Guidelines for the Use of Wild Birds in Research
2021 Literature Update

Chapter 6 - Minor Manipulations
Complied by: Jeanne Fair and Alicia Romero

The list below includes references relevant to this chapter published after this edition's release in 2010. References that are significant or note-worthy are so indicated in bold.

NEW REFERENCES

Bauch, C., A.H. Wellbrock, R. Nagel, J. Rozman, and K. Witte, Klaudia. 2013. "Bug-eggs" for common swifts and other small birds: minimally-invasive and stress-free blood sampling during incubation. Journal of Ornithology 154:581-85.
https://doi.org/10.1007/s10336-013-0931-x.
Outlines the use of haematophagous bugs (Triatominae) for minimally-invasive blood sampling in small birds with a bug-containing dummy egg for less stressful blood sampling during incubation

Bond, A. L., and J. L. Lavers. 2013. Effectiveness of emetics to study plastic ingestion by Leach Storm-Petrels (*Oceanodroma Leucorhoa*). Marine Pollution Bulletin 70:171–75.
10.1016/j.marpolbul.2013.02.030.
The authors use the emetic ipecac to study plastic ingestion in Leach's Storm-petrels in Newfoundland, Canada. The emetic had a lower mortality (8%) and was considered superior to the existing method of studying seabird plastic ingestion, in which individuals are salvaged, with a 100% mortality rate.

Borneman, T., Rose, E., and T. Simons, T. 2014. Minimal changes in heart rate of incubating American Oystercatchers (*Haematopus palliatus*) in response to human activity. Condor 116: 493-503. http://www.jstor.org/stable/90008470.
The authors placed artificial eggs with embedded microphones in 42 oystercatcher nests to record the heart rate of incubating oystercatchers. With the exception of high-speed, low-altitude military overflights, they found little evidence that oystercatcher heartrates were influenced by most types of human activity.

Bowers, E.K., Sakaluk, S.K. and C.F. Thompson, C.F. 2016. No effect of blood sampling or phytohaemagglutinin injection on postfledging survival in a wild songbird. Ecology and Evolution 6:3107-3114. https://doi.org/10.1002/ece3.2112.

Branislav, I., V. Nunez, U. Voss, H., R. Croston, Z. Aidala, A. López V., A.VanTatenhove, M. Holford, M.D. Shawkey, and M.E. Hauber. 2015. Using 3D printed eggs to examine the egg-rejection behaviour of wild birds. PeerJ https://www.proquest.com/scholarly-journals/using-3d-printed-eggs-examine-egg-rejection/docview/1957627870/se-2?accountid=27865
Here, the authors provide a detailed protocol for generating 3D printed eggs using either personal 3D printers or commercial printing services, and highlight additional potential future applications for this technology in the study of egg rejection.

Ceresa, F., Belda, E.J. and J.S. Monrós. 2014. Apomorphine as an emetic for insectivorous songbirds: effectiveness and post-release effects on survival and mass change. Journal of Field Ornithology 85:213-220. https://doi.org/10.1111/jofo.12062.

The results of this study suggest that apomorphine is a safe emetic, with no negative effect on survival in insectivorous songbirds.

Chin, S., McKinnon, E., Fraser, K., Rotenberg, J., & Stutchbury, B. (2014). No sex bias in wood thrushes (*Hylocichla mustelina*) captured by using audio playback during the non-breeding season. Wilson Journal of Ornithology 126: 599-605. https://www.jstor.org/stable/26456017.
The authors conclude that using song playback during the non-breeding season does not bias captures of Wood Thrushes by sex, age, or body size, and when used with caution, can be an effective tool for studies on wintering grounds.

Lahti, D.C. 2015. The limits of artificial stimuli in behavioral research: The Umwelt gamble. Ethology 121: 529-537. https://doi.org/10.1111/eth.12361.
An important discussion of the indirect effects of artificial stimuli, such as artificial eggs and species differences for rejecting eggs from nests.

Lattin, C.R., Reed, J.M., DesRochers, D.W. and L.M. Romero. 2011. Elevated corticosterone in feathers correlates with corticosterone-induced decreased feather quality: a validation study. Journal of Avian Biology 42: 247-252. https://doi.org/10.1111/j.1600-048X.2010.05310.x
The authors test validity of the technique for extracting corticosterone (CORT) from bird feathers as a less invasive measure of a bird's stress response. They experimentally increased plasma CORT concentrations using implants and found that the corresponding rise in CORT could be detected in feathers grown during implantation.

Lenis, P.R., and R. Guillermo-Ferreira. 2020. Effect of noise on behavioural response to simulated territorial intrusion in the Great Kiskadee (*Pitangus sulphuratus*) (Aves: Tyrannidae). Urban Ecosystems 23:93-96. https://doi.org/10.1007/s11252-019-00906-1.
This study investigated urban noise pollution impacts on the territorial behavior of the Great Kiskadee, showing that noise pollution can interfere with intraspecific communication, affecting territorial behavior.

Owen, E., F. Daunt, and S. Wanless. 2010. Sampling avian adipose tissue: assessing a nondestructive biopsy technique. Journal of Field Ornithology. 81:92-98.
www.jstor.org/stable/40983811.
The authors describe a nonlethal method for collecting adipose tissue from adults and chicks seabird species.

Owen, J.C. 2011. Collecting, processing, and storing avian blood: a review. Journal of Field Ornithology, 82:339-354. https://doi.org/10.1111/j.1557-9263.2011.00338.x.
Here, the author describes commonly used methods for collecting, processing, and storing blood and in addition, provides answers to frequently asked questions about blood collection.

Peixoto, L.F., Paiva, P.C. and L.P. Gonzaga. 2021. Song recordings and environmental factors affect the response rate of tropical screech-owls to conspecific playback: the importance of carefully designed protocols. European Journal of Wildlife Research 67:46
https://doi.org/10.1007/s10344-021-01491-5.
Here, the authors argue that playback protocols, whatever their goals, should be carefully designed and tested to improve their efficiency to improve their power, which might help in knowledge gathering.

Rocha, A.D., Araújo, P.M., Martinho, F.R., Ramos, J.A. and J.A. Masero. 2016. A non-lethal biopsy technique for sampling subcutaneous adipose tissue of small and medium-sized birds. Journal of Field Ornithology 87: 213-221. https://doi.org/10.1111/jofo.12145.
This paper describes biopsy procedure for collecting small amounts of adipose tissue from the furcular area of small and medium-sized birds (13-62 g) without adverse effects.

Slevin, M., Raybuck, D., and T. Boves. 2016. Prothonotary warblers (*Protonotaria citrea*) break their beaks during attacks on wooden conspecific decoys. Wilson Journal of Ornithology 128:193-197. http://www.jstor.org/stable/26429714.

Tell, L.A., J. A. Hazlehurst, R, R. Bandivadekar, J. C. Brown, A. R. Spence, D. R. Powers, D. W. Agnew, L. W. Woods, and A. Engilis, Jr. 2021. Hummingbird (Family Trochilidae) research: welfare-conscious study techniques for live hummingbirds and processing of hummingbird specimens. Special Publications of the Museum of Texas Tech University, Number 76. https://www.depts.ttu.edu/nsrl/publications/downloads/SP76.pdf
An incredible resource for all types of research methods that involve hummingbirds.

Virzi, T., Boulton, R., Davis, M., Gilroy, J., and J. Lockwood. 2012. Effectiveness of artificial song playback on influencing the settlement decisions of an endangered resident grassland passerines. Condor 114: 846-855. https://doi.org/10.1525/cond.2012.100197.

Voss, M., D. Shutler, and J. Werner. 2010. A hard look at blood sampling of birds. The Auk. 127: 704–708. https://doi.org/10.1525/auk.2010.10033.
An important perspective on blood sampling and review on the impacts of blood sampling and the protocols for lessening impacts.