



BOONE AND CROCKETT CLUB
University Programs | 2022



Welcome



Dear Supporters,

University Programs is excited to present this year's annual report, especially because this is the first report since 2019 in which we had a full year of in-person activities. We enjoyed each other's company at the Club's annual meeting in New Orleans last December, during a summer retreat at the Theodore Roosevelt Memorial Ranch in Montana, at a lunch for student leaders of The Wildlife Society in Spokane, and during a policy workshop for B&C fellows, also in Spokane.

The mission of the Boone and Crockett Club's University Programs is the development of a diverse community of high-impact wildlife conservation leaders. To meet this mission, fellows are not only well-grounded in wildlife ecology and management but they understand the role of hunters in conservation, form strong professional networks, and have the skills needed to influence policy. In addition to the excitement of many in-person activities, this last year brought the hiring of Dr. Jerry Belant at Michigan State University, the reinvigoration of the program at Oregon State University, and a new fellowship in Forest Management Policy at the University of Idaho. These are exciting times for University Programs.

Please enjoy this year's annual report of the Boone and Crockett Club's University Programs.

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Dave Hewitt *Josh Millspaugh*

Dave Hewitt and Josh Millspaugh
University Programs, Deputy Co-Chairpersons



Clemson University
University of Idaho
Michigan State University
Mississippi State University (inactive)
Oregon State University
Texas A&M University
Texas A&M University-Kingsville
University of Montana
University of Wisconsin-Stevens Point

COVER: Elk on the Blackfeet Reservation in Montana, taken last winter during elk captures associated with Daniel Bird's graduate research.

The mission of the Boone and Crockett Club University Programs is the development of a diverse community of high-impact wildlife conservation leaders.

2022 OVERVIEW

**3 ENDOWED
PROFESSORSHIPS**

NUMBER OF GRADUATES: 8

TOTAL FELLOWS: 38

UNDERGRAD: 2

MASTERS: 11

PHD: 18

POSTDOCTORAL: 7

AWARDS: 9

SCHOLARLY Pubs: 66

POPULAR ARTICLES: 6

INVITED TALKS: 38

RESEARCH PRESENTATIONS: 55

COURSES TAUGHT: 4

Learn more about the Boone and Crockett Club and our University Programs at www.Boone-Crockett.org

Boone and Crockett Fellow Spotlight

2022 Boone and Crockett Fellow Outstanding Achievement Award In Graduate Research

In 2019 the Club established the annual Boone and Crockett Fellow Outstanding Achievement Award to recognize a graduate student whose research advances the Club's mission and informs natural resource management and policy decisions in North America. The award highlights and strengthens the connection between students and the Boone and Crockett Club that supports them.

2022 AWARD WINNER - CHARLIE BOOHER
University of Montana - M.S. and M.P.A. - Graduated 2022

**Thesis Title: Looking to the future of conservation:
the role of hunting in wildlife policy**

Charlie grew up hunting, fishing, camping, and paddling with his family in Michigan and Wisconsin. He received his bachelor's degree from Michigan State University, where he combined traditional training in wildlife management with studies in conservation policy, interning with organizations including The Wildlife Society, the Theodore Roosevelt Conservation Partnership, Texas Parks & Wildlife Department, and Michigan United Conservation Clubs. Charlie received a joint M.S. in Wildlife Biology and a Master of Public Administration from the University of Montana. His thesis aimed to address major issues facing the field of wildlife conservation by clarifying commonly used—but rarely defined—language surrounding the take of wildlife; compiling and analyzing dedicated funding for fish and wildlife agencies; and assessing challenges to the North American Model of Wildlife Conservation to inform the future of the field nationwide. Charlie is currently employed as a consultant at Watershed Results, a DC-based lobbying firm. He provides direct advocacy, strategic communication, and earned media services to the Boone and Crockett Club, the Wild Sheep Foundation, MeatEater Inc., and the Montana Sporting Coalition in this role.

Charlie hunting Montana's eastern Rocky Mountain Front.



Charlie presented his research to B&C members at the North American Wildlife and Natural Resources Conference in Spokane, Washington, March 2022.



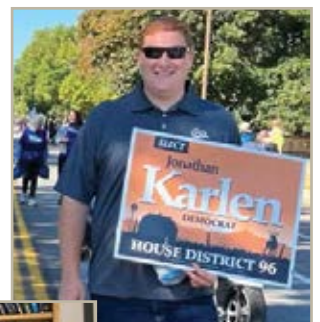
Learn more about the Outstanding Fellow Award and see a complete list of award winners online.



B&C 2022 Fellow Jonathan Karlen elected to the Montana State Legislature for House District 96

Wasting no time putting to work a master's degree in public administration, Boone and Crockett Fellow Jonathan Karlen was recently elected to the Montana State Legislature for House District 96, representing Missoula, Frenchtown, and Huson. Karlen has also been working with Dr. Josh Millspaugh, the Boone and Crockett Professor of Wildlife Conservation at the University of Montana (UM), and Dr. Jon McRoberts, administrator of UM's Boone and Crockett Wildlife Conservation Program. Together, the researchers are studying hunting regulations in all 50 states to identify potential drivers of regulation complexity that might pose barriers to hunter recruitment, retention, and reactivation. This research will provide the data that states need to develop and revise regulations that help address the needs of hunters.

As a Boone and Crockett Fellow, Jonathan worked with Dr. Millspaugh write a bill that makes hunting more accessible for Montana students. They successfully lobbied the legislature and the bill was signed into law in May 2021.



Learn more about Jonathan Karlen.

2022 University Programs Events

Spring Meeting Presentations

At the Club's 2022 Spring meeting, in conjunction with the Wildlife Management Institute's 87th North American Wildlife and Natural Resources Conference in Spokane, Washington, four of our B&C University Programs Fellows presented at the B&C Member's Luncheon on Thursday, March 17, 2022. Presenting fellows included Jonathan Karlen, Noelle Thompson, 2021 Outstanding Boone and Crockett Fellow Award winner Ellen Pero, and Charlie Booher, pictured below with their advisors Josh Millspaugh and David Williams.



TRMR Retreat

The third University Programs Retreat was held June 2-5, 2022, at the Boone and Crockett Club Theodore Roosevelt Memorial Ranch, in Dupuyer, Montana. The intent of the retreat was to bring together University Program leaders, Club members and university administrators to participate in a strategic planning process. During this two-day retreat, these specific goals were discussed:

- Increase public outreach and visibility.
- Increase the values around diversity, equity and inclusion.
- Align the University Programs' priorities with the Club's strategic plan.
- Increase collaboration amongst all the programs.



Seven universities were represented at the retreat.

Webinars

DR. MICHEL KOHL

Professional Diversity: The Key to Conserving Wildlife Diversity (May 2022)

Dr. Kohl is an Assistant Professor of Wildlife Management and Wildlife Extension Specialist at University of Georgia and a former B&C Fellow.

The Wildlife Society Conference

The Boone and Crockett Club was well represented at the Annual Wildlife Society Conference this year in Spokane, Washington, which was held from November 6-10. The Club sponsored the Student Chapter Leaders luncheon and Josh Millspaugh spoke about the opportunities through the University Programs. There were raffles and giveaway items students could take to learn more about the Club. The Club was also well-represented by our graduate fellows who offered a couple dozen posters and talks in various symposia. Fellows also benefited from professional development opportunities and took advantage of the strong network of regular and professional Club members, as well as staff and contractors. These sessions have historically included lessons on leadership, science communication, and diversity, equity, and inclusion in the field of wildlife conservation.



Josh Millspaugh gave the students in attendance at the Chapter Leaders luncheon a quick quiz on the Club.

B&C Policy Bootcamp

When the University Programs committee identified policy and advocacy as an area of interest, they recruited the team at Watershed Results—including Dr. Greg Schildwachter and Charlie Booher, both alumni of our University Programs—to instruct a session for fellows to attend. This initial policy “bootcamp” intended to give students an introduction to various policy processes and offer a number of ways to think about turning their academic research into tangible natural resource policy. Students learned how to construct an issue brief, how to identify key decision-makers in an issue, and different ways to communicate their interests. Importantly, this session also gave students from different universities an opportunity to interact and learn from each other, as well as connect with the Club's conservation policy team.

B&C professional member Greg Schildwachter instructed the inaugural B&C Policy Bootcamp in Spokane, Washington, immediately following the Wildlife Society Conference.



Demmer Scholars Program



Mr. Mark Rey

The 14th cohort of Demmer Scholars welcomed 27 participants who spent 12 weeks in Washington, D.C. The scholars had access to nearly all of the pre-COVID experiences the program provides, including a tour of the Dome of the U.S. Capitol. COVID was still with the group, with two breakthrough infections requiring creative rescheduling. Nevertheless, the selected impressions below suggest that the group benefited from their summer of learning. The 2022 cohort brought the total number of Demmer Scholars to 338 students since the program's inception.



Kailie Todd

The University of Montana

Interned with the Federal Forest Resource Coalition and the Forest Resources Association

"Between classes, field trips, and my internships, this summer has been an experience I will never forget. I will take the lessons I have learned with me throughout my professional career. I feel like I learned more this summer than in most of my on-campus college classes. I am grateful for this program and extremely glad that my internship placement was with FRA and FFRC."

Kailie standing on the top of the dome of the U.S. Capitol. The students were able tour the Dome this summer.



Truman Forbes

Michigan State University

Interned with the U.S. Forest Service

"My time at the Forest Service taught me so much about the workforce, government, working with others, and bureaucracy. It also helped create a clearer career path. While I faced some challenges, I learned something from each one, which I will take to every job I hold. This was an invaluable summer, and I can't wait to explore the possibilities that have stemmed from it."



Camille Green

Mississippi State University

Interned with Cornerstone Government Affairs

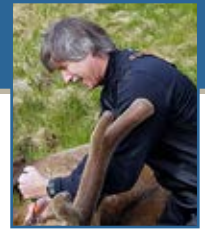
"I am not exaggerating when I say this was the best summer of my life. I have wanted to be a lobbyist (or, as I have learned to say, "work in government affairs") for the majority of my collegiate career. I was terrified that I would come to Washington, D.C., hate working in policy, and have to become a park ranger to find happiness in a career. Yet, I did not hate it; my internship changed my life's trajectory entirely."

The 2022 Demmer Scholars are treated to a night tour of the US Capitol by Congressman Bruce Westerman (R-AR).



Michigan State University

Michigan State University (MSU) is home to one of the nation's premier fisheries and wildlife programs. The Boone and Crockett Program at MSU emphasizes research on wildlife responses to human disturbances, conflict resolution between humans and wildlife, effective management of harvested wildlife populations, and the integration of wildlife science with policy and practice. The program prepares future conservation leaders in translational wildlife science as we work directly with agencies, constituents, or governments to implement the best available science into effective policy and governance.



Dr. Jerry Belant



WELCOME DR. JERRY BELANT AS THE NEW BOONE AND CROCKETT PROFESSOR

Jerry Belant was the first Camp Fire Professor of Wildlife Conservation and Director of the program at SUNY College of Environmental Science and Forestry. He has served as a member of the Council for the International Association for Bear Research and Management and Chair of the IUCN Species Survival Commission's Small Carnivore Specialist Group. Jerry is currently Deputy Editor-in-Chief for the journal *BioScience*. He received his B.S. and M.S. degrees from the University of Wisconsin-Stevens Point and his Ph.D. from the University of Alaska Fairbanks. His research interests include large carnivore and ungulate ecology, harvest management, mitigating human-wildlife conflicts, and sustainable use of wildlife.

FUNDING SOURCES

- Alaska Department of Fish and Game
- Grand Portage Band of Lake Superior Chippewa
- Great Lakes Fish and Wildlife Restoration Act
- Michigan Department of Natural Resources
- Missouri Department of Conservation
- National Park Foundation
- National Park Service
- New York State Department of Environmental Conservation
- Safari Club International Foundation
- MSU College of Agriculture and Natural Resources
- MSU Extension
- MSU AgBioResearch
- MSU Boone and Crockett Club endowment



LEFT: Bull elk rests following capture and attachment of GPS collar on Afognak Island, Alaska.

RIGHT: PhD student Alejandra Zubiria Perez collecting wolf scat on Isle Royale National Park, Michigan.

BOONE AND CROCKETT FELLOW – SAMANTHA COURTNEY

Samantha grew up on the shores of Lake Huron in Michigan. She developed an interest in wildlife by reading about Jane Goodall and watching programs about Steve Irwin. She moved to East Lansing to pursue a B.S. in Fisheries and Wildlife at Michigan State University. After graduating, she worked as a research technician for several projects working with a variety of species including elk, mule deer, bighorn sheep, and small mammals. For over a year she worked as a game management assistant for the North Dakota Game and Fish Department conducting pheasant and grouse surveys, banding waterfowl, assisting in bighorn sheep and sage grouse translocations, performing wildlife necropsies, and helping run the state's chronic wasting disease surveillance program. Her master's research focuses on studying whitetail deer behavior to gain a better understanding of factors that influence chronic wasting disease transmission. Her goal is to become a wildlife biologist for a state or federal agency that uses sound science to inform management and policy decisions of game species.



University of Montana

Long known for its exceptional big game research, the University of Montana hosted the original Boone and Crockett Professor beginning in 1987. The Boone and Crockett Program at Montana focuses primarily on integrating wildlife conservation and land management. Our program addresses society's most significant wildlife and natural resource challenges through collaborative, relevant, and high-caliber research and teaching. The program prepares future conservation leaders through science-based instruction that promotes wise stewardship, the application of the best available science, and informed policy decisions. A key component of the research-teaching effort is centered on Boone and Crockett Club's Theodore Roosevelt Memorial Ranch and the Elmer E. Rasmuson Wildlife Conservation Center near Dupuyer, Montana. The 6,000-acre working cattle ranch and the Center are adjacent to the Lewis and Clark National Forest along the Rocky Mountain Front.



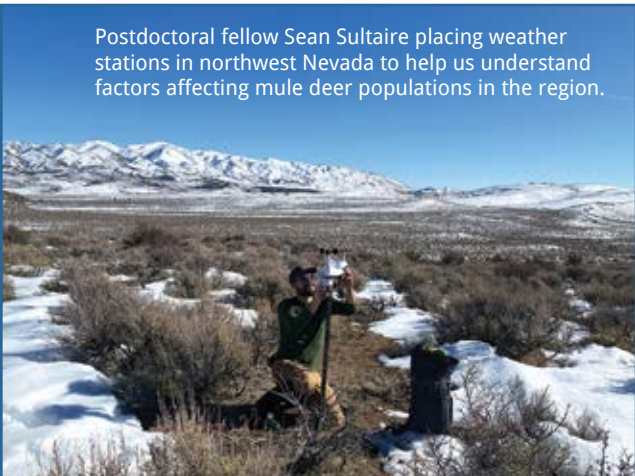
Dr. Joshua Millspaugh



COLLABORATION WITH TRIBAL PARTNERS

Joshua Millspaugh has helped established a partnership with the Blackfeet Nation Fish and Wildlife Department in Montana and mentors two graduate fellows whose research is conducted in collaboration with the Tribe. Two B&C Fellows are working on this research. Daniel Bird, a PhD student, is conducting a research project focused on elk migration corridors on the Blackfeet Reservation. Landon Magee, an M.S. student from the Blackfeet Nation, is researching moose population dynamics on the reservation and bordering Glacier National Park. Through this work, the Club's program at UM is advancing wildlife management, promoting opportunities for Native American students, and building a collaborative relationship with the Blackfeet Nation Fish and Wildlife Department. Chad Bishop, professional member and Chair of the Department of Wildlife Biology at UM, is also heavily involved in these research projects and co-advises Landon Magee. This work is directly relevant to the efforts of the B&C Conservation Policy Committee to improve migration corridor habitat for big game across the West.

Postdoctoral fellow Sean Sultaire placing weather stations in northwest Nevada to help us understand factors affecting mule deer populations in the region.



FUNDING SOURCES

- National Science Foundation
- Rocky Mountain Elk Foundation
- North Dakota Game and Fish Department
- Missouri Department of Conservation
- U.S. Bureau of Land Management
- U.S. Forest Service
- Montana Fish, Wildlife, and Parks
- Wyoming Game and Fish Department
- Wyoming Department of Transportation
- Idaho Fish and Game
- National Park Service
- Nevada Department of Wildlife
- Ricketts Foundation
- Wyoming State Wildlife Grants
- U.S. Department of Defense
- Council to Advance Hunting and the Shooting Sports
- Conservation Frontlines
- UM Boone and Crockett Club endowment

BOONE AND CROCKETT FELLOW – DANIEL BIRD

Born in Santa Fe, New Mexico, Daniel Bird was raised on the Santo Domingo Pueblo Indian Reservation, where he is an enrolled tribal member. As a child at a camp for tribal students interested in natural resource fields, he met a Native wildlife biologist who inspired him. Since then, he completed his undergraduate degree in wildlife science at New Mexico State University, and master's in wildlife science at Purdue University. He hopes to increase Native American representation in STEM fields at the university, tribal, state, and federal levels. In addition, he plans to become a wildlife biologist for tribal communities to sustainably manage natural resources while maintaining unique cultures, languages, and indigenous ways of living. His Ph.D. work at the University of Montana involves working with the Blackfeet Nation in northwest Montana to research the impacts of fences and proposed fencing expansion on elk migration movements and habitat use on the reservation and broader landscapes.





Dr. Perry Barboza

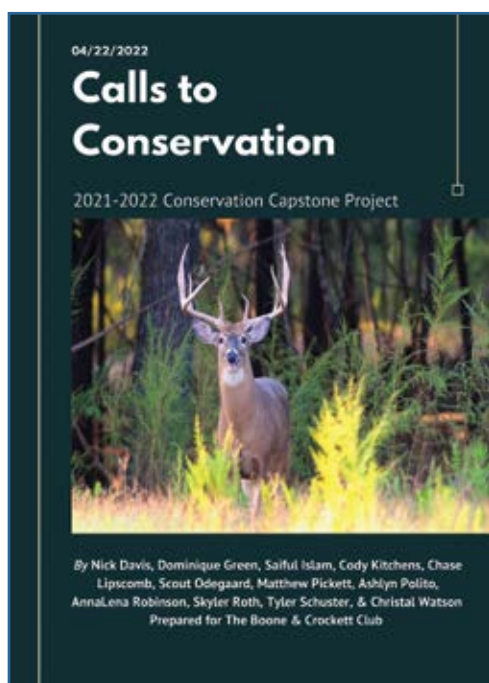


The Boone and Crockett program at Texas A&M prepares students to tackle real-world problems facing wildlife science and wildlife policymakers. Undergraduate students are immersed in courses that cover public trust doctrine, property rights, invasive species, endangered species, wildlife ownership, and water allocation. We work with graduate students in public administration on capstone projects with the Bush School of Government. In spring 2022, the capstone class completed a survey of attitudes to managing game, invasive species and endangered species in 18-30 year olds to understand perspectives to conservation in the next generation of voters. The current capstone class is working with the Natural Resources Conservation Service to understand attitudes to restoration of prairies on private lands. Our graduate students in wildlife study nutrition of caribou, moose and grizzly bears through collaborations with landscape ecologists, entomologists and biomedical scientists.

Students in the 3+2 Program take internships as part of their undergraduate program and as part of the Public Service and Administration Program. Hunter Parker recently completed a summer internship with the Property and Environment Research Center in Montana. Erin Kavanagh completed an internship in Washington D.C. through the Agricultural and Natural Resources Policy Program.

FUNDING SOURCES

- US Geological Survey. Alaska Science Center. Forage Quality for the Porcupine Caribou Herd.
- Alaska Department of Fish and Game. Diet Quality for the Teshekpuk Caribou Herd.
- Endowments at Texas A&M University: M Fox Ranch Wildlife Conservation Endowment, Becky and Monty Davis Wildlife Conservation Endowment



Bush School Conservation Capstone April 2022. *Calls to Conservation*. Scout Odegaard, Nicholas Davis, Ashlyn Polito, AnnaLena Robinson, Dominique Green, Saiful Islam, Matthew Pickett, Tyler Schuster, Chase Lipscomb, Cody Kitchens, Skyler Roth, and Christal Watson.



BOONE AND CROCKETT FELLOW – BRIDGETT BENEDICT

Bridgett spent her entire life surrounded by nature, wildlife, and animals. After graduating with a bachelor's degree in environmental biology and management from UC Davis, she worked in the wildlife biology field for six years. Leaving her position as a project biologist at an environmental consulting firm to pursue a master's and now a Ph.D., Bridgett is preparing herself for a research-centered career. "I want my research to have a purpose in conservation and management and to be useful for generations to come," she says. The overall objective of her Ph.D. research is to understand the behavioral and physiological costs of biting insects to moose. She also aims to understand and describe the physiological costs (stress, injury, infection) of insects to moose and in relation to the overall health of the individual. Understanding these costs is important for the management of moose populations in relation to habitat shifts due to fire and projected warming of the climate.



Texas A&M University - Kingsville

Texas A&M University-Kingsville's (TAMUK) wildlife program teaches undergraduate and graduate students about range and wildlife management in the southwestern United States. These students work with the program's scientists to study wildlife ecology and management, focusing on applied studies that address challenges confronting wildlife biologists. TAMUK has nationally recognized research programs in big game, upland gamebirds, wild cats, waterfowl and wetland birds, and habitat restoration. A unique aspect of TAMUK's wildlife program is the Caesar Kleberg Wildlife Research Institute (CKWRI), a privately funded entity that supports wildlife research at the university. The CKWRI ensures faculty and students have the finest research facilities, including GIS, molecular ecology, necropsy, and forage analysis labs as well as facilities to work with captive ungulates and birds. TAMUK's wildlife research programs provide undergraduate and graduate students innumerable opportunities for hands-on experience in a wide variety of research activities.



FUNDING SOURCES

- Boone and Crockett Endowed Fellowship at TAMUK
- Texas Parks and Wildlife Department
- Mule Deer Foundation
- Caesar Kleberg Wildlife Research Institute
- Private landowners in the Texas Panhandle

RIGHT: Calvin Ellis, the B&C Fellow at Texas A&M University-Kingsville, collects ticks from a nilgai antelope as part of a study of deer and nilgai's role in spreading cattle fever ticks.

BELOW: Students from universities across Texas get experience handling white-tailed deer during captures as part of a long-term population study conducted through the East Foundation and Caesar Kleberg Wildlife Research Institute.



BOONE AND CROCKETT FELLOW – CALVIN ELLIS

Calvin Ellis grew up in a small town outside of Athens, Georgia. There, he got outside as often as he could. His love for the outdoors helped him decide to earn a bachelor's in wildlife science from the Warnell School of Forestry and Natural Resources at the University of Georgia in 2020. Ideally, his professional research would focus on large mammal spatial ecology, particularly ungulates, along with predator-prey ecology. At Texas A&M University-Kingsville, he is a M.S. student in range and wildlife management. His graduate research project focuses on mule deer spatial ecology in the Texas Panhandle, specifically understanding the movement of species susceptible to chronic wasting disease. His team GPS-collared 30 juvenile mule deer in Oldham County, located along the Canadian River, to study movement and dispersal patterns. Calvin will also use a previously collected five-year dataset of mule deer movement to examine site fidelity and fine-scale selection in crop fields in this region.



University of Wisconsin - Stevens Point



For more than a decade, the University of Wisconsin-Stevens Point has offered the Douglas R. Stephens Boone and Crockett Club Fellowship in Wildlife Conservation to undergraduate students who display academic excellence and are interested in gaining a background in wildlife conservation and leadership skills. The faculty-mentored student research fellowships further the mission of the Boone and Crockett Club and advance the educational, research, and outreach mission of the College of Natural Resources. UWSP's Wildlife Ecology program emphasizes undergraduate teaching and incorporates research in areas such as conservation biology, avian ecology, predator ecology, wetland ecology, wildlife health, population dynamics, wildlife damage management, and habitat management. Practical, hands-on experience inside and outside the classroom is a cornerstone of the program. Undergraduate courses focus on the problem-solving and scientific skills needed to understand the ecological interactions affecting wildlife management, including game, non-game, endangered, and invasive species.

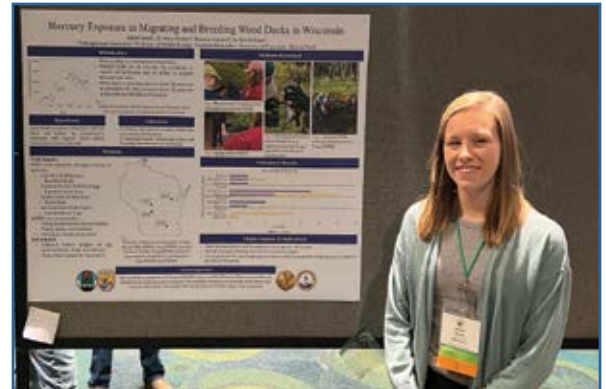
PROGRAM SPOTLIGHT: THE WILDLIFE SOCIETY

Leadership training, personnel management, and budget and finance training are primarily provided through UWSP's student chapter of The Wildlife Society, which supports approximately 20 research and educational projects led by the student chapter. Each project has 2-5 student co-leaders who are responsible for budget, people, logistics, and supply management. While this is an extracurricular, volunteer opportunity, all are encouraged to participate and many students in the wildlife major are involved. In fact, the student chapter of the Wildlife Society has consistently been recognized at the state, regional, and international level for its exceptional engagement and success.

FUNDING SOURCES

- Douglas R. Stephens Boone and Crockett Club Wildlife Research Fellowship Endowment
- Douglas R. Stephens Wildlife Research Fellowship Endowment - Stephens Family Fund
- Kennedy-Grohne Waterfowl and Wetland Endowment
- Gerald and Helen Stephens Wildlife Professorship Endowment
- UW-Stevens Point College of Natural Resources Graduate Assistantship

Professor of Wildlife Ecology and Management Jason Riddle, (second from left) and B&C Fellow Hayden Walkush (third from left) attended the University Programs Retreat at the TRM Ranch in June, 2022.



Smith presented her poster *Mercury Exposure in Migrating and Breeding Wood Ducks in Wisconsin* at The Wildlife Society conference in Spokane, Washington, November 2022.

BOONE AND CROCKETT FELLOW - AMBER SMITH

Amber Smith knew at a young age that she wanted to work with wildlife. She didn't grow up hunting, but she is becoming proficient with firearms and hopes to become a bona fide hunter soon. As an undergraduate at UWSP, she found her passion in wildlife research, specifically wildlife diseases. Ideally, she will land a career in the field of wildlife research exploring the correlation between wildlife health and human-wildlife conflict to help better inform wildlife management. Her undergraduate project at UWSP examines mercury exposure in adult and juvenile wood ducks that use wetlands in Wisconsin. In addition, her work will investigate factors influencing feather and blood mercury concentrations.



Clemson University

Clemson has a long history of exceptional research, teaching, and outreach programs in applied wildlife management and conservation both globally and locally. Clemson houses the James C. Kennedy Waterfowl and Wetlands Center, and Clemson is the new home for the National Bobwhite Conservation Initiative, further establishing Clemson as a leading institution for applied wildlife management research and training in the region and nationally.

The Boone and Crockett Club's University Programs has sought opportunities to incorporate fields of study such as law, communications, political science, public administration, energy, agriculture and forestry into existing or new curriculum within the school. At Clemson in the past year, two graduate courses have been offered: "The Politics of Science" and "Natural Resources Conservation on Indigenous Peoples Land," the latter of which was developed and offered for the first time and to our knowledge, is unique to Clemson. In addition, as a part of our wildlife and fisheries biology undergraduate curriculum, we have all of these topics addressed as stand-alone courses or taught as a component of courses.

Clemson University doctoral student Dana Nelson works on a trail camera during field work on swift fox restoration.



Oregon State University

Oregon State University (OSU) is a land-grant institution that has been educating forestry professionals for a century. OSU's College of Forestry has earned a reputation as a world-class center of teaching and learning about forests and related resources. The College of Forestry offers undergraduate and graduate degrees in three departments: Forest Engineering, Resources & Management; Forest Ecosystems & Society; and Wood Science and Engineering. The mission of the College of Forestry is to educate and engage the next generation of scholars, practitioners, and users of the world's forest resources, to conduct distinctive problem-solving and fundamental research on the nature and use of forests and related resources, and to share discoveries and knowledge.

The Boone and Crockett Club recently announced the new coordinator at Oregon State, Assistant Professor Forest Policy, Dr. Mindy Crandall. Their active projects include: assessing the relationship between wildfire and vulnerable human communities; looking at the success of minority-owned businesses in capturing dollars related to a new (restoration) forest economy; exploring the impact that growing up in rural, forest-dependent places has on youth aspirations for the future; and delving into the role of local people in decision-making on state owned forest lands.

Mindy Crandall (second from left) and three of her students at the recent Women's Forest Congress.



University of Idaho

This past August, the Boone and Crockett Club entered into an agreement with the University of Idaho to establish a Boone and Crockett Fellowship there. The Club is excited to work with yet another major university to help undergraduate and graduate students achieve their goals in the field of wildlife conservation. We all win with skilled biologists in the conservation-resource field, and the Club is honored to be a part of this new partnership.



2022 Boone and Crockett Fellows



BRIDGETT BENEDICT
Ph.D. Student - Texas A&M
Costs of insect harassment to ungulates



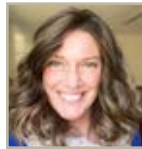
JOSEPH GOERGEN
M.S. Student - Michigan State
Drivers of success for community-based natural resource management in Namibia



JACK MAGEE
M.S. Student - Michigan State
Detection rates of white-tailed deer in deciduous forest fragments



DANIEL BIRD
Ph.D. Student - U of Montana
Modeling migration and habitat use of elk in Montana



JESSIE GOLDING
Postdoctoral Fellow - U of Montana
Multi-species mesocarnivore monitoring



LANDON MAGEE
M.S. Student - U of Montana
Analyzing moose population dynamics on the Blackfoot Reservation, Montana



HAILEY BOONE
Ph.D. Student - Michigan State
Effects of introduced wolves on mammalian community ecology



CHRISTOPHER HANSEN
Postdoctoral Fellow - U of Montana
Conservation benefits of sustainable land use on mammal communities



MOLLY MCDEVITT
Ph.D. Student - U of Montana
Pronghorn movement and survival in Montana and South Dakota



CHARLIE BOOHER
M.S. & MPA student - U of Montana
Looking to the future of conservation: the role of hunting in wildlife policy



JORDAN HEIMAN
M.S. Student - U of Montana
Effective monitoring strategies for forest carnivores



DAN MORINA
Ph.D. Student - U of Montana
Ecology and management of elk in North Dakota



VAUGHAN BRANCH
M.S. Student - U of Montana
Management authority on federal lands and effective collaboration on habitat



NICK JAFFE
Ph.D. Student - Michigan State
Ecological and economic effects of wolf recolonization in the Lower Peninsula of Michigan



MATT NELSON
Ph.D. Student - Michigan State
Toward improved population estimates of gray wolves in Michigan



AMELIA CHRISTIAN
Ph.D. Student - Texas A&M
Metabolic constraints on carnivory in grizzly bears



JONATHAN KARLEN
MPA student - U of Montana
Species richness and bear occupancy after a recent mixed-severity wildfire in western Montana



WALDEMAR ORTIZ-CALO
M.S. Student - U of Montana
Evaluating white-tailed deer space-use relationships



SAMANTHA COURTNEY
M.S. Student - Michigan State
Quantifying factors affecting disease transmission in deer



ERIN KAVANAGH
M.S. Student - Texas A&M
Calls to Conservation



JAMSHID PARCHIZADEH
Ph.D. Student - Michigan State
Characterizing drivers of brown bear harvest to improve management on the Kodiak Archipelago



MADISON CRANE
M.S. Student - U of Montana
Resource selection as a contributor to movement ecology of pronghorn across Montana



CODY LANE
M.S. Student - U of Montana
Aspen treatment effects on wildlife



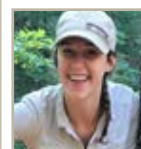
HUNTER PARKER
M.S. Student - Texas A&M
Calls to Conservation



CALVIN ELLIS
M.S. Student - TAMU - Kingsville
Mule Deer Spatial Ecology in the Texas Panhandle: Implications for Chronic Wasting Disease



DAN LI
Ph.D. Student - Michigan State
Advancing adaptive management of gray wolves in the western Great Lakes region



ELLEN PERO
Postdoctoral Fellow - U of Montana
Ecology and management of the restored elk population in Missouri



Since 1992 more than 100 Boone and Crockett Fellows have completed courses of study in wildlife conservation and related fields.

The Boone and Crockett Club's University Programs is among the most forward-looking educational programs for university students in any field. There are immediate payoffs because our fellows' research informs important wildlife management and policy issues of the day. However, the enduring legacy of the Club's University Programs is evident in the work our fellows complete during their professional careers. Thus, return on investment often occurs many years after a fellow graduates as they gain positions of leadership and influence in conservation. Fellows carry forward the conservation values, technical skills, and an ability to integrate science with policy that they learned during their time as a fellow.

2022 FELLOW VIDEO PROJECT

In 2021 B&C writer and content creator PJ DelHomme interviewed former fellows to hear, in their words, what this program meant to them. In 2022 we interviewed current fellows to include their perspectives as well. We want to understand how the Club impacts their career and how it influences their outlook on conservation. This video project is just one way to demonstrate the enduring legacy of the Boone and Crockett Club's University Programs.



SARAH SCHOOLER
Ph.D. Student - Michigan State
Effects of timber harvest, weather, and brown bear risk on Roosevelt elk on the Kodiak Archipelago



SEAN SULTAIRE
Postdoctoral Fellow - U of Montana
Estimating abundance of big game species in northern Nevada



AMBER SMITH
B.S. Student - U of Wisconsin-Stevens Point
Mercury Exposure in Migrating and Breeding Wood Ducks in Wisconsin



NOELLE THOMPSON
Ph.D. Student - Michigan State
Modeling white-tailed deer disease risk to determine cost-effective management techniques



LAUREN SNOBL
M.S. student - U of Montana
Effects of wildfire on elk habitat and distributions in the Blackfoot-Clearwater area, Montana



JONATHAN TRUDEAU
Ph.D. Student - Michigan State
Assessing drivers of spread and transmission of CWD in Michigan deer



ADIA SOVIE
Postdoctoral Fellow - Michigan State
Quantifying success of wolf introductions on Isle Royale National Park



MERIJN VAN DEN BOSCH
Ph.D. Student - Michigan State
Recolonization potential of gray wolves in the eastern United States



HANNAH SPECHT
Postdoctoral Fellow - U of Montana
Evaluation of survey approaches to assess status of non-game indicator species



HAYDEN WALKUSH
B.S. Student - U of Wisconsin-Stevens Point
Predicting fall harvest demographics of Eastern wild turkeys using Snapshot WI images



ANDI STEWART
Ph.D. Student - U of Montana
Carnivore impacts on elk populations in Montana



NATHANIEL WEHR
Ph.D. Student - Michigan State
Spatial and movement ecology of ungulates in relation to predators in the southern boreal forest



MIRANDA STRASBURG
Postdoctoral Fellow - Michigan State
The next frontier of CWD models in Michigan



ALEJANDRA ZUBIRIA PEREZ
Ph.D. Student - Michigan State
Anthropogenic effects on gray wolf demography in the western Great Lakes region



A complete listing of current and former fellows as well as the video can be found online.



2022 University Programs Accomplishments



SELECTED AWARDS

David Hewitt received the Sam Beasom Conservation Leadership Award from the Texas Wildlife Association.

Charlie Booher was awarded the 2022 Boone and Crockett Fellow Outstanding Achievement Award in Graduate Research.

SELECTED PEER-REVIEWED PUBLICATIONS

Benedict, B.M., and P.S. Barboza. 2022. Adverse effects of Diptera flies on northern ungulates: Rangifer, Alces, and Bison. *Mammal Review*. 1-12. doi:10.1111/mam.12287

Branch, J.V., J. F. Organ, C.J. Bishop, R.J. Regan, M. S. Mitchell, and J.J. Millspaugh. 2022. Echoes of 1937: Recovering America's Wildlife Act would bring wildlife conservation funding full circle. *Conservation Letters* 2022: e12890. <https://doi.org/10.1111/conl.12890>

Forsyth, D. M., S. Comte, N. E. Davis, A. J. Bengsen, S. D. Côté, **D.G. Hewitt**, N. Morellet, and A. Mysterud. 2022. Methodology matters when estimating deer abundance: a global systematic review and recommendations for improvements. *Journal of Wildlife Management* <https://doi.org/10.1002/jwmg.22207>.

Gantchoff, M.G., L. Conlee, M.R. Boudreau, R.B. Iglay, C. Anderson, and **J.L. Belant.** 2022. Spatially-explicit population modeling to predict large carnivore recovery and expansion. *Ecological Modelling*. 470:110033.

Gantchoff, M.G., L. Conlee, and **J.L. Belant.** 2022. The effectiveness of opportunistic public reports versus professional data to estimate large carnivore distribution. *Ecosphere* 13:e3938.

Hill, J.E., T.L. DeVault, and **J.L. Belant.** 2022. Comparative influence of anthropogenic landscape pressures on cause-specific mortality of mammals. *Perspectives in Ecology and Conservation* 20:38-44.

Hines, S. L., T. E. Fulbright, A. Ortega Santos, D. B. Wester, **D.G. Hewitt**, T. W. Boutton, T. Campbell. 2022. Quantifying herbivory in heterogeneous environments: Methodological considerations for more accurate metrics. *Journal of Arid Environments* 199. <https://doi.org/10.1016/j.jaridenv.2021.104698>

Johnson, H.E., E.A. Lenart, D.D. Gustine, L.G. Adams, and **P.S. Barboza.** 2022. Survival and Reproduction in Arctic Caribou are Associated with Summer Forage and Insect Harassment. *Frontiers in Ecology and Evolution*. 10.3389/fevo.2022.899585

Karlen, J. G., E. Covelli Metcalf, **J.J. Millspaugh.** 2022. Review of non-resident college student hunting license regulations in the U.S. *Journal of Wildlife Management*: 022;86:e22279. DOI: 10.1002/jwmg.22279

Kautz, T.M., N.L. Fowler, D.E. Beyer, Jr., J.F. Duquette, T.R. Petroelje, and **J.L. Belant.** 2022. White-tailed deer exploit temporal refuge from multi-predator and human risks on roads. *Ecology and Evolution* 12:e9125.

Lombardi, J. V., H. L. Perotto-Baldivieso, **D.G. Hewitt**, D. G. Scognamiglio, T. A. Campbell, M. E. Tewes. 2022. Assessment of appropriate species-specific time intervals to integrate GPS telemetry data in ecological niche models. *Ecological Informatics* 70 <https://doi.org/10.1016/j.ecoinf.2022.101701>.

Pero, E.M., M. C. Chitwood, A. M. Hildreth, B. J. Keller, L. K. Berman, J. A. Sumners, L. P. Hansen, J. L. Isabelle, L. S. Eggert, C. L. Titus, and J. J. Millspaugh. 2022. Acclimation of elk mating system following restoration to the Missouri Ozarks, U.S.A. *Restoration Ecology*: doi: 10.1111/rec.13623.

Shively, R.D. and **P.S. Barboza.** 2022. Monitoring diet by automated microhistology. *Wildlife Society Bulletin. Wildlife Society Bulletin*: 46(1): 1-10 doi:10.1002/wsb.1259

Snobl, L. A., K. M. Proffitt, and **J. J. Millspaugh.** 2022. Wildfire extends the shelf-life of elk nutritional resources regardless of fire severity. *Ecosphere* 2022:13:e4178. <https://doi.org/10.1002/ecs2.4178>

Specht, H., J.D. Golding, E. Pero, M. Crane, W. Ortiz-Caló, M. McDevitt, J. G. Karlen, J.V. Branch, and J.J. Millspaugh. 2022. A framework for evaluating the implications of assumptions in broad conservation strategies. *Conservation Science and Practice* 2022, 4:e12758. <https://doi.org/10.1111/csp2.12758>

Sultaire, S.M., Kawai-Harada, Y. Kimmel, A., Greeson E.M., Jackson, P.J., Contag, C.H., Lackey, C.W., Beckmann, J.P., Millspaugh, J.J., and Montgomery, R.A. 2022. Variation in black bear density and habitat use across the Sierra Nevada to Great Basin Desert transition in western Nevada. *Journal of Wildlife Management*: In press.

van den Bosch, M., D.E. Beyer, Jr., J.D. Erb, M.G. Gantchoff, K.F. Kellner, D.M. MacFarland, D.C. Norton, B.R. Patterson, J.L. Price Tack, B.J. Roell, and **J.L. Belant.** 2022. Identifying potential gray wolf habitat and connectivity in the eastern USA. *Biological Conservation* 273:109708.

SELECTED BOOKS AND BOOK CHAPTERS

Do Linh San, E., J.J. Sato, **J.L. Belant**, and M.J. Somers, editors. Small carnivore evolution, ecology, behaviour and conservation. Wiley-Blackwell, Oxford, UK 602pp.

SELECTED POPULAR ARTICLES

Heffelfinger, L.J. 2022. Are Center Pivots Pivotal for Mule Deer in the Southern Great Plains? The Mule Deer Foundation Magazine. Spring 2022 Issue.

Heffelfinger, L.J., R. L. Reitz, D. G. Pfeffer, R. W. DeYoung, D.G. Hewitt, and D. B. Wester. 2022. Small Yet Still Productive: The Influence of Dietary Energy on Deer Size, Antlers, and Reproduction. *Caesar Kleberg Tracks Magazine*. Fall 2022 Issue.

COURSES TAUGHT BY B&C PROFESSORS

Master of Public Service and
Administration Consulting Capstone
(PSAA675 & PSAA676) – two semester
graduate project advised with Dr.
Cole Blease Graham in Bush School of
Government, Texas A&M University.
P.S. Barboza

Fish and Wildlife Laws and
Administration. (WFSC303/RWFM 308)
Texas A&M University. **P.S. Barboza**

WILD 491–Wild Sustenance,
undergraduate, Fall 2022
J.J. Millspaugh

WILD 595–Models of Wildlife
Conservation, graduate students,
spring 2022 **J.J. Millspaugh**

SELECTED OUTREACH AND PROFESSIONAL ACTIVITIES

Institutional Animal Care and Use
Committee, Texas A&M University:
P.S. Barboza

International Union for Conservation of
Nature Sustainable Use and Livelihoods
Group: **J. Belant**

Michigan State University, Department
of Fisheries and Wildlife, Diversity,
Equity, and Inclusion Committee:
J. Belant

Rocky Mountain Elk Foundation
National Science Advisory Group and
Montana Project Advisory Committee:
J. Millspaugh

Texas Parks and Wildlife Department
Chronic Wasting Disease Task Force:
D. Hewitt

Texas Parks and Wildlife Department
Private Lands Advisory Committee:
D. Hewitt

Texas Parks and Wildlife Department
White-tailed Deer Advisory Committee:
D.G. Hewitt

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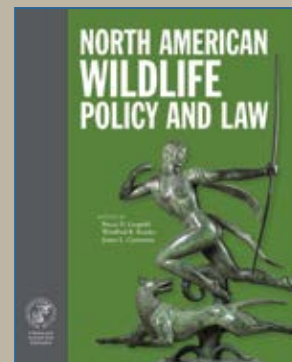
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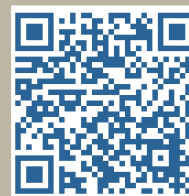


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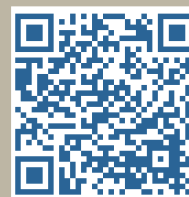
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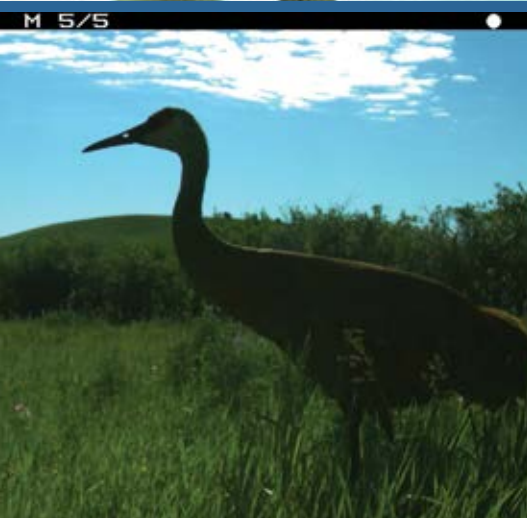


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