Center for Tropical Research and The Conservation Genetics Resource Center- UCLA
NEOTROPICAL MIGRANT CONSERVATION GENETICS PROJECT

FEATHER SAMPLING PROTOCOL

2016 Season

We welcome feathers from **any migratory or resident passerine species (no woodpeckers), 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:

First Priority Taxa - We have genomic sequencing planned for this coming year and we will be building population specific migration maps within the next couple of years for the following species:

Alder Flycatcher	(ALFL)	Willow Flycatcher	(WIFL)
Common Yellowthroat	(COYE)	Yellow Warbler	(YEWA)
Painted Bunting	(PABU)	Yellow-rumped Warbler	(YRWA)
Tricolored Blackbird	(TRBL)		

Second Priority Taxa - We are continuing to build the collection and hope to create maps for the following taxa as funding becomes available:

American Goldfinch	(AMGO)	Oregon Junco	(ORJU)
American Redstart	(AMRE)	Ovenbird	(OVEN)
American Robin	(AMRO)	Painted Bunting	(PABU)
Black-and-white Warbler	(BAWW)	Pine Siskin	(PISI)
Black-capped Chickadee	(BCCH)	Prothonotary Warbler	(PROW)
Black-headed Grosbeak	(BHGR)	Red-eyed Vireo	(REVI)
Carolina Wren	(CARW)	Ruby-crowned Kinglet	(RCKI)
Chipping Sparrow	(CHSP)	Slate-colored Junco	(SCJU)
Fox Sparrow	(FOSP)	Song Sparrow	(SOSP)
Gray Catbird	(GRCA)	Spotted Towhee	(SPTO)
Hermit Thrush	(HETH)	Swainson's Thrush	(SWTH)
Hooded Warbler	(HOWA)	Tennessee Warbler	(TEWA)
Indigo Bunting	(INBU)	Warbling Vireo	(WAVI)
Kentucky Warbler	(KEWA)	Western Tanager	(WETA)
Lincoln's Sparrow	(LISP)	White-eyed Vireo	(WEVI)
MacGillivray's Warbler	(MGWA)	White-throated Sparrow	(WTSP)
Mountain Chickadee	(MOCH)	Wilson's Warbler	(WIWA)
Nashville Warbler	(NAWA)	Wrentit	(WREN)
Northern Waterthrush	(NOWA)	Yellow-breasted Chat	(YBCH)
Orange-crowned Warbler	(OCWA)	Wood Thrush	(WOTH)

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. Researchers 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 with necessary paperwork

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.

Copies of the following Permits must be included in the shipment:

For shipments from **outside of the U.S.** please include the following:

1. FWS Declaration of package contents and samples (see: http://www.fws.gov/le/pdf/3177_1.pdf)
2. Importers FWS MBTA permit # MB079347-3 (contact Winnie Le for a copy)
3. Importers USDA permit # 48864 for international shipments (contact Winnie Le for a copy)
4. USDA declaration letter (contact Winnie Le for an example)
5. The collectors federal holding permit, i.e. a bird banding permit.

For shipments **within the U.S**., please include the following:

1. Importers USDA permit #48865 for shipments within the US (contact Winnie Le for a copy)
2. The collectors federal holding permit, i.e. a bird banding permit.

Thank you very much for your participation in this important work! Please let us know if you have any questions.

For further information contact: **Winnie Le, Center for Tropical Research, Institute of the Environment, University of California, Los Angeles, 610 Charles E. Young Drive East, 4162 TLSB, Los Angeles, CA 90095, USA; Tel: (310) 267-4460; E-mail: lewinnie@ucla.edu**