

KELLY KAPSAR

Michigan State University – Department of Fisheries & Wildlife



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EDUCATION

- 2022 **Ph.D. in Fisheries & Wildlife**
Center for Systems Integration & Sustainability, Michigan State University
University Distinguished Fellow
Advisor: Dr. Jianguo (Jack) Liu
Thesis: The metacoupled Arctic and north Pacific: Analyzing the spatiotemporal patterns and impacts of marine vessel traffic in coupled human and natural systems
- 2014 **B.A. Biology, Certificate of Advanced Studies in Spanish**
Carleton College, Northfield, MN
Distinction in major, Magna Cum Laude
Thesis: Who's afraid of the big bad wolf? Trait-mediated interactions among sympatric carnivores and their effect on behaviorally-mediated trophic cascades.

RESEARCH INTERESTS

- Spatial ecology
- Movement ecology
- Human-wildlife conflict
- Big data
- Remote sensing
- Spatial data analysis
- Open-source software
- Community engagement
- Science communication
- Telecoupling
- Social-ecological systems
- Reproducible research

PEER-REVIEWED JOURNAL ARTICLES

- Kapsar, K.**, Rehberg, M., Montgomery, R., and Liu, J. Marine vessel traffic affects the movements of endangered sea lions [Manuscript in prep].
- Kapsar, K.**, Gunn, G., Brigham, L., and Liu, J. (2023). Measuring recent increases in vessel traffic in the ice-covered waters of the Pacific Arctic. *Climatic Change*, 176 (7), 94. <https://doi.org/10.1007/s10584-023-03568-3>
- Waloven, S., **Kapsar, K.**, Schwoerer, T., Berman, M., Schmidt, J., Vina, A., and Liu, J. (2023). Global gateways as telecoupled human and natural systems: The emerging case of the Bering Strait. *Ambio*. <https://doi.org/10.1007/s13280-023-01835-2>.

- Kapsar, K.**, Sullender, B., Liu, J., and Poe, A. (2022). North Pacific and Arctic marine traffic dataset (2015-2020). *Data in Brief*, 44, 108531. <https://doi.org/10.1016/j.dib.2022.108531>.
- Kapsar, K.**, Frans, V., Brigham, L., and Liu, J. (2022). The metacoupled Arctic: Human-nature interactions across local to global scales as drivers of sustainability. *Ambio* 51(10), 2061-2078. <https://doi.org/10.1007/s13280-022-01729-9>.
- Sullender, B., **Kapsar, K.**, Poe, A., and Robards, M. (2021). Spatial management measures alter vessel behavior in the Aleutian Archipelago. *Frontiers in Marine Science*, 7, 579905. <https://doi.org/10.3389/fmars.2020.579905>.
- Chung, M.G., **Kapsar, K.**, Frank, K., and Liu, J. (2020). The spatial and temporal dynamics of global meat trade networks. *Scientific Reports*, 10(1), 16657. <https://doi.org/10.1038/s41598-020-73591-2>.
- Kapsar, K.**, Hovis, C., Bicudo da Silva, R., Buchholtz, E., Carlson, A., Dou, Y., ... Liu, J. (2019). Telecoupling Research: The First Five Years. *Sustainability*, 11(4), 1033. <https://doi.org/10.3390/su11041033>
- Herzberger, A., Chung, M. G., **Kapsar, K.**, Frank, K. A., and Liu, J. (2019). Telecoupled Food Trade Affects Pericoupled Trade and Intracoupled Production. *Sustainability* 11(10), 2908. <https://doi:10.3390/su11102908>.
- Xu, Z., Li, Y., Herzberger, A., Chen, X., Gong, M., **Kapsar, K.**, ... & Liu, J. (2019). Interactive national virtual water-energy nexus networks. *Science of The Total Environment*, 673: 128-135. <https://doi.org/10.1016/j.scitotenv.2019.03.298>.
- Du, Y., Wan, Q., Liu, H., **Kapsar, K.**, Peng, J. (2019). How does urbanization influence PM2.5 concentrations? Perspective of spillover effect of multi-dimensional urbanization impact. *Journal of Cleaner Production*, 220: 974-983. <https://doi.org/10.1016/j.jclepro.2019.02.222>

PEER-REVIEWED BOOK CHAPTERS & REPORTS

- Sullender, B., **Kapsar, K.**, and Kuletz, K. (2022). Appendix 6: Seabird-vessel traffic risk analysis for Alaska's marine regions. In *Marine Bird Distribution and Abundance in Offshore Waters*. BOEM 2022-067. <https://www.boem.gov/regions/alaska-ocs-region/scientific-and-technical-publications-2022>
- Berkman, P., Fiske, G., Loenzini, D., Young, O., Pletnikoff, K., Grebmeier, J., Fernandez, L., Devinie, L., Causey, D., **Kapsar, K.**, and Jørgensen, L. (2022). Satellite Record of Pan-Arctic Maritime Ship Traffic. In *Arctic Report Card 2022*, M. L. Druckenmiller, R. L. Thoman, and T. A. Moon, Eds. <https://doi.org/10.25923/mhrv-gr76>.

Liu, J., Herzberger, A, **Kapsar, K.**, Carlson, A., and Connor, T. (2019). "What is telecoupling?". In J. Østergaard Nielsen and C. Friis (Eds.), *Telecoupling: Exploring Land Use Change in a Globalized World* (pp. 19-48). London: Palgrave MacMillan. <https://doi.org/10.1007/978-3-030-11105-2>.

Cerezo, A., & **Kapsar, K. E.** (2018). Zoo Conservation Disembarks: Stepping off the Ark and into Global Sustainable Development. In B. A. Minter, J. Maienschein, & J. P. Collins (Eds.), *The Ark and Beyond: The Evolution of Zoo & Aquarium Conservation* (pp. 344–359). Chicago: University of Chicago Press. <https://doi.org/10.1007/978-3-030-11105-2>.

DATA SETS

Kapsar, K., Sullender, B. & Poe, A. (2022). North Pacific and Arctic Marine Vessel Traffic Dataset (2015-2020); 25 Kilometer Resolution. Arctic Data Center. doi:10.18739/A2J678Z16.

GRANTS, FELLOWSHIPS, & AWARDS (Total: \$1,754,550)

2022	MSU Institute for Biodiversity, Ecology, Evolution, and Macrosystems (IBEEM) Postdoctoral Fellowship (\$75,000)
2021	College of Agriculture and Natural Resources Dissertation Completion Fellowship (\$10,000)
2021	NSF Arctic System Science. <i>Collaborative Research: Complex Effects of Telecoupled Activities in the Changing Environment of the Arctic</i> (Award #2033507) (\$1,541,800)*
2021	College of Agriculture and Natural Resources Summer Fellowship (\$7,000)
2021	College of Agriculture and Natural Resources Alumni Association Scholarship (\$3,000)
2021	Ambrose Patullo Graduate Fellowship in Literary Works (\$2,500)
2020	American Geophysical Union (AGU) Virtual Student Travel Grant (\$1,000)
2019	Gilbert W. Mouser Scholarship in Conservation & Environmental Education (\$2,500)
2018	William W. and Evelyn M. Taylor Endowed Fellowship for International Engagement in Coupled Human and Natural Systems (\$28,000)
2018	MSU Graduate School Travel Funding (\$1,050)
2018	MSU Fisheries and Wildlife Graduate Student Organization Travel Grant (\$200)
2017	Vera M. Wallach Graduate Fellowship (\$2,500)
2016	University Distinguished Fellowship, Michigan State University (\$80,000)

*Principal contributor to Project Description and Data Management Plan.

CONFERENCES & INVITED PRESENTATIONS

- 2023 **Alaska Marine Science Symposium**
Anchorage, Alaska
Presentation: Seabird-vessel traffic risk analysis for Alaska's oceans
- 2022 **American Geophysical Union**
Chicago, Illinois
Presentation: The Metacoupled Arctic: Human–Nature Interactions Across Local to Global Scales as Drivers of Sustainability
- 2022 **Northern Latitudes Partnerships-USFWS Monthly Outreach Meeting**
Virtual
Presentation: North Pacific and Arctic Marine Vessel Traffic Data Set (2015-2020)
- 2022 **Alaska Marine Policy Forum**
Virtual
Presentation: Quantifying the spatio-temporal dynamics of vessel traffic in a rapidly changing maritime bottleneck
- 2022 **USFWS Oil Spill Team Meeting**
Virtual
Presentation: A new, publicly available marine vessel traffic data set for the north Pacific and southern Arctic Oceans, 2015-2020
- 2022 **Northern Latitudes Partnership**
Virtual
Presentation: A new, publicly available marine vessel traffic data set for the north Pacific and southern Arctic Oceans, 2015-2020
- 2022 **Alaska Marine Science Symposium**
Virtual
Presentation: A new, publicly available marine vessel traffic data set for the north Pacific and southern Arctic Oceans, 2015-2020
- 2021 **Arctic Vessel Traffic Working Group**
Virtual
Presentation: Building a public vessel traffic data set (Co-presented)
- 2021 **Graduate Women in Science Research Seminar**
Virtual
Presentation: Fish and ships: Evaluating the influence of commercial fishing on Steller sea lion habitat selection
- 2020 **5th Distributed Biological Observatory (DBO) Data Meeting**
Seattle, Washington
Presentation: Linking coupled human and natural systems approaches with the Distributed Biological Observatory

- 2018 **US Chapter of the International Association of Landscape Ecology**
Chicago, Illinois
Telecoupling symposium organizer
Presentation: Quantifying the spatio-temporal distribution of marine vessel traffic in the Bering Strait
- 2017 **CN Forum: Putting the Arctic in Plain Sight**
Lansing, Michigan
Poster: The Telecoupled Arctic: Marine Vessel Traffic in the Bering Strait Region
- 2017 **Smithsonian National Museum of the American Indian**
Washington, D.C.
Presentation: Zebras in the Arctic: Branching out from the McDonnell Polar Bear Point Project (Recording:
https://www.youtube.com/watch?v=YrOVJQPDNEQ&ab_channel=SmithsonianNMAI)

INVITED PANELS

- 2018 **Women in Nature Network**
Lake Mainstay, Guyana
Invited Panelist
- 2017 **MSU Summer Intensive on Community Engagement**
Lansing, Michigan
Invited Panelist

TEACHING & MENTORSHIP EXPERIENCE

- 2018 – 2020 **Undergraduate Mentor**
Center for Systems Integration & Sustainability, Michigan State University, East Lansing, MI
- 2019 **Instructor**
Organismal and Population Biology Laboratory (BS172L)
Biological Sciences Department, Michigan State University, East Lansing, MI
- 2019 **Instructor**
Applications in Biological Science Laboratory (ISB208L)
Center for Integrative Studies in General Science, Michigan State University, East Lansing, MI
- 2013 - 2014 **Teaching Assistant**

Population Ecology (BIOL352); Climate Change Geology (GEOL115)
Carleton College, Northfield, MN

RESEARCH & FIELD EXPERIENCES

2022 – pres. **Postdoctoral Research Associate**

Center for Systems Integration & Sustainability, Michigan State University,
East Lansing, MI

Location: Remote

Supervisor: Dr. Jianguo (Jack) Liu

2015 – pres. **Research Associate, Community Engagement in Conservation**

Saint Louis Zoo Arctic Socio-Environmental WildCare Program, St. Louis,
MO

Location: Nome, Gambell, Savoonga, Little Diomedede, AK (4 trips; ~5
weeks total)

Supervisor: Lisa Lidgus

2019 **Research Assistant**

Healy Research Cruise 1901

Location: Bering & Chukchi Seas (3 weeks)

Supervisor: Dr. Jackie Grebmeier

2017 - 2018 **Research Assistant**

Center for Systems Integration & Sustainability, Michigan State University,
East Lansing, MI

Location: East Lansing, MI

Supervisor: Dr. Jianguo (Jack) Liu

2016 & 2017 **Dissertation Development Travel**

Center for Systems Integration & Sustainability, Michigan State University

Location: Anchorage, Fairbanks, and Utqiagvik (Barrow), AK (2 trips; ~4
weeks total)

Supervisor: Dr. Jianguo (Jack) Liu

JOURNAL AFFILIATIONS

Reviewer: Ambio

Reviewer: Ecology & Society

Reviewer: Journal of Cleaner Production

PROFESSIONAL APPOINTMENTS

2018 - 2019 **Social Media Associate**

Engagement Scholarship Consortium, East Lansing, MI

2014 - 2016 **Outreach Instructor**
Saint Louis Zoo Education Department, Saint Louis, MO

2014 **Conservation Education Research Extern**
Saint Louis Zoo Education Department, Saint Louis, MO

PROFESSIONAL PUBLICATIONS

Kapsar, K. (2021). Breaking the Ice: Connecting data and reality on an Arctic research cruise. Spotlight Magazine. <https://spotlight-msu.medium.com/breaking-the-ice-connecting-data-and-reality-on-an-arctic-research-cruise-a8f8028ff7f4>

Kapsar, K. (2018). Zoos should leave the ark metaphor behind. Blog post for Nature Ecology and Evolution blog. <https://natureecoevocommunity.nature.com/users/178448-kelly-kapsar/posts/39133-zoos-should-embrace-the-un-sustainable-development-goals-to-achieve-their-wildlife-conservation-missions>

Kapsar, K., McCord, P., and Tonini, F. (2018). The Bering Sea International Commodity Transport. Case study for Telecoupling GeoApp. <https://telecoupling.msu.edu/geo-app/commodity-transport/>

DEPARTMENTAL & PROFESSIONAL SERVICE

2022-present **Fisheries & Wildlife Department Diversity, Equity, & Inclusion Committee**, Michigan State University, East Lansing, MI

- Postdoc Representative

2018 –2021 **Women in Nature Network – MSU Chapter**, East Lansing, MI

- Founding Member
- Social Media Associate (2019-2020)
- Secretary (2018-2019)

2020 **Outreach & Engagement Reopening Subcommittee**, Michigan State University, East Lansing, MI

- Graduate Student Representative

2017 - 2020 **Fisheries & Wildlife Department Graduate Student Organization**, Michigan State University, East Lansing, MI

- Symposium Co-Chair (2019-2020)
- Symposium Committee (2017-2019)
- Spotlight Magazine Editor (2017-2020)
- Curriculum Committee (2017-2018)
- Outreach Committee (2017-2018)

2018 – 2020 **Wildside Wildlife Rehabilitation Center**, Eaton Rapids, MI

- Volunteer Wildlife Rehabilitator
- Environmental Educator

2019 - 2020 **Association of Polar Early Career Scientists (APECS)**

- Council Member

PROFESSIONAL SKILLS & MEMBERSHIPS

Software	R, Rspatial, Python, Git, GitHub, ArcGIS, Erdas Imagine, Stata, Microsoft Office Suite (incl. Excel, Access, PowerPoint, Word)
Languages	English (fluent), Spanish (proficient)
Visual media	Basic videography and graphics generation skills (R, PowerDirector, Adobe Photoshop)
Memberships	MSU Fisheries and Wildlife Graduate Student Organization, Graduate Women in Science, Women in Nature Network, Association of Polar Early Career Researchers
Certifications	NSF Arctic Data Center: Scalable and Computationally Reproducible Approaches to Arctic Research (2023) NSF Arctic Data Center: Reproducible Practices for Arctic Research Using R (2019) SCUBA (PADI Open Water) Ready for Media Training (2016)