



2023 FEATHER SAMPLING PROTOCOL

The Bird Genoscape Project welcomes feathers from **any migratory or resident species**, not limited to the lists below, collected any time of the year, including migration. However, if you would like to prioritize your local efforts, the categories below list our species of emphasis:

Category I: Species for which we are currently building population-specific range maps. We are actively collecting samples from **all stages of the annual cycle**:

Alder Flycatcher	(ALFL)	Kentucky Warbler	(KEWA)
American Crow	(AMCR)	LeConte's Sparrow	(LCSP)
American Robin	(AMRO)	Least Flycatcher	(LEFL)
Baird's Sparrow	(BAIS)	Lincoln's Sparrow	(LISP)
Bay-breasted Warbler	(BBWA)	Loggerhead Shrike	(LOSH)
Blackburnian Warbler	(BLBW)	MacGillivray's Warbler	(MGWA)
Black-capped Chickadee	(BCCH)	Magnolia Warbler	(MAWA)
Black-throated Blue Warbler	(BTBW)	Mourning Warbler	(MOWA)
Black-throated Green Warbler	(BTNW)	Nashville Warbler	(NAWA)
Blue-headed Vireo	(BHVI)	Ovenbird	(OVEN)
Boreal Chickadee	(BOCH)	Palm Warbler	(PAWA)
Brewer's Sparrow	(BRSP)	Red-eyed Vireo	(REVI)
Brown Creeper	(BRCR)	Ruby-crowned Kinglet	(RCKI)
Cape May Warbler	(CMWA)	Sprague's Pipit	(SPPI)
Chestnut-collared Longspur	(CCLO)	Tennessee Warbler	(TEWA)
Chestnut-sided Warbler	(CSWA)	Veery	(VEER)
Dark-eyed Junco	(DEJU)	Western Grebe	(WEGR)
Golden-crowned Kinglet	(GCKI)	Western Tanager	(WETA)
Grasshopper Sparrow	(GRSP)	White-throated Sparrow	(WTSP)
Hairy Woodpecker	(HAWO)	Yellow-billed Cuckoo	(YBCU)
Henslow's Sparrow	(HESP)	Yellow-bellied Flycatcher	(YBFL)
Horned Lark	(HOLA)	Yellow-bellied Sapsucker	(YBSA)
		Yellow-rumped Warbler	(YRWA)

Category II: Species for which we are primarily working on wintering assignments of populations. We actively need samples primarily from **the wintering grounds only**:

American Redstart	(AMRE)	Painted Bunting	(PABU)
Canada Warbler	(CAWA)	Willow Flycatcher	(WIFL)
Common Yellowthroat	(COYE)	Wilson's Warbler	(WIWA)
Hermit Thrush	(HETH)	Yellow Warbler	(YEWA)

Category III: Species for which we will build population-specific range maps as funding becomes available. We are actively collecting samples from **all stages of the annual cycle**:

American Goldfinch	(AMGO)	Oregon Junco	(ORJU)
Black-and-white Warbler	(BAWW)	Pine Siskin	(PISI)
Blackpoll Warbler	(BLPW)	Prothonotary Warbler	(PROW)
Black-headed Grosbeak	(BHGR)	Rusty Blackbird	(RUBL)
Carolina Wren	(CARW)	Slate-colored Junco	(SCJU)
Chipping Sparrow	(CHSP)	Song Sparrow	(SOSP)
Fox Sparrow	(FOSP)	Spotted Towhee	(SPTO)
Gray Catbird	(GRCA)	Virginia's Warbler	(VIWA)
Hooded Warbler	(HOWA)	Warbling Vireo	(WAVI)
Indigo Bunting	(INBU)	White-eyed Vireo	(WEVI)
Mountain Chickadee	(MOCH)	White-crowned Sparrow	(WCSP)
Mountain Plover	(MOPL)	Wrentit	(WREN)
Northern Shrike	(NSHR)	Wood Thrush	(WOTH)
Northern Waterthrush	(NOWA)	Yellow-breasted Chat	(YBCH)
Orange-crowned Warbler	(OCWA)		

FEATHER COLLECTION AND SHIPPING 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. We recommend that two tail feathers be collected during the banding process from each bird. This does not include woodpeckers and birds of prey for which tail feathers are critical for foraging. For these species, 10 body feathers will suffice.

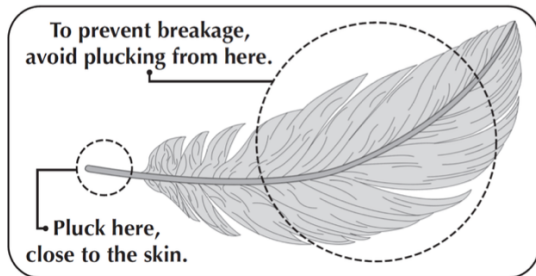
There is no need to collect feathers from the same individual more than once during the same season.

Collecting Feather Samples

Before taking any feather samples, make sure that your hands are clean. If you are collecting samples from multiple birds, wash or sanitize your hands between each collection.

To collect a sample, pluck one central and one outer tail feather (e.g., R1 & R6). To pluck the feathers, hold them firmly, relatively close to the base, and pull gently. *See illustration.*

Do not touch the quill, as the DNA is extracted from the skin cells attached to it.



Metadata Requirements

Place the feathers from each bird into one of the BGP provided pre-labeled envelopes and fill out metadata. Using your own envelopes is fine, but please use **coin-sized envelopes** and ensure that each envelope contains the required information listed below.

- Species name
- Band number
- Date (Please use letters for the months instead of numbers, e.g., APR 25, 2021)
- Station and location codes, or nearest town and city
- Age, sex, and breeding condition (as determined by brood patch or cloacal protuberance)
- Whether or not the bird was a recapture
- BGP ID# can be left blank; this will be assigned after we receive the samples

On a separate paper or in an email, please also provide the following location details:

- Nearest town, state/province, country
- GPS coordinates in decimal format

PLEASE NOTE: **If possible, please email an electronic version of metadata** to Jacob Job (birdgenoscape@gmail.com). The preferred format is available below.

Species	Band #	Date Collected	Recapture	Sex	Age	Country	State	Near Town	Lat	Long	Sample Type
American Robin	XXXX-XXXXX	dd/mm/yyyy	Y or N	M, F, or U	If known	USA	MD	Silver Spring	39.01	77.02	Feather, Blood, Tissue, DNA

Feather Storage

Feathers are preferably stored in 4°C refrigerators but can also be stored at room temperature away from direct sunlight. Please store samples until end of field season to minimize shipments (see shipping instructions below).

Sample Shipment

When you're ready to mail your samples, please email Jacob Job (birdgenoscape@gmail.com) with the following information to request a prepaid FedEx or UPS label:

- Approximate weight of package
- Preference for UPS or FedEx label
- Return address
- Contact number + email

If using your own label, please mail the samples to the following address:

ATTN: Jacob Job
Colorado State University, Biology
200 W. Lake Street
Campus Delivery 1878
Fort Collins, CO 80523

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

For domestic shipments **of samples collected within the USA**, please include:

1. A copy of your (the collector's) federal bird banding permit
2. A copy of your (the collector's) state scientific collecting permit
3. A copy of the importer's USDA domestic transport permit #138961*

For domestic shipments **of samples previously imported to the USA**, please include:

1. A copy of your (the collector's) federal bird banding permit
2. A copy of your (the collector's) state scientific collecting permit
3. A copy of the importer's USDA domestic transport permit #138961*

For shipments from **outside of the USA** please include:

1. A copy of the importer's USDA international transport permit #138972*
2. A copy of the importer's USFWS Migratory Bird import/export permit*
3. A copy of your (the collector's) federal bird banding permit
4. A copy of your (the collector's) provincial scientific collecting permit (for Canada)
5. USFWS Form 3-177 (Declaration of importation or exportation of fish or wildlife) – can also be filled online at <https://edecs.fws.gov/>
6. FedEx Declaration of Biological Shipments
7. FedEx Commercial Invoice
8. CITES export permit as necessary

*Forms provided by the Bird Genoscape Project

Thank you very much for your participation in The Bird Genoscape Project! If you would like to collaborate on a particular species or learn more about the current sample distribution for our target taxa, please visit our website:

www.birdgenoscape.org