

Anya Nova Metcalfe

Ecologist | Science Communicator

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Flagstaff, AZ



Education:

Northern Arizona University

M.S. Biological Sciences

Flagstaff, AZ

2018

Prescott College

B.A. Environmental science with emphasis in aquatic resources

Minor in Adventure Education

Prescott, AZ

2012

Work Experience

U.S. Geological Survey

Flagstaff Science Campus

Social Media Strategist/Public Affairs GS 11 Series 0408

2024 – July 2026

Flagstaff, AZ

- Content creator for USGS X account (@USGSAZ)

- Organized multi-day workshop on Big Data/AI applications at Lowell Observatory (2025)

- Coordinating weekly 'Food Truck Tuesdays' to support on-campus collaboration & community building

- Organizing and attending various outreach opportunities in Arizona & Tribal lands

- Created and hosted an art meets science expo to celebrate USGS research in a year of low morale

IT – Cloud Hosting Services – Communications Specialist GS 11 Series 0408 8 hours/week

- Writing and distributing announcements and monthly newsletters about CHS service updates

- Translating complex IT language into actionable news bulletins

University of Montana

Department of Forest Management

Research Analyst (post-fire revegetation)

Jan 2025 – March 2026

Missoula, MT (remote)

- Collaborating with UMT, NAU, USFS, & contracted nurseries to accumulate forestry data

- Consolidating various datasets to create a multi-decadal record of seed collection and planting locations

- Building a spatial model (GIS & R) to understand survival rates of tree plantings post forest-fires

U.S. Geological Survey

Grand Canyon Monitoring and Research Center & Southwest Biological Science Center

Ecologist GS 11 Series 0408

2012 - 2026

Flagstaff, AZ

- Analyzing, compiling, and managing various multi-scale ecological datasets

- Coordinating public involvement in community science data gathering

- Employing complex statistical techniques such as Bayesian regression models, mixed effects models, and spatial statistics to analyze and communicate complex ecological patterns

- Established a research and monitoring program on bats in Grand Canyon

- Presenting research to and working alongside resource managers

- Publishing research papers in peer-reviewed journals
- Conducted foodweb research in the Colorado River watershed that spanned 7 states
- Using expert knowledge of Colorado River Basin aquatic insect fauna to identify taxa to species
- Maintaining a safe lab environment, keeping inventory of supplies, and ensuring accurate data
- Spent more than 400 days in remote sections of Grand Canyon and Glen Canyon collecting aquatic and terrestrial invertebrate specimens using a myriad of traps and methods
- Curating and managing a small in-house entomological reference collection
- Led workshops on Trichoptera identification
- Web and microsite development using Drupal, various social media content development

Department of Commerce

October – December 2024

National Telecommunications and Information Administration

Digital Grant Application Reviewer – Quality Assurance Federal Reviewer

- Providing quality assurance of grant reviews in a competitive grant program
- Reviewing projects and budget requests generally ranging between \$5,000,000 and \$12,000,000

U.S. Geological Survey – Water Mission Area

July - October 2020

Social media strategist (20 hours/week)

Remote

- Managed Instagram account (@USGS_streamgages) for USGS Water Mission Area
- Developed daily social media content for national distribution

Museum of Northern Arizona

2012-2013

Curatorial Assistant

Flagstaff, AZ

- Handling, sorting, labeling, and identifying entomological specimens for museum collections
- Organizing and maintaining a collection of more than 200,000 specimens
- Collected over 2,000 invertebrate specimens in the field
- Overseeing and organizing museum volunteers

Summer Among the Peaks Discovery Camp

Bug Camp Instructor

July 2012, July 2013

- Instructing 10 students during week long bug camps with daily field trips

Grand Canyon Wildlands Council

2012-2014

Lead Technician

Flagstaff, AZ

- Leading collection of interdisciplinary datasets on flora, fauna, hydrology, and human impact
- Wrote technical field reports describing field sites and sampling efforts

Springs Stewardship Institute

2011-2012

Field Technician

Flagstaff, AZ

- Collected invertebrate specimens from over 40 springs on public lands in AZ and NV
- Gathering interdisciplinary datasets on the biology, geology, hydrology, and archaeology of springs
- Aided in the facilitation of 2 workshops for spring monitoring and restoration.

US Forest Service/ Americorps

2010

Interpretation Internship

Santa Fe National Forest, NM

- Created and delivered 8 educational programs for mixed-age audiences
- Designed and illustrated a field guide to freshwater macroinvertebrates
- Made 2,000+ contacts with forest visitors

Additional Scientific Research and Field Experience

Field Technician – Monitoring fish populations Glen Canyon/CO River USGS/GCMRC	2012-2022
-Handling, identifying, sexing, measuring, and tagging fish -With a team, processing up to 5,000 fish a night (collected by electroshocking) -Sampling aquatic insects at various life stages using a wide array of sampling equipment -Working nocturnally (8 pm – 4 am)	
Trip participant – Sesquicentennial Colorado River Exploratory Expedition	2019
-Selected as a USGS participant in river trip celebrating 150 years since Powell Expedition	
Field Technician Seeds of Success/Northern Arizona University	2012
-Identifying and collecting seeds from native plants in Southern Utah -Using a field press to collect voucher specimens for Flagstaff herbarium and Smithsonian collections	
Field Assistant – Monitoring populations of Humpback Chub in the Colorado River US Fish and Wildlife Service	Apr 2012, Sept 2012
-Capturing fish using hoop and trammel nets -Handling, identifying, sexing, measuring, and PIT tagging fish	
Elk calf-mortality study at the Valle Caldera National Wildlife Refuge, NM	June - July 2011
-Tagging calves with ear tag transmitter, locating wildlife using telemetry, appropriately handling calves	
Independent research project on benthic invertebrates of the Colorado River and its tributaries	2011
-Sampled insects from ten tributaries and 9 sites along the Colorado River during a 21 day river trip -Authored an unpublished 8 page report and presented at Prescott College Grand Canyon Symposium	
Collecting baseline resource data in remote technical slot canyons of Grand Canyon	2013
-Collecting data on the ecology, hydrology, geology, and recreation impacts of technical slot canyons -Rappelling as much as 200 ft/pitch, swimming in cold water, hiking long distances, and packrafting	
<i>Colpomenia tuberculata</i> as a microhabitat in Estero Santa Rosa, Sonora, Mexico	2011
-Collecting, identifying, and recording the marine macroinvertebrates that live within a brown alga -Collection methods required hiking, kayaking, snorkeling, and extensive wading -Co-wrote a 15 page unpublished report	
Electro-shocking with a backpack unit to remove invasive fish	Intermittent 2010-2015
-Participated in 14 collective days of fish removal in Prescott National Forest, AZ, Santa Fe National Forest, NM and Bright Angel Creek in Grand Canyon National Park, AZ.	
Monitoring tamarisk beetle populations on the Colorado River	2011
-Assisting a masters student (CSU) in collecting tamarisk beetles in Grand Canyon	
Surveying beaver population in the Verde River, AZ	2010
-Three weeks locating, surveying, and monitoring beaver dams for the Nature Conservancy	
Verde River and Butte Creek Restoration Field Technician	2009

Volunteer Work

Co-instructor for Girls Who Code	2018
-assisted middle school girls with coding project in after-school club	
Giving presentations at public schools	2011-present
->10 presentations on entomology for Flagstaff Festival of Science (annual)	
-Leaf litter sample processing at Sinagua Middle School (annual)	
-2 hour presentation on Environmental Careers in a rural school district (Dewey, AZ)	
-Various field trip tours at USGS SBSC	
Guest teacher for ecology club “Los delfines juvenes” in Bahia de Kino, Sonora, Mexico	2011
-Preparing and facilitating lessons on marine biology in Spanish for middle school students	
Founder and president of marine conservation group “Make a Wave” in Pompano Beach, FL	2007-2009
-Initiated and led 64 member club for 3 years -Received grant for \$2,000 of water quality testing equipment & training -Led weekly sampling and analysis of a local inlet for presence of E. Coli for one year	

Grants & Recognition

Federal agencies

QRP USGS/USFWS grant to continue research on aquatic insects of upper Colorado River Basin, partnership with Upper Colorado Endangered Fish Recovery Program (\$75,000)	2018
Dinosaur National Monument grant to continue Citizen Science efforts in park (\$10,000)	2018
Dinosaur National Monument grant to begin a Citizen Science monitoring project for aquatic insects (\$33,000)	2016
Rhode Island School of Design (RISD) Maharam STEAM fellowship to collaborate with RISD M.F.A. student (\$5,000)	2014

Societies & Organizations

Climate change in Navajo Nation: Raising awareness and understanding community perspectives (Burroughs Welcome Fund, \$50,000)	2024
Western Bat Working Group Bob Berry Award (\$2,000 training & new detector)	2015
Aldo Leopold Land Ethic Leader Workshop (Land Steward Fellowship, \$200 training)	2012
Surfrider Foundation (\$2,000 marine water testing equipment and training)	2007

Academic

AmeriCorps Award Recipient, Student Conservation Association (\$1200)	2011
Community Service Education Award (\$1200)	2011
Sustainability Scholar, The North American Mobility Program (\$5000)	2010
Prescott College Designated Class Archivist (\$300 photography award)	2010
John Wesley Powell Scholarship (\$8,000 for academic achievement)	2009
Environmental and Social Justice Scholarship (\$8,000 for community leadership)	2009
George Snow Foundation Scholar (\$12,000 for academic achievement)	2009
Ford Salute to Education Scholar (\$1,000 for academic achievement)	2009
Charles Franklin Parker Scholar (\$4,000 for community leadership)	2009

Specialized Training

○ Spatial Statistical Network Modeling (Boise, ID)	2019
○ Bayesian Modeling (Flagstaff, AZ)	2019
○ Swiftwater certified (NOLS)	2017
○ Titley ANABAT software training (Raleigh, NC)	2015
○ Trichoptera of the Southwest Workshop (Flagstaff, AZ)	2014
○ Springs Restoration Workshop (Las Vegas, NV)	2012
○ Wilderness First Responder	Current, Since 2011
○ Grand Canyon Semester selected participant (Prescott College, AZ)	2011
○ Aldo Leopold Land Ethic Leader Workshop (Albuquerque, NM)	2011
○ Completed B-3 Combination Helicopter/Airplane Safety Course (DOI)	2010

Scientific Publications

Metcalfe, A., Dobrowski, S., Rodman, K., Davis, K., Fornwalt, P., Stewart, J., Holden, Z., & Nigro, K. 2026. Planting Ahead: Evaluation of historical seed selection for reforestation in western US conifer forests. Accepted with minor revisions at Frontiers in Ecology and Environment.

Metcalfe, A., M. Ford, L. Stevens, and T. Kennedy. Assessment of dragonfly and damselfly (Odonata) occupancy and habitat suitability at- 12 Mile Slough, Glen Canyon NRA, Arizona. No. 2025-1042. US Geological Survey, 2025.

- Metcalfe, A., Weller, T., Fritzinger, C., Holton, B., and Kennedy, T. 2025. Trade-offs in designing a participatory acoustic study of bats: comparison of user engagement and data quality between two ultrasonic detectors. *Journal of North American Bat Research. Special Issue 1* (2025): 89–99.
- Palmquist, E.C., Deemer, B.R., Metcalfe, A.N., Kennedy, T.A., Bair, L.S., Fairley, H.C., Grams, P.E., Sankey, J.B., and Yackulic, C.B. 2024. eZ flow metrics—Using z-scores to estimate deviations from natural flow in the Colorado River below Glen Canyon Dam. *River Research and Applications*.
- Gaillard, C., Keany J., Metcalfe, A., Diehl, J., Ranjan, P., & Biggs, D. 2024. Mobile apps for 30 x 30 equity. *Nature*.
- Metcalfe, A., Fritzinger, C., T. Weller, Dodrill, M., Szydlo, C., Muehlbauer, J., Yackulic, C., Holton, B., Durning, L., Sankey, J., & Kennedy, T. 2023. Insectivorous bat foraging tracks the availability of aquatic flies (Diptera). *Journal of Wildlife Management*.
- Metcalfe, A., Muehlbauer, J., Ford, M., & Kennedy, T. 2023. Colorado River Basin. In Delong, M. & T. Jardine (Eds.). *Rivers of North America* (2nd ed.). Wiley.
- Allen, D., Gill, B., Metcalfe, A., Bonjour, S., Wang, J., Valentin, D., & N. Grimm. 2023. Taxonomic identity, biodiversity, and antecedent disturbances shape the dimensional stability of stream invertebrates. *Limnology and Oceanography letters*.
- Kennedy, T., Metcalfe, A., Deemer, B., Ford, M., Szydlo, C., & Yackulic, C. 2022. Little bugs, big data, and Colorado River adaptive management: Preliminary findings from the ongoing bug flow experiment at Glen Canyon Dam. *Boatman's Quarterly Review* 35(3):26-31.
- Metcalfe, A., Kurthen A., Freedman J., & Orfinger, A. 2022. The Grand Caddis hatch of JASM 2022: Trichoptera natural history observations at the Joint Aquatic Sciences Meeting in Grand Rapids, Michigan (USA). *Limnology and Oceanography Bulletin* 31(4):101–106.
- Metcalfe, A., Kennedy, T., Mendez, G., & Muehlbauer, J. 2022. Applied citizen science in freshwater research. *WIREs water*. **Invited primer**.
- Patrick, C., Anderson, K., Brown, B., Hawkins, C., Metcalfe, A., Saffarinia, P., Siqueira, T., Swan, C., Tonkin, J., & Yuan, L. 2021. The application of metacommunity theory to the management of riverine ecosystems. *WIREs Water*.
- Metcalfe, A., Muehlbauer, J., Kennedy, T., Yackulic, C., Dibble, K., & Marks, C. 2021. Net-spinning caddisfly distribution in large regulated river. *Freshwater Biology*.
- Metcalfe, A., Kennedy, T., Marks, C., Smith, A., & Muehlbauer, J. 2020. Spatial genetic structuring of a widespread aquatic insect in the Colorado River Basin: evidence for *Hydropsyche oslari* species complex. *Freshwater Science* 39 (2)
- Metcalfe, A., Muehlbauer, J., Ford, Morgan, & Kennedy, T. 2020. Bug Flows: Don't count your midges until they hatch. *The Boatman's Quarterly Review* 32(4): 8-11.
- Metcalfe, A. 2019. Adult net-spinning caddisfly (*Hydropsyche* spp.) catch rates and morphology from large rivers of the southwestern United States, 2015-2016: U.S. Geological Survey data release.
- Metcalfe, A. 2019. Locality based caddisfly (*Hydropsyche oslari*) sampling data and CO1 sequences from the southwestern United States, 2013-2016: U.S. Geological Survey data release.
- Nathan, L., Mamoozadeh, N., Tumas, H., Gunselman, S., Klass, K., Metcalfe, A., Edge, C., Waits, L., Spruell, P., Lowery, E. & Connor, E. 2019. A spatially-explicit, individual-based demogenetic simulation framework for evaluating hybridization dynamics. *Ecological Modelling* 401: 40-51.
- Metcalfe, A. 2018. Aquatic insect distribution in the Colorado River Basin. Masters Thesis. Northern Arizona University. Available from Proquest (<<https://search.proquest.com/docview/2051910485>)

Eitzel, M., Cappadonna, J., Santos-Lang, C., Duerr, R., West, S., Virapongse, A., Kyba, C., Bowser, A., Cooper, C., Sforzi, A., Metcalfe, A., Harris, E., Thiel, M., Haklay, M., Ponciano, L., Roche, J., Ceccaroni, L., Shilling, F., Dörler, D., Heigl, F., Kiessling, T., Davis, B., & Jiang, Q. 2017. Citizen science terminology matters: Exploring key terms. *Citizen Science: Theory and Practice* 2: 1-20.

Kennedy, T., Muehlbauer, J., Yackulic, C., Lytle, D., Miller, S., Dibble, K., Kortenhoeven, E., Metcalfe, A., & Baxter, C. 2016. Flow management for hydropower extirpates aquatic insects, undermining river food webs. *BioScience* 77: 561–575. DOI: 10.1093/biosci/biw059. **BioScience Editor's Choice and featured in Press Releases by USGS, Oregon State U., Conservation Magazine, and others.**

Metcalfe, A., Kennedy, T., & Fritzinger, C. 2016. Moth Mystery Hour. *The Boatman's Quarterly Review* 27(4): 15-16.

Metcalfe, A., Kennedy, T., & Muehlbauer, J. 2016. Phenology of the adult angel lichen moth (*Cisthene angelus*) in Grand Canyon, USA. *The Southwestern Naturalist* 61: 233–240. DOI: 10.1894/0038-4909-61.3.233

Metcalfe, A., Kennedy, T. & Muehlbauer, J. 2016. Angel lichen moth abundance and morphology data, Grand Canyon, AZ, 2012. US Geological Survey Data Release. DOI: 10.5066/F7154F5S

Manuscripts in progress

Mattson, M, Metcalfe, A., Ciarrachi, S., Holton, B., Lytle, D., Weller, T., Kennedy, T. Aquatic insect subsidies mediate seasonal bat activity in the Grand Canyon. *In prep.*

Major conference presentations (as lead author only)

Metcalfe, A., Kennedy, T., Muehlbauer J. 2024. Sticky situation: 12 years of monitoring emergent aquatic insects in Grand Canyon. Society for Freshwater Science. Philadelphia, PA.

Metcalfe, A., Kennedy, T., Fritzinger, C., Dodrill, M., Yackulic, C., Muehlbauer, J., Holton, B., Durning, L., Sankey, T., and Weller, T. 2024. Bats, Bugs, and Boaters: Insectivorous bat foraging along the Colorado River in Grand Canyon is determined by the availability of aquatic flies. AZ/NM joint annual meeting of AFS/TWG. Flagstaff, AZ.

Metcalfe, A., Kennedy, T., Muehlbauer J., Starbuck, M., & Lytle, D. 2023. Evaluating Bug Flows: Phenology, diet, and growing conditions of a Hydropsychid caddisfly during a stable flow experiment. Society for Freshwater Science. Brisbane, Australia.

Metcalfe, A. & Kennedy, T. 2022. Community scientists shed light on aquatic foodwebs in Grand Canyon, Arizona, USA. Invited oral presentation for session on 'Uncertainty and error in hydrological citizen science observations.' American Geophysical Union. Chicago, IL.

Metcalfe, A., Kennedy, T., Fritzinger, C., Dodrill, M., Yackulic, C., Muehlbauer, J., Holton, B., Durning, L., Sankey, T., and Weller, T. 2022. Bats, Bugs, and Boaters: Insectivorous bat foraging along the Colorado River in Grand Canyon is determined by the availability of aquatic flies. Invited speaker for special session "Colorado River Natural Resources in an Era of Uncertainty: Using Science to Inform River Management." Biennial Conference of Science and Management on the Colorado Plateau. Flagstaff, AZ.

Metcalfe, A., Kennedy, T., Weller, T., Szydlo, C., Muehlbauer, J., Dodrill, M., Durning, L., Sankey, J. & Fritzinger, C. 2022. Insectivorous bat foraging along the Colorado River in Grand Canyon is determined by aquatic prey availability. Joint Aquatic Sciences Meeting. Grand Rapids, MI.

Metcalfe, A., Kennedy, T., Weller, T., Szydlo, C., Muehlbauer, J., Dodrill, M., & Fritzinger, C. 2022. Insectivorous bat foraging along the Colorado River in Grand Canyon is determined by aquatic prey availability. Glen Canyon Dam Adaptive Management Program annual reporting meeting. Virtual.

Metcalfe, A., Muehlbauer, J., Kennedy, T., Yackulic, C., Dibble, K., & Marks, C. 2020. (Poster). Net-spinning caddisfly distribution in a large regulated river. Ecological Society of America annual meeting. Virtual.

Metcalfe, A., Kennedy, T., Muehlbauer, J., Marks, J. 2019. Gene flow among net-spinning caddisfly populations in the Colorado River Basin. Biennial Conference of Science and Management on the Colorado Plateau. Invited speaker for special session “Evaluating the effects of flow and connectivity on river ecosystems.” Flagstaff, AZ.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2019. Genetic diversity of a widespread net-spinning caddisfly (*Hydropsyche oslari*). Society Freshwater Science annual meeting. Salt Lake City, UT.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2019. Genetic diversity of a widespread net-spinning caddisfly (*Hydropsyche oslari*). (Poster). Glen Canyon Dam Adaptive Management Program annual reporting meeting. Phoenix, AZ.

Metcalfe, A. 2018. Shedding light on aquatic insects of the Colorado River Basin with citizen science. The 39th annual researchers meeting for the Upper Colorado River Endangered Fish & Recovery Program. Vernal, UT.

Metcalfe, A. 2018. Shedding light on aquatic insects of the Colorado River Basin with citizen science. Glen Canyon Dam Adaptive Management Program annual reporting meeting. Phoenix, AZ.

Metcalfe, A. Mixon, R. 2017. Do dams affect bat diets? Western Bat Working Group annual meeting. Fort Collins, CO.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2017. The Grand Beyond: Aquatic foodbase of the Upper Colorado River Basin (Poster). Glen Canyon Dam Adaptive Management Program annual reporting meeting. Phoenix, AZ.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2017. The Colorado River Basin: Aquatic insect diversity and distribution in a fragmented riverscape. Society for Freshwater Science annual meeting. Raleigh, NC.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2016. Compounding Impoundments: aquatic insect distribution and emergence in a fragmented riverscape. Society for Freshwater Science annual meeting. Sacramento, CA.

Other, invited, scientific presentations

Metcalfe, A. 2026. Update on status of bat research along the Colorado River in Grand Canyon. Arizona-New Mexico Chapters Fisheries and Wildlife Societies Joint Annual Meeting. Sedona, AZ.

Metcalfe, A. 2025. Spinning Silken Yarns: Unraveling the Mysteries of Fingernet Caddisflies with GCY. Invited speaker for Grand Canyon Youth storytelling event and fundraiser. Flagstaff, AZ.

Metcalfe, A. 2024. Boats, bugs, and bats: bat foraging research in Grand Canyon. Invited ‘bat chat’ presentation for Bat Conservation International.

Metcalfe, A. 2023 & 2024. Guest lecturer at Western Colorado University, Science for Environmental Management.

Metcalfe, A. 2022. Citizen scientists shed light on aquatic foodwebs in Grand Canyon, Arizona, USA. Invited speaker for session on “Water, citizen science, and stakeholder engagement” at the International Symposium on Water Sustainability 2022 hosted by Hong Kong University and the Jockey Club Water Initiatives on Sustainability and Engagement. Virtual.

Metcalfe, A. 2022. Citizen science and aquatic foodwebs in Grand Canyon, Arizona, USA. Invited guest instructor for Northern Arizona University Grand Canyon Semester.

Metcalfe, A. 2021. Entomological research in the Colorado River Basin. Upward Bound Math & Science. Navajo Nation (virtual presentation).

Metcalfe, A. 2019. What are Bug Flows? Field presentation to the Coconino County Watershed Partnership. Page, AZ.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2019. Colorado River ecosystem response to the 2018 Bug Flow Experiment released from Glen Canyon Dam. Grand Canyon River Guides Training Seminar. Marble Canyon, AZ.

Metcalfe, A. 2017. What is Citizen Science? Consultative Group for Biological Diversity annual meeting. Flagstaff, AZ.

Metcalfe, A., Kennedy, T., Muehlbauer, J. 2017. Comparative emergence studies in the upper basin using citizen science light traps. Western Area Power Administration webinar (virtual presentation).

Metcalfe, A. 2016. Big River Bugs: A Citizen Science Approach. Moab Festival of Science. Moab, UT.

Metcalfe, A. 2016. Aquatic insect diversity and distribution in the Colorado River Basin. Center for Ecosystem Science and Society seminar. Flagstaff, AZ.

External media coverage

- River Radius podcast – Bats and rabid misinformation in the Grand Canyon (2024) - <https://www.theriverradius.com/episodes/episode/49b88a23/bats-and-rabid-misinformation-in-the-grand-canyon>
- 3 cool ways USGS is studying bats in national parks (2023). <https://www.usgs.gov/news/featured-story/3-cool-ways-usgs-studying-bats-national-parks>
- Boaters, Bugs, and the uncertain future of the Colorado River (2022). Interviewed in article about Colorado River and climate change <https://azdailysun.com/news/local/boaters-bugs-and-the-uncertain-future-of-the-colorado-river/article_4fdb8678-de0e-11ec-844f-e3f302e2bdaa.html?utm_medium=social&utm_source=twitter&utm_campaign=user-share>
- Science Moab podcast (2022) “River bugs: Aquatic insects of Grand Canyon”. <<https://sciencemoab.org/river-bugs/>>
- Society for Freshwater Science (2021) Guest for Making Waves podcast “River guides are science guides” <<https://freshwater-science.org/news/making-waves-ep-49>>
- USGS (2019) Guest for podcast about Citizen Science. “Outstanding in the Field: Citizen Science – Your Data in Action” <<https://www.usgs.gov/media/audio/outstanding-field-ep-2-citizen-science-your-data-action>>
- Arizona PBS (2019) Interviewed for documentary about the future of Grand Canyon National Park. <<https://azpbs.org/2019/02/beyond-the-rim-the-next-100-years-of-grand-canyon-national-park>>
- National Geographic (2016) Interviewed for “At 17 million years old, Grand Canyon still has lessons to teach.” <<https://video.nationalgeographic.com/video/short-film-showcase/00000156-e673-dbd5-add6-fff3e6d30000>>
- Scientific American (2019) Article about conducting aquatic ecology research in Grand Canyon. <<https://www.scientificamerican.com/article/re-engineering-the-colorado-river-to-save-the-grand-canyon>>
- Associated Press, picked up by The New York Times, The Washington Post, US News and World Report, and others (2018) Story describing the Bug Flows experiment <<https://apnews.com/accec230d442406fa7bedf4af219c5d1>>
- Bureau of Reclamation (2018) Official press release describing Bug Flows experiment <<https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=6213313>>
- Undark Magazine (2018) Essay about conducting aquatic ecology research in Grand Canyon <https://undark.org/article/wilo-doyle-colorado-river-insects/>
- NAU (2017) Featured on Center for Ecosystem Science and Society page < <http://ecoss.nau.edu/team/anya-metcalfe/>>
- National Public Radio KNAU (2017) *Cisthene angelus* paper. <<https://www.knau.org/post/earth-notes-angel-lichen-moths>>
- Science Magazine (2016) Scientific reinterpretation of the BioScience hydropeaking paper. <<http://science.sciencemag.org/content/353/6304/1099>>
- Arizona Daily Sun (2016) Story about BioScience hydropeaking paper. <http://azdailysun.com/news/local/dam-management-plan-aims-to-boost-native-fishbugs/article_8f2a949c-03ee-5f96-86b4-eda52fd0ffbf.html>
- National Public Radio KNAU (2016) Story about BioScience hydropeaking paper. <<http://knau.org/post/study-hydropower-decimates-aquatic-insects-coloradoriver#stream/0>>
- High Country News (2016) Reinterpretation of BioScience hydropeaking paper. <<https://www.hcn.org/issues/48.12/new-measures-could-reduce-glen-canyon-dams-impact-on-the-grand-canyon-a-bit>>
- Columbia Basin Fish & Wildlife News Bulletin (2016) Summary of BioScience hydropeaking paper. <<http://www.cbbulletin.com/436660.aspx>>
- American Fisheries Society (2016) Summary of BioScience hydropeaking paper. <<https://fisheries.org/2016/05/citizen-science-reveals-how-river-food-webs-are-affected-by-hydropower-practices/>>

- Conservation Magazine (2016) Summary of BioScience hydropeaking paper. <<http://conservationmagazine.org/2016/05/simple-trick-make-dams-less-damagingriver-ecosystems/>>
- USGS (2016) Official press release for BioScience hydropeaking paper. <<https://www.usgs.gov/news/river-food-webs-threatened-widespread-hydropowerpractice>>
- Oregon State University (2016) Official press releases for BioScience hydropeaking paper. <<https://today.oregonstate.edu/archives/2016/may/hydropeaking-river-waterlevels-disrupting-insect-survival-river-ecosystems>>
- BioScience (2016) Editor's choice selection for BioScience hydropeaking paper. <<http://bioscienceaibs.libsyn.com/hydroelectric-dams-kill-insects-wreak-havoc-withfood-webs>>

Students & Technicians Mentored

Maragaret Mattson. University of Oregon PhD Candidate. 2024-present

- Trained and collaborated on processing and analyzing acoustic bat data from Grand Canyon
- Mentorship for: R, acoustic analysis, GIS and spatial data

Ari Brisco-Schofield. University of California San Diego. Summer 2024.

- Internship supervisor Youth & Education in Science (YES) Ecology Summer Fellows Program
- Acoustic file analysis and management, R statistical analysis, aquatic entomology, youth outreach

Ryan Murphy Northern Arizona University, Environmental Sciences. Spring 2024.

- Internship supervisor for ENV 408 and mentor in acoustic data file management

Rachel Diehl New Jersey Institute of Technology. Summer 2022.

- Internship supervisor Youth & Education in Science (YES) Ecology Summer Fellows Program
- Aquatic entomology, field methods for ecology, data management and analysis

Diana Valentin Northern Arizona University, Environmental Sciences. Summer 2021.

- Internship supervisor for ENV 408, scientific illustration

Gabriella Mendez Northern Arizona University, Environmental Sciences. Spring 2021.

- Internship supervisor for ENV 408, scientific illustration

Alexander Gonzalez Northern Arizona University, Environmental Sciences. Fall 2020.

- Internship supervisor for ENV 408 and mentor in caddisfly taxonomy

Emilio Saladino Northern Arizona University, Environmental Sciences. 2019 – 2020.

- Internship supervisor for ENV 408 and mentor in Science outreach

Brece Hendrix Northern Arizona University, Forestry., Biological technician 2015-2018.

- Supervisor and mentored in aquatic entomology

Kate Aitchison Rhode Island School of Design. 2015-2016.

- Collaborator in science communication for Maharam STEAM Fellowship

Professional Service

- Early career committee member for Society Freshwater Science
- Planning committee for the Biennial Conference of Science and Management on the Colorado Plateau and Southwest Region in 2021 and 2025
- Co-coordinator for Flagstaff Science Campus Interdisciplinary Science Committee
- Peer reviewer for Environmental Entomology, Journal of Environmental Management, Journal of Applied Ecology, Environmental Science and Policy, and other scientific publication outlets
- Flagstaff Science Center Outreach Committee since 2013
- Classroom speaker for Flagstaff Festival of Science since 2012
- Volunteer with Ecological Society of America Career Central

Additional Skills and Interests

- Trilingual (Russian, Spanish, English)
- Outdoor enthusiast: experienced river runner, hiker, canyoneer, and rock climber
- Certified Wilderness First Responder, actively maintained since May 2011
- Proficient with R, GIS, Inkscape, Github, Microsoft Office, genetic & acoustic analysis
- Fluent and current with various AI-applications, agentic architecture, and recognizing appropriate use cases

Header photo by Freshwaters Illustrated