Scientific Collecting Permit Portal dkarp@ucdavis.edu ?

State of California – Department of Fish and Wildlife

SCIENTIFIC COLLECTING PERMIT, SPECIFIC USE – APPLICATION

DFW 1379S (NEW 09/01/17)

Individual SCP ID: S-212650004-21266-001 (Draft - Application)

Section 1. Permit Request

Section 1. Permit Request

Specific Use Permit ID
S-212650004-21266-001

Reference Title
The conservation and food-safety impacts of birds

Permit Type *
Specific Use (S)

Permit Requestor
dkarp@ucdavis.edu

Request Status
Draft - Application

Delete Application
No
Mark Item for Deletion.

Section 2. Permitholder Information

Section 2. Permitholder Information

Permitholder Type
Individual

Permitholder Name
SC-212650004: Daniel S Karp

Permitholder Email Address
dkarp@ucdavis.edu

Permitholder Address
1071 Academic Surge, One Shields Avenue

Permitholder P.O. Box

Permitholder Coun
United States of Ame

Permitholder City
Davis

Permitholder State
California

Permitholder Zip C
95616

Permitholder Preferred Phone Number
530-219-9868

Permitholder Alternate Phone Number
530-752-2108

Permitholder Affiliation
University of California, Davis
Provide the name and brief description of who you are affiliated with as it pertains to this application.

Section 3a. Required Qualifications

Section 3a. Required Qualifications

Profile attachments are required for all persons requested in the application to independently conduct permitted activities, conduct a portion of the permitted activ the permit as an Authorized Individual (refer to Title 14, subsections 650(b)(2) and 650(h) CCR).

Anyone associated with this application MUST complete and maintain a Profile in this system.

**** Select "Yes" below to confirm all persons requesting to be named on this permit have attached the required documents to their individual profi***

I confirm all Individuals named on this permit have attached the required documents.

- (●) Yes
- ( ) No

Section 3b. Principal Investigator (PI)

Section 3b. Principal Investigator (PI)

The Principal Investigator (PI) is responsible for providing adequate supervision and training of all Authorized Individuals named or covered on the permit (refer t 650(b)(19) CCR).

Individual Permit Principal Investigator *

Edit	Principal Investigator	PI Status	Approval Status	Conditions
	SC-212650004: Daniel S Karp	Active	Pending	

Add Principal Investigator

Section 3c. List of Authorized Individuals

Section 3c. List of Authorized Individuals

Specific Use: Up to eight (8) Authorized Individuals, aside from the PI, may be requested with the initial permit fees (refer to Title 14, subsection 650(j), CCR). Cl you are requesting Authorized Individuals to be named on your permit.

If additional Authorized Individuals above eight (8) are required to complete the work on a Specific Use Permit, then a Specific Amendment fee will be assessed a subsections 650(l) and 703(c), CCR, in addition to the permit fees. Provide justification below under "Additional Authorized Individuals Justification" of why the pr would need more than eight (8) Authorized Individuals.

Ensure the profile for each proposed Authorized Individual has the required qualifications (refer to Section 3a above).

If no Authorized Individuals are to be named, leave the box unchecked and skip to Section 3d of this application.

***NOTE**: Student Permitholders are not authorized to have Authorized Individuals named on their permits.*

Are you requesting Authorized Individuals be named on this permit?

- (●) Yes
- ( ) No

Specific Use Authorized Individuals *

Edit	Authorized Individual	AI Status	Role	Approval Status	Conditions
	SC-212440002: Katherine S Lauck	Active		Pending	

Add Authorized Individual

Additional Authorized Individuals Justification

Section 3d. Related Permits

Section 3d. Related Permits

If there are any collaborators (Permitholders, and/or Principal Investigators or Authorized Individuals not listed above in Section 3c) with permits related to the w this permit, provide their names and Permit IDs below by clicking "Add Related Permit."

Related Permits *

There are no items to show in this view.

Add Related Permits

Section 4a. Purpose of Permit

Section 4a. Purpose of Permit

Add the applicable purpose(s) below for this permit by highlighting the purpose then clicking "Add." If none of the choices clearly fit into the scope of your permit, specify in the "Other" field the purpose of the permit. (Refer to Title 14, subsection 650(b) CCR)

Specific Use: For Section 4, provide all details to answer each question in the following fields. You may provide an attached study proposal or additional informatic information entered into each field in subsections 4a-4f must contain sufficient detail to be able to stand-alone for the evaluation of the application.

***NOTE**: The Inland Fisheries and Marine programs do not authorize General Use permits for the purpose of propagation*

Permit Purpose *

Education - Display of dead salvaged specimens
Education - Live display of releasable or non-releasable wildlife in
Education - Other
Propagation - Captive (ex situ)
Propagation - Other

Add >

< Remove

Education - Display then release animals in the field
Science - Research

Section 4b. Permit Information

Section 4b. Permit Information

Upload the "Permit Information" document in Section 6. The Permit Information document must contain the following information with these sp

Section 4b(1). Permit Scope, Goals, and Objectives

Explain in detail the fundamental scope of the proposed study or planned undertaking for the permit. This includes relating the purpose(s) of your proposed study undertaking to any research questions and/or hypotheses, goal(s) and objective(s) designed to carry out all requested activity(ies). A planned undertaking may c studies and/or activities sharing a fundamental scope with unifying goals, and depending on the taxonomic groups, conservation status of the species, invasivene procedures and locations proposed, may be grouped under a single permit (e.g., presence/absence or inventory surveys for terrestrial wildlife, possibly at one or to Title 14, subsection 650(i)(2).

Section 4b(2). Permit Need or Benefit

Justify the need and/or benefit of the proposed take of wildlife and activities for science, education, and/or propagation pursuant to Title 14, subsection 650(c), as

- *Scientific purpose: include the significance of the research, questions or hypotheses seeking to be addressed, and/or how your research would directly bene an important research, management, or other need. Pursuant to subsection 650(b)(23), research includes, but is not limited to, surveys or inventories to as or to monitor actual project impacts on wildlife resources (e.g., presence/absence surveys, or monitoring).*
- *Educational purpose: include the significance of the education or educational program, training, and/or benefit of instruction about the state's natural resou*
- *Propagation purpose: include the significance of propagation or sustainability benefit, in situ (or maintain in wild) or ex situ (captive outside the wild) breed possession of hatchery raised fish, ecosystem restoration benefits or population augmentation, and/or efforts to promote maintenance of biologically sustair*

Section 4b(3). Study or Planned Undertaking Timeframe

Indicate the timeframe for the entire study or period of planned undertaking, even if it extends beyond the duration of this permit (three years for Entity and Individual Permitholde Permitholders)- including all activities, and field and lab work.

Permit Information Document Attached?

- (•) Yes
- ( ) No

Required: Attach "Permit Information" document in Section 6.

Section 4c. Background and Past Findings

Section 4c. Background and Past Findings

If applicable, upload the "Background and Past Findings" document in Section 6. The Background and Past Findings document must answer the f information:

1. Identify pertinent background information, including survey protocols and a literature cited section, which supports the proposed activity(ies) (e.g., presence/abs provide copies of any reports or publications from previous or similar research activities conducted on the requested wildlife. Explain how the research will address questions not an research.

2. Discuss how any past findings have contributed to the body of knowledge on the subject and how they relate to your proposed goals and objectives.

3. Explain how your proposed activity(ies) relate to a larger series of projects or research plans. Be sure to explain any Related Permits identified in Section 3c of this application.

4. If there is an existing conservation strategy or management plan that relates to your proposed activity(ies) (e.g., USFWS recovery plans, California Specie manuscripts, Department Fishery Management Plan), identify conservation actions, recovery tasks, research needs and/or monitoring recommendations. Be s permits or environmental documents identified in Section 5 of this application.

Background and Past Findings Document Attached?

- ( ) Yes
- (•) No

Optional: Attach "Background and Past Findings" document in Section 6.

Section 4d. Executive Summary

Section 4d. Executive Summary

Provide a brief title for the study or planned undertaking that accurately represents the full scope of the proposed activity(ies) for the permit duration period. The the purpose, targeted wildlife taxonomic group(s) or species, and general location(s).

Title

The conservation and food-safety impacts of birds in working landscapes

Limit of 255 characters.

Provide a summary of the proposed activity(ies) that includes the main goals and objectives or research question(s), species or taxonomic group(s), take and ana general locations. Additional information, e.g. past findings, benefit or need, or relevant environmental documents or plans may be provided, but is not required.

Abstract

The fate of biodiversity in the Anthropocene will largely depend on the ability of species to survive alongside us in landscape mosaics of farms and patche habitat. While recent work suggests that large concentrations of wildlife are often found in farming landscapes, at least two major barriers exist to their c persistence. First, because farms often lack tree canopies that shade the understory, increasingly common temperature spikes associated with climate cha many agricultural systems inhospitable in the future. Second, fear that wildlife carry foodborne diseases (e.g., pathogenic E. coli) has created great pressu discourage wildlife from visiting their farm fields. We propose using wild birds in the California Central Valley as a model system to (1) quantify and compa temperature spikes on bird health and reproduction between farms, grasslands, and forests and (2) develop a holistic assessment of the potential food-sa birds. To address objective 1, we will monitor nests placed in four habitat types: riparian forests, open grasslands, row-crop agriculture, and orchards. We cooling effect of canopy cover on the levels of heat faced by nestlings across these land uses and relate this stressor to growth, parental feeding rate, and physiology to understand the mechanisms underpinning reduced growth and survival associated with extreme heat. To address objective 2, we will captu mist nets and from nest boxes, collect fecal samples, and then assay those fecal samples for Salmonella spp., Campylobacter spp., and pathogenic E. coli.

Limit of 3,000 characters.

Issued SCPs are public records, pursuant to Title 14, subsection 650(k), CCR, and through the Public Records Act. However, the Department requests Permitholde preferred contact information, and Executive Summary (Study Title and Abstract) available to interested parties to facilitate research communication and collabor

Indicate your preference for the Department to display your preferred contact information and Executive Summary on the Department's website below.

***NOTE:** Release is mandatory for applications requiring public notice: request of mountain lion, or pursuit of bobcat (Lynx rufus) or bear (Ursus americanus) with Sections 4810 and 3960.4 of the Fish and Game Code.*

Public Information Release Preference

- (•) Yes
- ( ) No

Select "Yes" to all CDFW to release your contact information and permit executive summary.

Section 4e. Taxonomic Groups

Section 4e. Taxonomic Groups

Select the taxonomic group(s) that will be targeted during the course of the proposed study, activity(ies), or planned undertaking (subsection 4f(1)(a), and those non-targeted (incidental) by-catch (subsection 4f(1)(b) below). The selected group(s) will determine which Department review program(s) the application will be and approval.

***Terrestrial Invertebrates:** Refer to Title 14, subsections 650(i)(2) and 650(u)(5), CCR. Specific Use permits are required for intentional take and/or possessio invertebrates covered on the California Terrestrial and Vernal Pool Invertebrates of Conservation Priority list (dated June 12, 2017 or any later amendments), or c considered to be Prohibited Wildlife on the Terrestrial Wildlife General Use permit application (form DFW 1379GW)*

Taxonomic Group *

Fisheries - Anadromous Fish (Inland Waters) Fisheries - Inland Aquatic Invertebrates Fisheries - Inland Non-Anadromous Fish Marine - Marine Algae and Plants Marine - Marine Fishes	Add > / < Remove	Wildlife - Birds

Activity and Disposition

Select the take of wildlife activity(ies) and disposition(s) proposed. The selected items will determine which sections are required in Section 4f.

Activity and Disposition *

Captivity Permanent Captivity Temporary Relocate Sacrifice Salvage	Add > / < Remove	Capture Procedure Release

Review of Species Information

Any person named or covered in this permit, should review the following prior to conducting planned activities:

- *The Department's California Natural Diversity Database Quickview, or other online tool*
- *The California Endangered Species Act (CESA) Candidate, Endangered and Threatened species list*
- *The Department's Special Animals List for Fully Protected species and California Species of Special Concern*
- *Any other source of information for sensitive wildlife species*

If certain sensitive species are encountered in the area of planned activities, or if methods and locations authorized by this permit result in take of CESA-listed or species, contact the appropriate review program about whether a Memorandum of Understanding (MOU), pursuant to Fish and Game Code Section 2081(a), and/ 670.7, CCR is required.

**** Select "Yes" below to confirm all persons named on this permit have reviewed and understand this information.***

I confirm all Individuals named on this permit have reviewed the items listed above.

- (●) Yes
- ( ) No

Section 4f(1)(a). Targeted Wildlife

Section 4f(1)(a). Targeted Wildlife

For each Taxonomic Group listed, add the proposed targeted species, or if requesting at a higher taxonomic level than species enter the proposed lowest level(s) group(s).

Targeted Terrestrial Wildlife *

Edit	Targeted Wildlife	Life Stage	Activity / Disposition	Method	Procedure	County	Geographic Location	Conditi
	Birds [excluding FP and T&E] (Aves)	Adult; Hatchling; Juvenile	Capture; Procedure; Release	Hand; Net, Mist; Trap, Baited; Locate And/Or Monitor Nests	Band, Metal leg; Sample, Blood; Measure and Weigh	Yolo; Solano	Putah Creek; Putah Creek Wildlife Area; South Fork Putah Creek	

⊕ **Add Wildlife Targeted Species**

Section 4f(1)(b). Non-Targeted Wildlife

Section 4f(1)(b). Non-Targeted Wildlife (Incidental By-catch)

For each Taxonomic Group selected, add the possible non-targeted (incidental by-catch) species; or if the species is unknown, enter the proposed lowest level(s) group(s).

Non-Targeted Terrestrial Wildlife *

There are no items to show in this view.

⊕ **Add Wildlife Non-Targeted Species**

Section 4f(1)(c). Measures Minimizing Harm of Wildlife

Section 4f(1)(c). Measures Minimizing Harm of Wildlife

Describe what measures will be employed to minimize incidental harm or death of all captured wildlife, including how you will avoid the incidental capture (by-cat wildlife and special status species, and describe how you will minimize risk to wildlife during handling and/or procedures (e.g., personnel are trained in identificati discriminant capture methods, handling procedures and duration, etc.).

** If additional space is required, describe the measures above in a separate document, and attach the document in Section 6.*

Measures Minimizing Harm of Wildlife

See attached

Section 4f(3). Method Details

Section 4f(3). Take Method Details

Provide the details for each proposed method used to capture or otherwise take the requested specific species or taxonomic level(s) above.

Method Details *

Edit	Taxonomic Group	Methods	Details	Appro Statu
	Wildlife	Locate And/Or Monitor Nests	We maintain a network of 110 passerine nest boxes placed in row crop agriculture, orchards, and grasslands. We will visit each nest box weekly and record its contents (species, stage, and number). When Western Bluebird or Tree Swallow successfully complete a nest of eggs and begin incubating, we will begin monitoring the nest temperature by placing two small temperature sensors, one on the exterior of the box and one under the nest. These sensors will remain on the box for the duration of the nest. When the nestlings have hatched, we will remove them from the nestbox once a week by hand and place them in a small, soft cotton bag for an average of 15 minutes while we measure and weigh them. During the last measurement (1-2 weeks before fledging), nestlings will be banded with a metal leg band and a small blood sample will be acquired via puncture of the medial metatarsal vein with a sterile needle and collection into a sterile hematocrit tube (approximately 50 microliters and/or <1% of the individual's body mass).	Pendin
	Wildlife	Net, Mist	Mist nets will be placed around the Student Farm, the Russell Ranch Sustainable Agriculture Facility, and/or adjacent non-crop habitats near UC Davis. Nets will be operated under standard protocols, beginning at sunrise and continuing for 5 hours. We will check nets every 20-30min, a time period considered standard responsible procedure. At this point, birds will be extracted from nets, placed in sterilized, breathable cotton bags and transported to a nearby banding station. Bags will be chosen to be large enough to allow birds to move comfortably and without restraint. We will follow standard banding procedure, ensuring that bands are properly placed on birds such that they will cause no future discomfort (i.e., they are correctly sized and applied). Finally, we will collect morphometric measurements (i.e., mass, tarsus length, bill length, and wing chord) before release. No bird will kept for more than 2 hours (and most will be released within 1 hour of capture).	
	Wildlife	Trap, Baited	If capture rates are too low to achieve our sampling goals, then we will also capture birds with Potter Traps (small wire cages, baited with food, that have pressure-triggered closing doors). These traps do not harm birds, but are much less likely to capture sufficient numbers for our purposes. As such, we will only use Potter Traps if mist nets completely fail. Potter Traps will also be checked and emptied every 20-30 minutes. Birds will be placed in bags, allowed to defecate, identified, and banded before release.	Pendin

Add Method Details

Section 4f(4). Procedure Details

Section 4f(4). Procedure Details

Provide the details for each proposed procedure requested to be performed on specific species or taxonomic level(s) above.

Procedure Details *

Edit	Taxonomic Group	Procedures	Details	Appro Statu
	Wildlife	Band, Metal leg	Objective 1 -- One to two weeks prior to fledging, we will affix a small metal leg band (USGS) to one leg on each nestling using standard banding pliers of the appropriate size for each band. These bands will be sized correctly for adults of the species and applied when the nestlings are the proper size so that their tarsi are long enough and their feet and ankles are large enough to hold the band in a safe and comfortable position. PI Karp is a federally licensed Master Bander. Objective 2 -- We will identify and band each bird captured. Bands will be sized appropriately for each species and bird, and we will use appropriately sized standard banding pliers. PI Karp is a federally licensed Master Bander; personnel on this request have been sub-permitted on his license.	
	Wildlife	Measure and Weigh	We will collect morphometric data for all birds captured (body weight, wing chord, tarsus length, and bill length). We will use wing rulers to measure wing chord, plastic analog calipers to measure tarsus length and bill length, and a portable digital balance to measure weight. We will collect this data from nestlings weekly and from all adults captured for fecal sample collection.	
	Wildlife	Sample, Blood	To quantify nestling stress physiology, we will collect a small blood sample via puncture of the medial metatarsal vein with a sterile needle and collection into a sterile hematocrit tube (approximately 50 microliters and/or <1% of the individual's body mass). Samples will be kept on ice (max. 4h) and then centrifuged to separate plasma from red blood cells. Plasma will be aspirated, frozen (-20 oC), and then corticosterone concentrations will be quantified via an immunosorbent assay.	
	Wildlife	Sample, Other Tissue	We will collect fecal samples from birds captured in mist nets and birds hand-captured from nest boxes. Past experience suggests that most birds (~75%) will defecate after being placed in a bag. At the banding station, feces will be removed from bags and placed in vials. Samples will be placed in vials for pathogen screening.	

Add Procedure Details

Section 4f(7). Geographic Location Details

Section 4f(7). Geographic Location Details

Select the geographic area(s) from the dropdown list in which you plan to conduct activity(ies) for the duration of the permit.

To help expedite permit review, provide the specific location(s) of study area(s) of the proposed activities, when known. When specific geographic areas are not k application, indicate if planned activities are statewide, or range-wide for a species (e.g., if planning to conduct surveys on a contract basis in the future, such as surveys, county(ies) and/or specific locations may be provided later, and you may be required to submit an application for a Specific Amendment).

For each specific location or study area, provide the following specifics, including justification, and the finest scale location description possible under "Details":

- *If your request is for aquatic species, identify the aquatic system(s) and provide: the Hydrologic Unit Code (HUC 8 Watershed #), inland stream/ waterbody and end river miles, when known), and/or other inland water (e.g., reservoir, lake names).*
- *Provide any identifying property designations (i.e., land ownership) and/or geographic coordinates (i.e., latitude, longitude, and datum) that will precisely p the proposed activity site(s).*
- *If you propose to work in a Marine Protected Area (MPA), Marine Managed Area (MMA), Wildlife Area (WA) or Ecological Reserve (ER), provide the name an*
  - *Why collection is required within an MPA, MMA, WA, or ER and provide justification for why it cannot be conducted outside of an MPA;*
  - *Why the proposed methods are appropriate for this activity; and*
  - *Describe the frequency of the proposed activity per sampling area.*
- *If GPS Point or Centroid of Polygon (e.g., weir, mist-net location or sampling area) enter the specific details, if known, for each specific location requested.*

Geographic Location Details *

Edit	Taxonomic Group	County	Locations	Details	Appro Statu
	Wildlife	Yolo; Solano	Putah Creek; Putah Creek Wildlife Area; South Fork Putah Creek	The proposed study will be carried out on farms in and around the UC Davis campus, as well as sites in riparian areas, oak woodlands, and grasslands near Putah Creek in Yolo/Solano counties. Sites include: (1) the Putah Creek Riparian Reserve, (2) the Putah Creek Riparian Reserve Experimental Ecosystem, (3) the Putah Creek South Fork Preserve, (4) the UC Davis/HM Clause Innovation Center, (5) the UC Davis Russell Ranch, (6) the UC Davis Student Farm, (7) the UC Davis Foundation Plant Services research farm, (8) the Barbour Ranch in Winters, and (9), the McNamara Orchard in Winters.	Pendin

Add Geographic Location Details

Section 4f(8). Disposition Locations of Specimens and/or Parts

Section 4f(8). Disposition Locations

For each Proposed Disposition Location add the Name and address of the public, scientific of educational institution(s) to which all wildlife specimens and/or parts transferred or deposited below by clicking "Add Disposition Location".

Disposition Locations *

Edit	Name	Address	City	State	Zip Code	Details	Appro Statu
	UC Davis Department of Wildlife Fish and Conservation Biology	1071 Academic Surge, One Shields Avenue	Davis	CA	95616	Blood and fecal samples will be stored within PI Karp's lab in the department of Wildlife, Fish, and Conservation Biology, on the UC Davis campus.	Pendin

Add Disposition Location

Section 5a. Federal Permits

Section 5a. Federal Permits

If you currently hold/ are named on, have applied for, or will apply for a federal permit pertinent to your requested activities, add the Federal Permit Information "Add Federal Permit Information" Select the type of Federal Permit then enter the Permit Number.

** Attach copies of all Federal Permits in Section 6.*

Federal Permits *

Edit	Federal Permit Type	Federal Permit Number
	Bird Banding Permit – U.S. Geological Survey	24033

Add Federal Permit Information

Section 5b. State Permits

Section 5b. State Permits and Memorandum of Understanding (MOU)

If you currently hold, or are named on, or have applied for, or will apply for a state permit pertinent to your requested activities, add the State Permit Informatior "Add State Permit Information." Select the type of State Permit then enter the Permit Number.

For MOUs, provide the name of the species listed in the MOU.

** Attach copies of all State Permits and MOUs in Section 6.*

State Permits *

There are no items to show in this view.

Add State Permit Information

Section 5c. Relevant Environmental Documents

Section 5c. Relevant Environmental Documents

If you are proposing to conduct activities to meet the requirements of an environmental plan or document, or to meet other environmental compliance required b relevant environmental document information below.

If the type of Environmental Document is not listed, select "Other" then provide the Name of the other permit type and the Permit Number.

** Attach copies of all relevant environmental documents in Section 6.*

Relevant Environmental Documents *

There are no items to show in this view.

Add Relevant Environmental Document Information

Section 6. Additional Supporting Documents

Section 6. Additional Supporting Documents

Attach additional supporting documents below (e.g., copies of permits or applications of federal, state, or other related permits; study proposals in scientific forma relevant protocols or other information requested in this application).

Naming Conventions for Section 6 – Additional Supporting Documents	
Section	**Preferred naming convention**
4b. Permit Information	LastName_4b_Permit Information.docx
4c. Background and Past Findings	LastName_4b_Background and Past Findings.docx
4f(1)(c). Measures to Minimize Harm of Wildlife	LastName_4f1a_Measures Minimizing Harm.docx
5a. Federal Permits	LastName_5a Type of Permit.docx
5b. State Permits	LastName_5b Type of Permit.docx
5c. Relevant Environmental Document	LastName_5b Type of Environmental Document.docx

Permit Attachments *

Edit	Name	Type	Created	Modified
	Karp_4b_Permit Information.pdf		9/24/2021 9:20 AM	9/24/2021 3:26 PM
	Karp_4f1a_Measures Minimizing Harm.docx		9/24/2021 3:27 PM	9/24/2021 3:27 PM
	Karp_5a_FederalBandingPermit.pdf		9/24/2021 3:24 PM	9/24/2021 3:24 PM

Upload Attachment

Save and Close Cancel