

**Missouri Western State University
Institutional Animal Care and Use Committee
Animal Study Proposal Form**

Leave Blank
Proposal #: 2016 JED.01

Approval Date:

Expiration Date:

PLEASE TYPE

A. ADMINISTRATIVE DATA

Department: Biology

Principal Investigator: Dr. Julie Jedlicka

Mailing Address: 4525 Downs Drive, St. Joseph, MO 64507

Telephone: 816-271-4552

Fax: 816-271-5685

Email: jjedlicka@missouriwestern.edu

Project Title: Avian use of MWSU habitat for migratory stopover sites and breeding opportunities

Initial Submission ☐ Renewal ☒ or Modification ☐

B. ANIMAL REQUIREMENTS

For the migratory stopover study that involves mist netting birds, all Passerines and Near-Passerines that may be captured in a 30-mm mesh mist nets will be processed with one USGS Aluminum band and released at site of capture. The Breeding Bird Project will include cavity-nesting Passerine species, primarily the Eastern Bluebird (*Sialia sialis*), Tree Swallow (*Tachycineta bicolor*), and Purple Martin (*Progne subis*). Nesting boxes have been placed in different habitats across campus for wild birds to voluntarily select for nesting. In addition, two owl boxes may house owl species in the families Tytonidae or Strigidae and one Wood Duck boxes placed at 6 different campus ponds may be used by Wood Ducks (*Aix sponsa*).

C. TRANSPORTATION

Animals will not be transported.

D. STUDY OBJECTIVES

Populations of cavity-nesting nesting songbirds have been declining throughout the globe. Cavity-nesting birds (those that require a tree hole or artificial nest box to reproduce) can benefit from conservation management efforts that establish potential nesting sites, buffering such populations from local decline. Many questions, however, are unanswered in regards to best management practices to bolster cavity-nesting species. In addition, migratory bird populations have declined due to loss of habitat connectivity between breeding and overwintering sites. Monitoring changes in migratory bird movements and fat stores at migratory stopover sites is vital to ensure the conservation of such charismatic and important fauna, and the ecosystem services they provide.

E. RATIONALE FOR ANIMAL USE (Use additional sheets if necessary.)

1) Explain your rationale for animal use. *[The rationale should include reasons why non-animal models cannot be used.]*
I study wildlife in their natural habitat, in order to inform conservation efforts. Consequently, it is vital to gain baseline data on habitat use, reproduction, and success of wild populations.

2) Justify the appropriateness of the species selected. *[The species selected should be the lowest possible on the phylogenetic scale.]*

Not applicable, as I am not focusing on one target species for a lab experiment.

3) Justify the number of animals to be used. [The number of animals should be the minimum number required to obtain statistically valid results.]

For the migratory stopover study we will be banding birds and can not control the number of birds that will land in the nets. Some days we will capture zero birds, others we will capture 20 per hour. For the Breeding Bird Project, I have established 62 songbird nest boxes, 2 Purple Martin colony nest boxes, and 2 owl boxes and 6 Wood Duck boxes on campus.

F. DESCRIPTION OF EXPERIMENTAL DESIGN AND ANIMAL PROCEDURES

(Use additional sheets if necessary.)

Briefly explain the experimental design and specify all animal procedures. This description should allow the IACUC to understand the experimental course of an animal from its entry into the experiment to the endpoint of the study. Specifically address the following:

All bullet points were not applicable except for the following:

- **Animal identification methods** Standard Aluminum United States Geological Survey (USGS) bands

Migratory Stopover Study

During the spring and fall migratory seasons, 30-mm mesh mist nets will be used to capture migratory birds. After being caught, adults will be quickly removed and placed into brown paper bags and walked to the banding field station (Ralph et al. 1993). I will mark migratory birds caught in mist nets and cavity-nesting birds caught in nest boxes with Aluminum USGS bands according to my Master Banding Permit (attached below). When using mist nets, nets will be checked every 30 minutes (Ralph et al. 1993). Birds will be removed and data will be taken including: species ID, sex, age, weight, wing cord, and fat score. Over 99% of the time, birds are released unharmed from the location where they were caught within 30 minutes of removal from the net. However, in the case of an irreparable injury, the bird skin will be salvaged for the avian natural history collection at MWSU and stored at -20 deg C at MDC. During the Ornithology class I will be spending time with students on bird dissection and skin preparation to grow the avian natural history collection on campus.

Breeding Bird Project

With the help of undergraduate students, I will research whether different cavity-nesting species prefer boxes composed of cedar or a Schwegler™ mix of concrete, sawdust, and clay. One of each type of box has been erected in pairs across the MWSU campus and data loggers will measure any differences in internal temperature. Students will monitor nesting and reproductive success over the course of the breeding season. On a weekly basis, students will be checking the 62 songbird nest boxes, two Purple Martin colony nest boxes, 6 Wood Duck boxes, and two owl boxes established on campus. Once nesting activity has begun, we will record the species identification, number of eggs, date of hatching, growth rates of nestlings, and dates of fledging (Ralph et al. 1993). We will use nest box traps (Yunick 1990) to mark adult birds with Aluminum USGS bands to identify returning individuals and monitor nesting success. Students will collect temperature loggers to assess differences between box types.

G. SURGERY

Not applicable

H. PAIN OR DISTRESS CLASSIFICATION AND CONSIDERATION OF ALTERNATIVES

1. Pain or Distress Classification

Species (common name)	USDA Classification* B, C, D or E	Number of animals used each year			3 year total number of animals
		Year 1	Year 2	Year 3	
	C				
Total number of animals (should equal total from Section B):					

2. Consideration of Alternatives

Not applicable, since these procedures are classified in category C

I. ANESTHESIA, ANALGESIA, TRANQUILIZATION, OTHER AGENTS

Not applicable

J. METHOD OF EUTHANASIA OR DISPOSITION OF ANIMALS AT END OF STUDY

In the rare instance that irreparable harm is caused to a bird during mist netting or handling at nest boxes, we will use cervical dislocation without anesthesia to euthanize the individual. I have attended a 5-hour training session in manual euthanasia techniques in June 2007 with scientist Armen Shamamian based on recommendation from University of California Santa Cruz's Chancellor's Animal Research Committee. I have also taken a Collaborative Institutional Training Initiative course entitled "Working with the IACUC" in July 2011. In instances where invasive House Sparrows (*Passer domesticus*) attempt to nest in boxes, those nests will be removed and captured House Sparrows may be euthanized. I have been trained in study skin preparation from the University of California, Berkeley, Museum of Vertebrate Zoology.

K. HAZARDOUS AGENTS

Not applicable

L. BIOLOGICAL MATERIAL/ANIMAL PRODUCTS FOR USE IN ANIMALS

(e.g., cell lines, antiserum, etc.)

Not applicable

M. TRANSGENIC AND KNOCKOUT ANIMALS

Not applicable

N. EXEMPTIONS FROM ENVIRONMENTAL ENHANCEMENT FOR NONHUMAN PRIMATES OR EXERCISE FOR DOGS

Not applicable

O. FIELD STUDIES

If animals in the wild will be used, describe how they will be observed, any interactions with the animals, whether the animals will be disturbed or affected, and any special procedures anticipated. Indicate if Federal permits are required and whether they have been obtained.

For the migratory stopover study, birds will be caught in mist nets, banded, and released. Federal Master Banding Permits are required to band birds and order the USGS bands. My permit number is 23772 and a copy of the permit is attached below. For the Breeding Bird Project, birds will be monitored at nest boxes. They will be watched with binoculars. Once a week, the nest box will be opened to check contents. We will use nest box traps to catch adults at nest boxes (Yunick 1990). Nestlings will be handled for under 3 minutes each visit in order to weigh each individual with a Pesola scale and monitor growth rates to compare across nest boxes (Ralph et al 1993). All songbird nest boxes are equipped with Predator guards to protect the young from predators such as raccoons and snakes.

P. SPECIAL CONCERNS OR REQUIREMENTS OF THE STUDY

Not applicable

Q. PRINCIPAL INVESTIGATOR CERTIFICATIONS

1. I certify that I have attended the institutionally required investigator training course.
Year of Course Attendance: _____ Location: University of California, Berkeley
most recent, 2011
2. I certify that I have determined that the research proposed herein is not unnecessarily duplicative of previously reported research.
3. I certify that all individuals working on this proposal who are at risk are participating in the Institution's Occupational Health and Safety Program.
4. I certify that the individuals listed in Section A. are authorized to conduct procedures involving animals under this proposal, have attended the institutionally required investigator training course, and received training in: the biology, handling, and care of this species; aseptic surgical methods and techniques (if necessary); the concept, availability, and use of research or testing methods that limit the use of animals or minimize distress; the proper use of anesthetics, analgesics, and tranquilizers (if necessary); and procedures for reporting animal welfare concerns.
5. For all USDA Classification D and E proposals (see section H.1.): I certify that I have reviewed the pertinent scientific literature and the sources and/or databases as noted in Section H.2. and have found no valid alternative to any procedures described herein which may cause more than momentary pain or distress, whether it is relieved or not.
1. I certify that I will obtain approval from the IACUC before initiating any significant changes in this study.
2. I certify that I will notify the IACUC regarding any unexpected study results that impact the animals. Any unanticipated pain or distress, morbidity or mortality will be reported to the attending veterinarian and the IACUC.
3. I certify that I am familiar with and will comply with all pertinent institutional, state, and federal rules and policies.

References

Ralph CJ, Geupel GR, Pyle P, et al. (1993) Handbook of field methods for monitoring landbirds.

Yunick R Some Banding Suggestions at Nest Boxes. North Am Bird Bander 15:146–7.

Principal Investigator:

Name: Julie Jedlicka

Signature: Julie Jedlicka

Date: 2/16/16

R. CONCURRENCES

PROPOSAL NUMBER _____ (leave blank)

S. FINAL APPROVAL:

Certification of review and approval by the Institutional Animal Care and Use Committee:

Sign and Date after each name.

Chair: **Kristen Walton, Ph.D.**

Veterinarian: **J. Randall Schildknecht, DVM**

Scientist: **Mark S. Mills, Ph.D.**

Scientist: **Cary D. Chevalier, Ph.D.**

Non-scientist: **Jeannie Daffron, Ph.D.**

Non-affiliated, Non-scientists: **T. J. Peacher**

Safety Officer: Craig Darrough

**Missouri Western State University
Institutional Animal Care and Use Committee
Animal Study Proposal Form**

PLEASE TYPE

A. ADMINISTRATIVE DATA

Department: Biology

Principal Investigator: Dr. Julie Jedlicka

Mailing Address: 4525 Downs Drive, St. Joseph, MO 64507

Telephone: 816-271-4552

Fax: 816-271-5685

Email: jjedlicka@missouriwestern.edu

Project Title: Birds, beans, and bugs: Modeling a warming climate's effect on the natural enemies hypothesis

Initial Submission ☒ Renewal ☐ or Modification ☐

D. STUDY OBJECTIVES

My research project involves a 5-week winter field program investigating effects of a warming climate on pests and their natural enemies in Kenyan coffee farms. This project offers unique opportunities to use field experiments and spatial modeling to unravel effects of temperature-driven range shifts, predator community composition, and mediating effects of local vegetation on herbivores and their natural enemies. Collaboration between MWSU and Humboldt State University faculty and students will enable the team to investigate bird and coffee pest distribution, identify confirmed pest predators using molecular analyses of diet, and model climate and habitat mediated shifts in species' ranges.

E. RATIONALE FOR ANIMAL USE (Use additional sheets if necessary.)

Explain your rationale for animal use. *[The rationale should include reasons why non-animal models cannot be used.]*
This research project funded by the National Science Foundation aims to understand the diets of wild birds in their natural habitat, consequently non-animal models would not be appropriate. By collecting only fecal samples from the birds, the methods are a very non-invasive way to obtain dietary data. All birds will be released within an hour of capture.

F. DESCRIPTION OF EXPERIMENTAL DESIGN AND ANIMAL PROCEDURES

(Use additional sheets if necessary.)

Four to six Kenyan coffee farms will be used as study sites. We will conduct mist net surveys to confirm avian species presence/absence and to obtain fecal samples for molecular diet analyses. MWSU and HSU's wildlife department maintain bird banding stations that provide mist net training opportunities for undergraduate students, and selected students will receive mist net training in the fall semester prior to departure. Fecal samples of insectivorous birds will be obtained by temporarily holding birds removed from mist nets in brown paper bags for 10 mins or until they defecate (Jedlicka et al. 2017). Dr. Jedlicka has extensive experience with these procedures, analyses, and have trained numerous undergraduate students to perform them in the past. She also has an active USGS banding permit (Permit Number 23772), allowing her to band and process birds in the United States.

Leave Blank

Proposal #:

Approval Date:

Expiration Date:

G. SURGERY

Not applicable

O. PRINCIPAL INVESTIGATOR CERTIFICATIONS

1. I certify that I have attended the institutionally required investigator training course.
Year of Course Attendance: _____ Location: University of California, Berkeley
most recent, 2011
2. I certify that I have determined that the research proposed herein is not unnecessarily duplicative of previously reported research.
3. I certify that all individuals working on this proposal who are at risk are participating in the Institution's Occupational Health and Safety Program.
4. I certify that the individuals listed in Section A. are authorized to conduct procedures involving animals under this proposal, have attended the institutionally required investigator training course, and received training in: the biology, handling, and care of this species; aseptic surgical methods and techniques (if necessary); the concept, availability, and use of research or testing methods that limit the use of animals or minimize distress; the proper use of anesthetics, analgesics, and tranquilizers (if necessary); and procedures for reporting animal welfare concerns.
5. For all USDA Classification D and E proposals (see section H.1.): I certify that I have reviewed the pertinent scientific literature and the sources and/or databases as noted in Section H.2. and have found no valid alternative to any procedures described herein which may cause more than momentary pain or distress, whether it is relieved or not.
 1. I certify that I will obtain approval from the IACUC before initiating any significant changes in this study.
 2. I certify that I will notify the IACUC regarding any unexpected study results that impact the animals. Any unanticipated pain or distress, morbidity or mortality will be reported to the attending veterinarian and the IACUC.
 3. I certify that I am familiar with and will comply with all pertinent institutional, state, and federal rules and policies.

References

Jedlicka, JA, Vo, AE, and Almeida, RPP. 2017. Molecular scatology and high-throughput sequencing reveal predominately herbivorous insects in the diets of adult and nestling Western Bluebirds (*Sialia mexicana*) in California vineyards. The Auk: Ornithological Advances. 134(1):116-127.

Principal Investigator:

Name: Julie Jedlicka

Signature: Julie Jedlicka

Date: 10/8/18

R. CONCURRENCES

PROPOSAL NUMBER _____ (leave blank)

S. FINAL APPROVAL:

Certification of review and approval by the Institutional Animal Care and Use Committee:

Sign and Date after each name.

Chair: **Kristen Walton, Ph.D.**

Veterinarian: **J. Randall Schildknecht, DVM**

Scientist: **Mark S. Mills, Ph.D.**

Scientist: **Cary D. Chevalier, Ph.D.**

Non-scientist: **Jeannie Daffron, Ph.D.**

Non-affiliated, Non-scientists: **T. J. Peacher**

Safety Officer: Craig Darrough



United States Department of Agriculture
Animal and Plant Health Inspection Service

AUNCK

2016082569570167 Insp_id

Inspection Report

Missouri Western State University
4525 Downs Dr
Saint Joseph, MO 64507

Customer ID: 1591

Certificate: 43-R-0105

Site: 001

MISSOURI WESTERN STATE UNIVERSITY

Type: FOCUSED INSPECTION

Date: 08-AUG-2019

No non-compliant items identified during this inspection.

This inspection and exit interview were conducted with facility representative.

Prepared By:

UNCK AUTUMN, D V M USDA, APHIS, Animal Care

Date:

12-AUG-2019

Title: VETERINARY MEDICAL OFFICER 6118

Received By:

FACILITY REPRESENTATIVE

Obtained by Rise for Animals. Uploaded 07/07/2020

Date:



United States Department of Agriculture
Animal and Plant Health Inspection Service

Customer: 1591
Inspection Date: 08-AUG-19

Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
1591	43-R-0105	001	MISSOURI WESTERN STATE UNIVERSITY	08-AUG-19

No Animals were Inspected.

Count	Scientific Name	Common Name
000000	NONE	NONE
000000	Total	