

Michaela A. Kratofil

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Education

BS in Fisheries & Wildlife

Michigan State University

HONORS COLLEGE, LYMAN BRIGGS COLLEGE

Aug. 2015 - Dec. 2019

- Minor in Marine Ecosystem Management
- Concentration in Water Sciences
- Cumulative GPA: 3.75

Research Experience

Cascadia Research Collective

Olympia, WA

RESEARCH ASSISTANT

Jan. 2020 - Present

- Conduct analyses contributing to a long-term study on whale and dolphin population structure and dynamics in the Hawaiian Islands
- Process and analyze satellite telemetry data, including geoprocessing positional data with static and dynamic environmental variables and fitting animal movement models
- Lead and participate in research projects in collaboration with other lab members and agencies
- Member of MARINE (Minority and Race Inclusion in Natural sciences and Education) sub-committee
- Current project(s): Evaluating pantropical spotted dolphin spatial use in Hawaiian waters in relation to stock boundaries, environmental features; Characterizing Biologically Important Areas (BIA) for whale and dolphin stocks in the Hawaiian Islands and US West Coast; assess endangered false killer whale movements in relation to fish aggregating devices (FADs) in Hawaii

Cascadia Research Collective

Olympia, WA

INTERN

May 2018 - Dec. 2019

- Assisted with long-term photo-identification catalogs for various odontocete species in Hawai'i
- Assisted with marine mammal necropsies and stranding events throughout Washington State
- Collected behavioral and photo-identification data of cetaceans on field-based surveys in Washington State
- Carried out independent research projects, such as examining drivers of variance in persistent organic pollutant concentrations measured in Hawaiian false killer whales and estimating abundance of Hawaiian pygmy killer whales
- Estimated age of biopsied false killer whales based on life history information from long-term photo-ID catalog to compare to epigenetic aging estimates
- Analyzed spatial and temporal trends of nearshore commercial fishing efforts around the main Hawaiian Islands in relation to space use of endangered false killer whale stock, used to develop an index of overlap, highlighting regions where interactions are likely to occur
- Processed satellite tag data
- Participated in a field project based in Kona, HI, to collect photo-ID, breath samples and deploy satellite tags

Fish Ecotoxicology and Physiology Laboratory (Murphy Lab)

Michigan State University

UNDERGRADUATE RESEARCH ASSISTANT

Aug. 2018 - Dec. 2019

- Assessed the effects of sub-lethal sea lamprey parasitism on long-term reproduction rates in siscowet and lean lake trout
- Determined plasma sex steroid (testosterone, estradiol) concentrations in parasitized and non-parasitized siscowet and lean lake trout through the use of radioimmunoassays
- Investigated the application of a non-invasive microwave fat meter for determining muscle lipid levels in two morphotypes of lake trout
- Developed a calibration that relates fat meter readings to absolute muscle lipid concentrations

Amber Peters Laboratory

Michigan State University

UNDERGRADUATE RESEARCH ASSISTANT

Jan. 2018 - May 2018

- Assisted with study examining changes in bonefish spatial behavior associated with spawning aggregations in Cape Eleuthra, Bahamas
- Used GPS and location data of bonefish individuals and aggregations to investigate relationships between migratory routes and environmental parameters
- Gained experience organizing and analyzing data using Microsoft Excel, Access, and R programs
- Gained experience writing grant proposals for marine conservation projects

Publications

Bringing the right fishermen to the table: indices of overlap between endangered false killer whales and nearshore fisheries in Hawai'i

RW Baird, DB Anderson, **Kratofil, MA**, DL Webster
Biological Conservation, 2021. DOI: 10.1016/j.biocon.2021.108975

Life history and social structure as drivers of persistent organic pollutants and stable isotopes in Hawaiian false killer whales
Kratofil, MA, GM Ylitalo, SD Mahaffy, KL West, RW Baird
Science of the Total Environment, 2020. DOI: 10.1016/j.scitotenv.2020.138880

Movements of satellite-tagged pantropical spotted dolphins in relation to stock boundaries in Hawaiian waters
Kratofil, MA, RW Baird, DL Webster
Aquatic Mammals, IN PREP.

Application of a non-invasive fat meter for determining muscle lipid levels in two morphotypes of lake trout
TJ Firkus, **Kratofil, MA**, NK Dean, CA Murphy
Journal of Great Lakes Research, IN PREP

Technical Reports

Cooperative conservation and long-term management of false killer whales in Hawai'i: Geospatial analyses of fisheries and satellite tag data to understand fisheries interactions
RW Baird, DB Anderson, **Kratofil, MA**, DL Webster, SD Mahaffy
Report to the state of Hawaii Board of Natural Resources under Contract No. 67703, 30 SEPTEMBER 2019

Odontocete studies on the Pacific Missile Range Facility in February 2020: Satellite-tagging, photo-identification, and passive acoustic monitoring
RW Baird, CJ Cornforth, SM Jarvis, EE Henderson, SL Watwood, SD Mahaffy, BD Guenther, JK Lerma, AE Harnish, **Kratofil, MA**
Prepared for Commander, Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, EV2 Environmental Planning, Pearl Harbor, HI, under Contract No. N62470-15-D-8006 Task Order N6247015D8006 issued to HDR Inc., Honolulu, HI., DECEMBER 2020

Received level analysis of satellite tagged odontocetes at the Pacific Missile Range Facility
EE Henderson, C Martin, RW Baird, **Kratofil, MA**, S Martin, B Southall
Prepared for Commander, Pacific Fleet, IN REVIEW.

Popular Articles

The dose is in the bite: Silent effects of parasitic sea lamprey
Michaela A Kratofil
Great Lakes Echo <http://greatlakesecho.org/2019/10/07/dose-in-the-bite-sea-lamprey/>, 07 OCTOBER 2019

Fish guts show changes on the Lake Huron menu
Michaela A Kratofil
Great Lakes Echo <http://greatlakesecho.org/2019/10/24/fish-guts-lake-huron/>, 24 OCTOBER 2019

Presentations

Society of Toxicology and Chemistry, North America 40th Annual Meeting *Toronto, ON, CA*
MICHAELA A. KRATOFIL, GINA M. YLITALO, ROBIN W. BAIRD, SABRE D. MAHAFFY *Nov. 2019*

Breaching the line: Persistent organic pollutant concentrations exceeding thresholds in endangered Hawaiian false killer whales.

The Joint Meeting of the American Fisheries Society and the Wildlife Society *Reno, NV*
MICHAELA A. KRATOFIL, GINA M. YLITALO, ROBIN W. BAIRD, SABRE D. MAHAFFY *Sep./Oct. 2019*

Breaching the line: Persistent organic pollutant concentrations exceeding thresholds in endangered Hawaiian false killer whales.

13th Annual Lyman Briggs Research Symposium *East Lansing, MI*
MICHAELA A. KRATOFIL, GINA M. YLITALO, ROBIN W. BAIRD, SABRE D. MAHAFFY *Apr. 2019*

Breaching the line: Persistent organic pollutant concentrations exceeding thresholds in endangered Hawaiian false killer whales.

21st Annual University Undergraduate Research and Arts Forum *East Lansing, MI*
MICHAELA A. KRATOFIL, TYLER J. FIRKUS, CHERYL A. MURPHY *Apr. 2019*

Effects of sublethal sea lamprey parasitism on long-term milt concentration and testosterone production in two lake trout morphotypes

Awards & Honors

2021	Graduate Research Fellowship , National Science Foundation	\$138,000
2019	Student Travel Grant , Ohio Valley Chapter SETAC	\$50
2019	Student Travel Award , Society of Environmental Toxicology and Chemistry	\$700
2019	Student Travel Award , The Wildlife Society Biometrics Working Group	\$700
2019	Undergraduate Scholarship Award , Anglers of the Au Sable	\$1,000
2018	Undergraduate Research Grant , MSU College of Agriculture and Natural Resources	\$2,000
2018	Unpaid Internship Scholarship , MSU Federal Credit Union	\$1,000
2018	Megan E. Cook Memorial Scholarship , Michigan Lakes & Streams Association	\$1,500
2018	Denny Grinold Scholarship Award , Michigan Charter Boat Association	\$1,500
2016	Best in Class , 10th Annual Lyman Briggs Research Symposium	
2015 - 19	Dean's List , Michigan State University	

Skills

LABORATORY AND FIELD

Aquatic Sampling	Macrophyte, algae, zooplankton collection & identification, dissolved oxygen/temperature, etc.
Fish Sampling	Flye netting, seining, electrofishing, identification
Microbiology Assays	PCR, radioimmunoassays, aseptic technique
Telemetry	Set up and use of PIT systems, surgical tagging procedures on fish, use of handheld VHF, PTT telemetry
Other	Use of DSLR cameras, data collection, GPS and compasses, small mammal trapping

INFORMATICS

Programming & Software	R, LaTeX, STELLA, QGIS, MARK, Microsoft Office
Statistics	Hierarchical modeling, spatial statistics, multivariate analyses
Other	Adobe software, Movebank, ACDSee, DigiKam, Wildlife Computers DAP

Work Experience

Applied Forestry and Wildlife Ecology Laboratory

Michigan State University

RESEARCH TECHNICIAN

Aug. 2018 - Dec. 2019

- Assisted with study examining deer interactions with northern hardwood regeneration techniques in northern Michigan
- Analyzed photographs obtained from camera traps and tagged species, age class, sex, and behavior

Weiming Li Laboratory

Michigan State University

RESEARCH TECHNICIAN

May 2017 - Aug. 2017

- Assisted with laboratory and field bioassays evaluating sea lamprey migratory and sex pheromones at USGS Hammond Bay Biological Station, Millersburg, MI
- Collected fish behavioral observation data in multiple settings
- Gained experience in setup and operation of passive integrative transponder (PIT) systems and surgical PIT tagging procedures
- Dissected sea lamprey tissues and collected water samples for bile acid/pheromone analysis

MSU Veterinary Diagnostic Laboratory

Michigan State University

STUDENT RESEARCH ASSISTANT

Jan. 2016 - Jan. 2018

- Opened, identified, and checked-in animal specimens received in the registration/order entry laboratory
- Handled biohazardous waste and materials to ensure health safety protocols
- Sorted and filed medical records of specimens received and tested

Volunteer Experience

Fish Ecotoxicology and Physiology Laboratory

Michigan State University

FEB. 2018 - MAY 2018

- Assisted with project studying the sublethal effects of sea lamprey parasitism on long term reproduction, growth, and immunocompetence of siscowet and lean lake trout
- Conducted muscle lipid extractions and antibody dilution radioimmunoassays

Weiming Li Laboratory

Michigan State University

OCT. 2017, JAN. 2018

- Assisted with bile acid extractions from sea lamprey liver and gill tissues

AUG. 2016 - DEC. 2016

- Investigated the effects of the drug *Omeprazole* on mineral metabolism in horses in relation to impacts on bone density and susceptibility to performance-related injuries
- Collected fecal, urine, and blood samples to be analyzed for mineral content
- Weighed out hay specified per horse per feeding

Service

President

East Lansing, MI

MICHIGAN STATE FISHERIES AND WILDLIFE CLUB, STUDENT CHAPTER OF THE WILDLIFE SOCIETY AND AMERICAN FISHERIES SOCIETY

Jan.2019 - Jan. 2020

Fisheries Chair

East Lansing, MI

MICHIGAN STATE FISHERIES AND WILDLIFE CLUB, STUDENT CHAPTER OF THE WILDLIFE SOCIETY AND AMERICAN FISHERIES SOCIETY

Jan. 2018 - Jan. 2019

Organizations

Present **International Bio-logging Society,**

Present **American Cetacean Society,** Puget Sound Chapter

Present **Society of Marine Mammalogy,**

Present **The Wildlife Society,** National, Northwest Section, Washington Chapter

Present **Biometrics Working Group,** The Wildlife Society

Present **Spatial Ecology & Telemetry Working Group,** The Wildlife Society

Present **Human Dimensions Working Group,** The Wildlife Society

2017-2019 **American Fisheries Society,** National, Michigan Chapter

2018-2019 **Society of Environmental Toxicology and Chemistry,** North American, Ohio Valley Chapters

2019 **Ducks Unlimited,** Michigan State University Chapter

References

Robin W. Baird, Ph.D.

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Scott Winterstein, Ph.D.

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