



## FEATHER SAMPLING PROTOCOL

### 2010-2011 Season

We welcome feathers from **any migratory or resident species, collected any time of the year, including migration.** However, if you would like to prioritize your local efforts, our species of emphasis are listed below:

Swainson's Thrush	(SWTH)	American Robin	(AMRO)
Hermit Thrush	(HETH)	Nashville Warbler	(NAWA)
Common Yellowthroat	(COYE)	Yellow Warbler	(YWAR)
Yellow-breasted Chat	(YBCH)	Blackpoll Warbler	(BLPW)
Gray Catbird	(GRCA)	Brown-headed Cowbird	(BHCO)
House Finch	(HOFI)	Wilson's Warbler	(WIWA)
Wood Thrush	(WOTH)	Black-&-White Warbler	(BAWW)
Veery	(VEER)	American Redstart	(AMRE)
Gray-cheeked Thrush	(GCTH)	Prothonotary Warbler	(PROW)
Ovenbird	(OVEN)	Northern Waterthrush	(NOWA)
Warbling Vireo	(WAVI)	Louisiana Waterthrush	(LOWA)
Orange-crowned Warbler	(OCWA)	Kentucky Warbler	(KEWA)
Connecticut Warbler	(CONW)	Dark-eyed Junco	(DEJU)
Northern Parula	(NOPA)	Mourning Warbler	(MOWA)
Chestnut-sided Warbler	(CSWA)	Hooded Warbler	(HOWA)
Magnolia Warbler	(MAWA)	Pine Siskin	(PISI)
Yellow-rumped Warbler	(YRWA)	Pine Warbler	(PIWA)
Black-throated Gray War.	(BTYW)	Scarlet Tanager	(SCTA)
Black-throated Green War.	(BTNW)	Chipping Sparrow	(CHSP)
Yellow-throated Warbler	(YTWA)		

### Feather Collection Protocol

When tail feathers are pulled, a small amount of skin cells remain attached to the quill of the feather. These skin cells are a valuable source of DNA that can be used to determine the population origin of an individual bird. Moreover, a portion of the feather itself can be used for stable isotope analyses, which can provide important information on the location (at least latitude) where the feather was grown. Researches at UCLA and elsewhere use the results of DNA and stable isotope analyses to investigate patterns of migratory connectivity in birds, that is, to determine wintering locations for populations of breeding birds and vice-versa. We recommend that two tail feathers be collected during the banding process

from each bird (excluding woodpeckers for which tail feathers are critical to their foraging ability). There is no need to collect feathers from the same individual more than once during the same season.

### **1. Collecting Feather Samples**

To collect a sample, pluck **one central and one outer tail feather (e.g., L1 and R6)**. To pluck the feathers, just hold them firmly, relatively close to the base, and pull gently. Do not touch the quill, as the DNA is extracted from the skin cells attached to it.

### **2. Collecting Data**

Place the feathers from each bird into one of the pre-printed envelopes provided by CTR. Providing your own envelopes is fine, but please make sure each envelope contains the following information clearly printed on it:

- Species Name
- Band Number
- Date (**Please use letters for the month instead of numbers**)
- Location\* (Location Code and Station Code)
- Age, Sex and Breeding Condition (as determined by brood patch or cloacal protuberance)\*\*
- Whether or not the bird was a recapture

\* Please enclose the details of the station and location on a sheet of paper: if possible, GPS coordinates, Nearest Town, State/Province, and County.

\*\* Please make a note if you notice that the central rectrix is of a different generation than the outer rectrix (e.g., alternate vs. basic or juvenal vs. formative feather).

### **3. Returning Completed Samples to UCLA**

Feathers are preferably stored refrigerated at 4°C but can be stored at room temperature. Send your samples in a single shipment at the end of your field season using the provided return FedEx shipping labels (the address is also provided below). If shipping without the provided label please send via FedEx or UPS. Please **DO NOT USE THE U.S. postal service** to send us your feathers. The U.S. Postal Service irradiates mail with high-power radiation that might damage the DNA in the feather samples.

**Thank you very much for your participation in this important work!**

For any questions and further information contact: **Erin Toffelmier, Center for Tropical Research, Institute of the Environment, University of California, Los Angeles, 621 Charles E. Young Drive South, 5330 Life Sciences Building, Los Angeles, CA 90095-1496, USA; Tel: (310) 267-4460; E-mail: [etoff@ucla.edu](mailto:etoff@ucla.edu).**