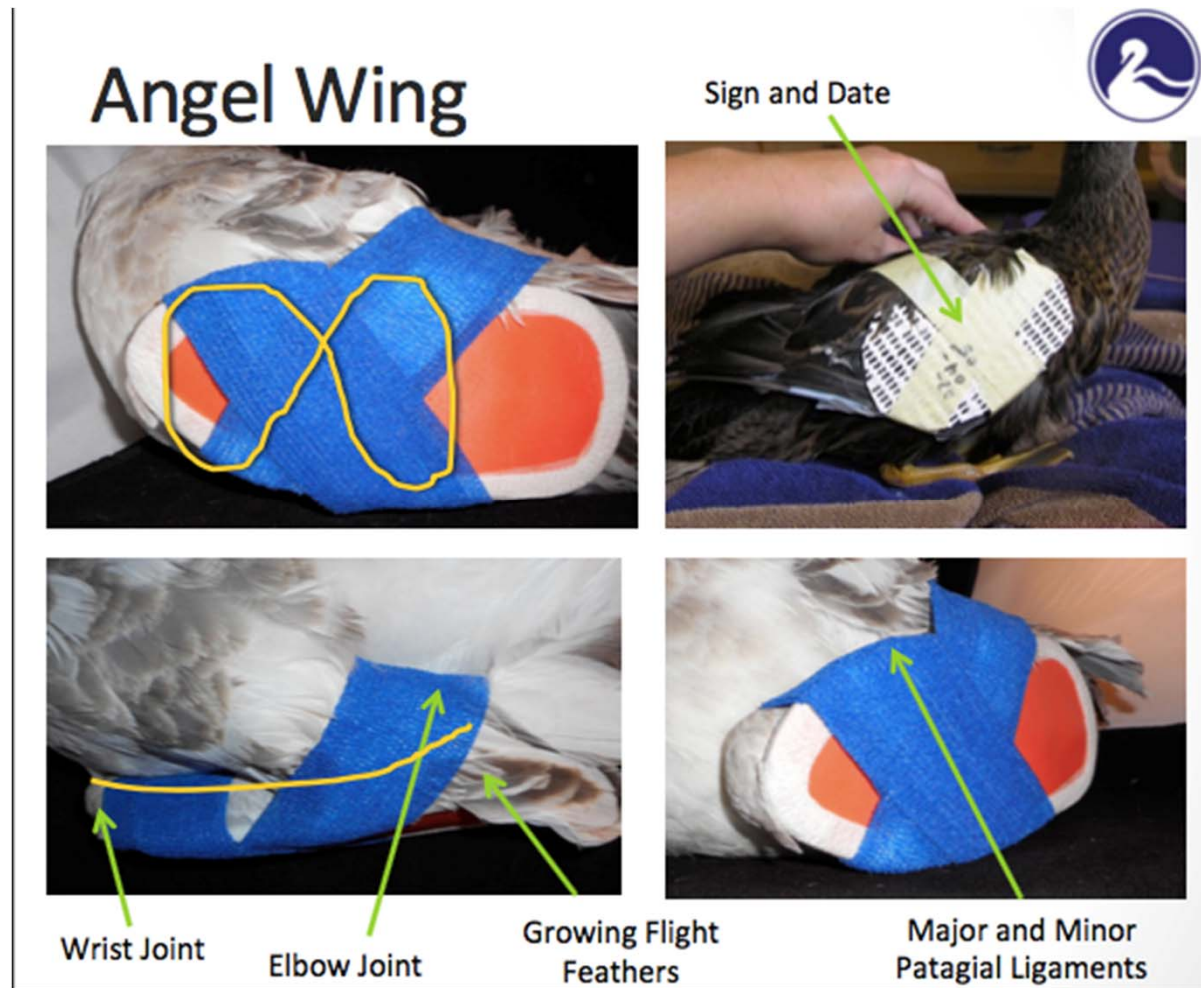
Ad lib vs Limit Feeding

- Only geese are feed limited
 - Moved to outdoor pens during the day to graze
 - Pens moved daily
- Low nutrition grain (milo) fed to juvenile pens in addition to balanced pellet



All waterfowl fed 2x daily.

Problems: Angel Wing



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Problems: Slipped Tendon

Perosis – Slipped Tendon



- Juveniles v. Adults
 - Perosis much more common in young, growing birds
 - Nutritional deficiency or excess
 - Inadequate exercise
- Substitute foam for padded aluminum splint and score hinge



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Problems: Over Handling

- Species dependent, however many species will quickly decline if they are interacted with too often

Problems: Exercise

- Swimming space
- Swan swimming lessons
- Geese pastures

Alternatives to Hand-rearing

- Many species are allowed to parent raise
 - Factor of other species on pond, predator access, and parent ability
 - Shelducks/geese, stiff-tails, comb ducks all do well
 - Visitor factor

*People love babies,
however if ducklings
die...*











Leave sexes we don't want...

Surrogates

- Not something we do often, but it does have advantages such as increasing pair bonds

For monogamous-'ish' species



Swans

- Swans are excellent parents and raise their cygnets better than we can
- Feed platforms for crumble (3x/day)
- We even swap pairs with week old cygnets onto display



Rearing cygnets important for pair



Imprinting

- Ducks can often revert if imprinted
 - Geese/swans can become difficult
- Our imprinted birds are often the result of single clutch hatches
- Imprinted birds need to be kept separate
 - Constant problems in our “education pens”
- However, low time investment option for facilities



Ceroposis is only imprint allowed to stay out with non-imprints.

Product Sources

- Lyon Technologies: R-com
 - We often have back up parts on hand
- Mazuri: Seaduck, Waterfowl Starter, Diving Duck
- JeffersPet.com: Halogen Lamps
- Jacksonwire: 6ft wide hardware cloth
- Ollies: bar mat
- Rearing Questions? e-mail me: **Dustin:**
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10% discount off Lyon?

Questions?



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