

Technology to Manage Avian Collections: Photo Evidence of Husbandry Pitfalls

ASAG Workshop 2017



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Avian Collections

Avian collections are complicated

Useful information is lacking

Technology can help

*It is difficult to make decisions based on limited knowledge, little natural history known,
not commonly kept in collections (or at least not commonly managed in collections), many kept*

Why use technology?

Video evidence replaces questioning in management decisions

Improved view

Behavior

Individualized management

Improved View:

*View without impacting animal behavior ♦ Training aid
Ability to view with no staff present (overnight applications) ♦ Night vision
Viewing areas that are not otherwise accessible*

Behavior:

Flock management ♦ Introductions ♦ Training

Individualized management:

Either individual or individual species ♦ Reproduction applications ♦ Husbandry nails etc



Why use technology?

View without impacting animal behavior

Training aid

Ability to view with no staff present (overnight applications)

Viewing areas that are not otherwise accessible

Night vision

Flock management

Introductions

Reproduction management

It's REALITY TV!

Exhibit Specifics

Rain Forest Exhibit



Sea Cliffs Exhibit

Australia Exhibit



Geographically specific

Free-flight aviary

Mixed-species

Public walk-through

Approximately .15 acres

80 feet tall

Large inaccessible areas

Geographically specific

Three alcid species

Temperature controlled

6,500 gal 2/3 FW 1/3 RSW

Nesting burrows

Photoperiod

Exhibit Specifics

**Rain Forest: 40 - 60 individuals representing
20 species**

**Sea Cliffs: 20 individuals representing 3
species**

**Australia Exhibit: 60 – 80 individuals
representing 15 species**

**Larger exhibits are free-flighted, public
walk-throughs, multi-taxa**

Current Technology

Nest cameras

Trail cameras

Digital SLR camera

GoPro cameras

Inspection cameras

Nursery monitors

Cell phones





Nest Cameras

Benefits	Difficulties	National Aquarium Applications
Live feed for real-time troubleshooting	Often need power source	Female Red-capped Cardinal (<i>Paroaria gularus</i>) died, did not want to pull chick for hand-rearing
Recording capabilities when coupled with computer	Wireless is difficult to achieve	Passerine chicks disappearing
Small enough to fit within nests and nest boxes	Hard to use for multiple applications	Atlantic Puffin (<i>Fratercula arctica</i>) chick died after failing to thrive

For the interest of this presentation I have chosen to share a few that have been the most impactful for my current applications at the Aquarium
The first video: Bay-headed tanager nest, important to monitor these , many nestlings lost due to nest raiding/ chicks disappearing



Nest Cameras





Nest Cameras





Nest Cameras





Nest Cameras





Nest Cameras



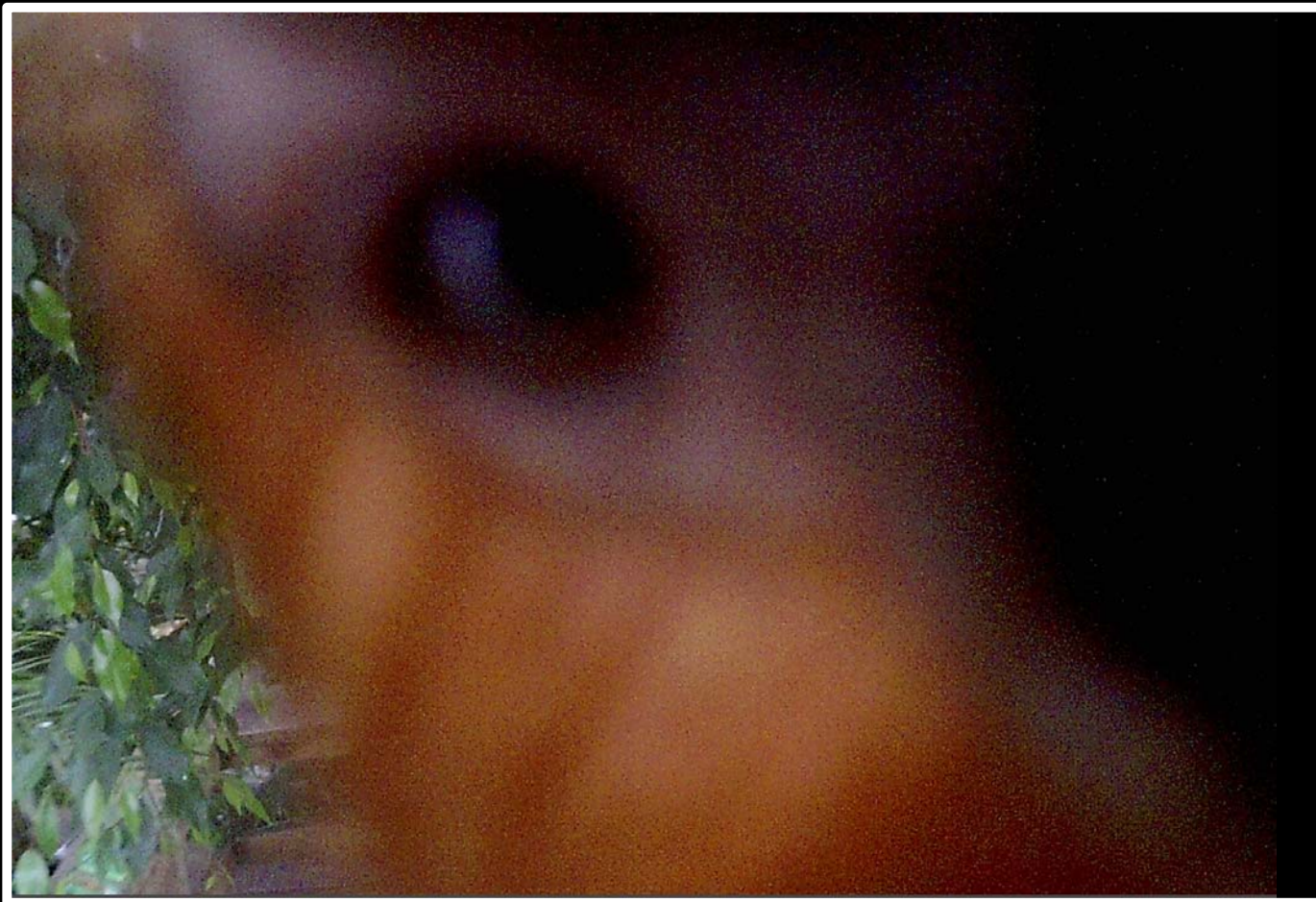


Nest Cameras





Nest Cameras





Trail Camera

Benefits	Difficulties	National Aquarium Applications
Affordable	Not real time	Blue-crowned motmot (<i>Momotus momota</i>) sires killing chicks, overnight fledge watch
		Weights
Very portable	Position is often trial and error	Scarlet ibis (<i>Eudocimus ruber</i>) training
Picture quality		Non-emergency chick care
		Boatbill heron (<i>Cochlearius cochlearius</i>) feet



Trail Camera



SIMMONS

07-26-2015 11:01:15



SIMMONS

07-26-2015 10:16:48



Trail Camera





Trail Camera

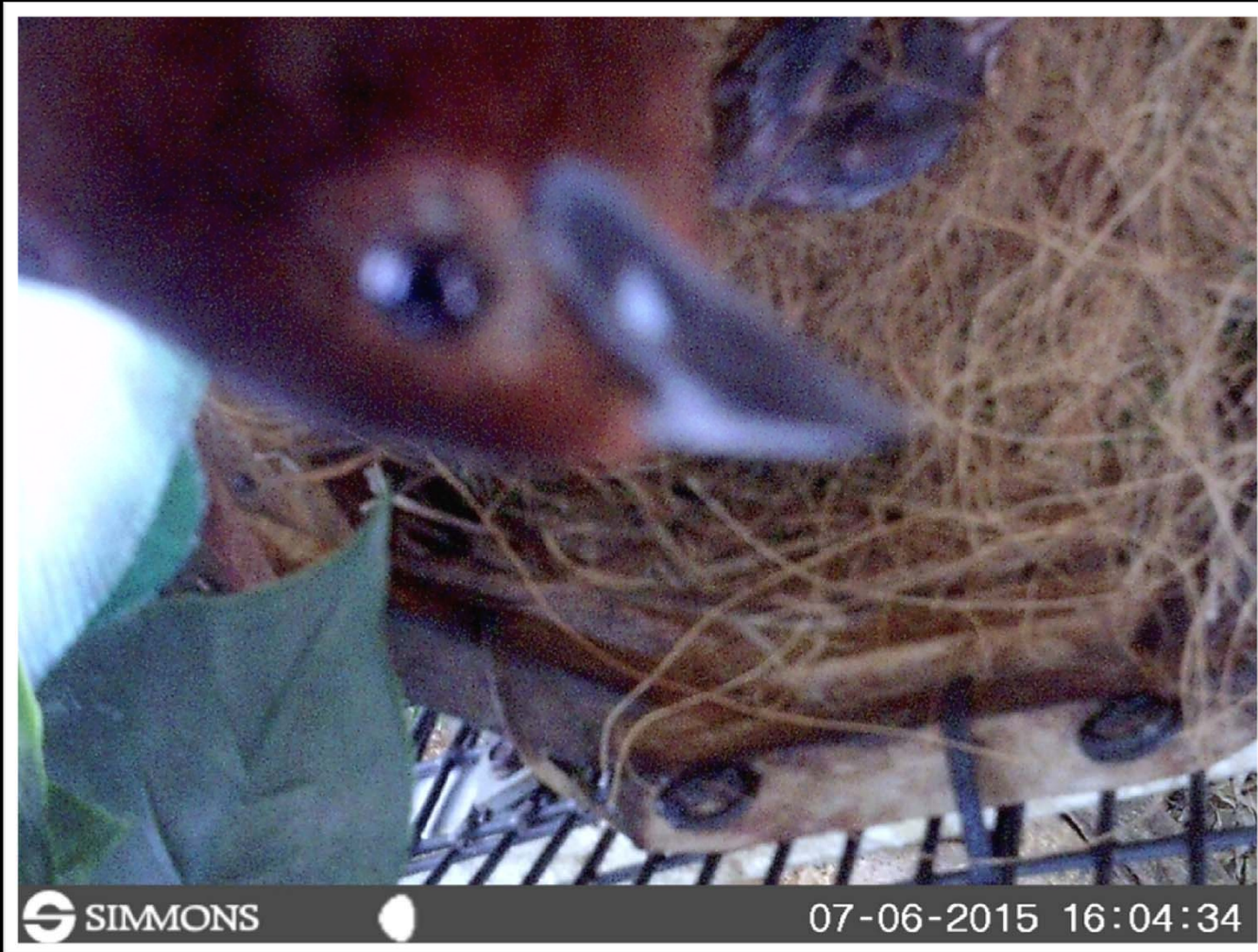


*Times ibis are eating for training
Monitor issues, bills, toes
– in general crusty birds*



Trail Camera

Oddly a turquoise tanager chick being cared for by a silverbeak tanager.



 SIMMONS

07-06-2015 16:04:34



Trail Camera



 SIMMONS

07-06-2015 18:00:02



Trail Camera





Trail Camera





Trail Camera

Since we knew the silverbeak was feeding, and we assumed the opening was too small for larger predatory birds to get in without the video we may have assumed that the silverbeak had done something to the chick.



 SIMMONS

07-06-2015 18:14:02



DSLR Camera

Benefits	Difficulties	National Aquarium Applications
Zoom capability	Must be present	Reproductive management, number of chicks in a nest, nest quality etc
Wireless	Computer access	Boatbill heron (<i>Cochlearius cochlearius</i>) bill/feet
Ease of use <i>A digital single-lens reflex camera (also called a digital SLR or DSLR) is a digital camera combining the optics and the mechanisms of a single-lens reflex camera with a digital imaging sensor, as opposed to photographic film. The reflex design scheme is the primary difference between a DSLR and other digital cameras.</i> <i>Health – managing chronic issues such as bill, foot health, progression of injuries specific example nail broken</i> <i>Reproductive management- count the number of chicks using zoom lense, id chick stage in nests out of reach</i> <i>Other difficulties include cost</i> <i>Pi - Communicate – send picture updates to vets, watch molting and share with others</i>	Expense	



DSLR Camera



Our guide Ellen is a great example of a husbandry downfall.



DSLR Camera





DSLR Camera





GoPro

Benefits

Difficulties

National Aquarium Applications

Quality

Expensive

Food choice

Very portable

Overheat

On pole, into nests etc

Waterproof

Computer

Bill troubles



GoPro





Inspection Camera

Benefits	Difficulties	National Aquarium Applications
Real-time	Expensive	Burrows
Very portable	Quality	Behind walls, missing individuals

Inspection Camera



Inspection Camera



Inspection Camera



Inspection Camera





Nursery Camera

Benefits	Difficulties	National Aquarium Applications
Sound	Not great with obstructions	Fledge cages
Clarity/quality of video	No recording capability	Introductions
Ease of use	Needs power source	



Cell Phones?



Product Specifics



Nest Cameras: Birdhouse SpyCam Hawkeye

Approx. \$100.00 per unit



GoPro Cameras:

GoPro 3 Plus

Approx. \$300.00-400.00



Trail Camera: Simmons Whitetail with Night Vision

Approx. \$100.00 per unit



Crazyfire Inspection Camera

Approx. \$200.00



Levana Sophia

Approx. \$100.00



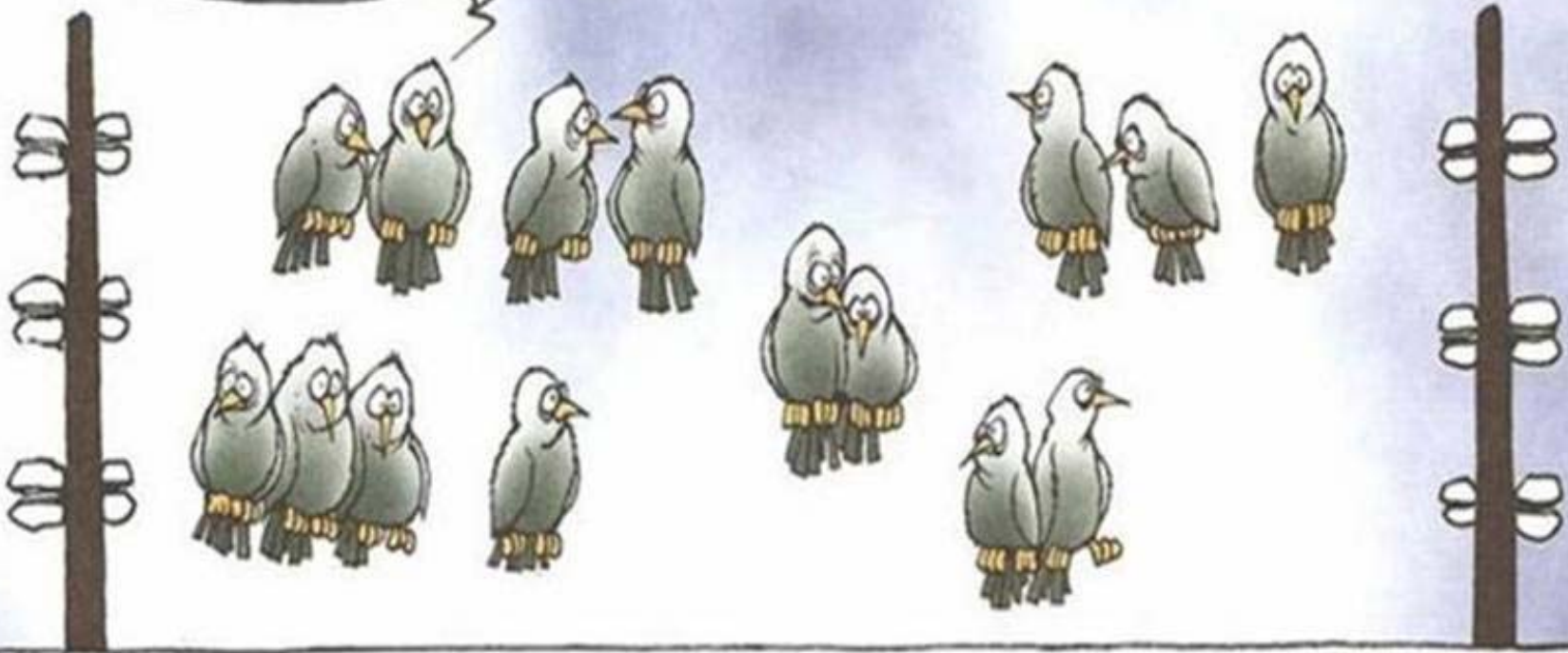
DSLR Camera:

Canon EOS Rebel

Approx. \$500.00-600.00



It is a bit freaky with this
wireless technology



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