



CCSS

Center for Conservation
Social Sciences

ANNUAL REPORT 2021

FEATURED TOPICS:

Environmental Justice in
Conservation Practice

Managing Human-wildlife Conflicts
from the Catskills to Nepal

Hands-on Learning for
Environmental Policy

Encouraging Climate-adapted
Forestry

Preparing CCSS Alumni for Diverse
Career Paths



Cornell University

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ANNUAL REPORT 2021

PURPOSE OF REPORT

This 2021 annual report provides an overview of recent research, teaching, and outreach activities of the CCSS. The report reflects the work, interests, and capabilities of the CCSS. Publications listed in this report and additional information about the CCSS may be found on the CCSS website: <https://ccss.dnr.cals.cornell.edu> or by email at ccss@cornell.edu.

Center for Conservation Social Sciences
Department of Natural Resources and

the Environment
College of Agriculture and Life Sciences
Cornell University

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INTRODUCTION

The Cornell Center for Conservation Social Sciences (CCSS) strives to expand the understanding of academicians, students, natural resources agencies, non-governmental organizations, and policy makers about the interactions of social and ecological systems. We apply theory and empirical findings to address practical, complex, contemporary challenges related to natural resources and the environment. Our research outcomes include empirical data, conceptual frameworks, and theoretical insights. We report our scholarship at conferences, in peer-reviewed journals, books, policy briefs, and outreach publications. CCSS research is used by a wide array of decision makers and natural resource practitioners, especially those in state and federal agencies, to develop, implement, and evaluate environmental policies and management approaches.



The CCSS has earned an international reputation in conservation social sciences. The oldest unit of its kind, the CCSS's history dates from the early 1970's. Partnerships with natural resource agencies, particularly a collaboration of over 40 years with the NYS Department of Environmental Conservation's Division of Fish, Wildlife, and Marine Resources and several long-standing collaborations with other federal and state partners greatly enhance the impact of the CCSS.

In addition to research and publications by CCSS faculty, staff, and students, teaching and outreach are important functions contributing to the missions of the Department of Natural Resources and the Environment and the College of Agriculture and Life Sciences. CCSS faculty advise undergraduate and graduate students, oversee internship and experiential learning programs, and teach courses concerning various aspects of the environment including sociology, policy, planning, and environmental justice. CCSS faculty and academic staff also engage in outreach and Extension through which we serve citizens of New York State and beyond, effecting positive change in conservation and environmental management practices.

CCSS AFFILIATIONS

The CCSS comprises core and affiliate faculty, staff, and graduate and undergraduate students. Research and outreach programs are supported by grants and contracts from federal and state agencies, non-governmental organizations, foundations, Cornell Cooperative Extension, and the Cornell University Agricultural Experiment Station. During 2021, CCSS faculty, staff, and graduate students were PIs or co-PIs on 27 awards representing more than \$15 million in funding over the course of the projects.

CCSS graduate faculty hold membership in the graduate fields of Natural Resources, Development Sociology, Public Affairs, and Global Development. In 2021, graduate faculty committee members for CCSS graduate students came from a variety of departments, centers, and schools: Africana Studies and Research Center, Anthropology, Communication, Dyson School of Applied Economics and Management, Literatures in English, Natural Resources and the Environment, Public and Ecosystem Health, and others.

CCSS AT A GLANCE

In 2021 CCSS had:

32 Peer-reviewed Publications

19 Other Publications

5 Core Faculty

7 Affiliated Faculty

9 Staff

15 Graduate Students

5 Undergraduate Researchers and Interns

6 Course Offerings

FEATURED STORIES

The stories in this section highlight five ongoing areas of CCSS work and their impacts.



Image courtesy of Pete Nuij on Unsplash



FEATURED STORY

ENVIRONMENTAL JUSTICE IN CONSERVATION PRACTICE

In 1920, Black farmers owned 41.4 million acres of land in the Southern United States. By 2017, Black-owned land had dropped by almost 90 percent, to 4.7 million acres. The loss was the result of generations of racist government policies, private practices, and terrorism against Black landowners.

“Many people believe that lynchings happened as a result of what was perceived as Black men engaging in inappropriate behavior with white women. In actuality, a lot of it was over land,” said CCSS Professor Shorna Allred. “During the period of the Great Migration, Black people experienced widespread land dispossession at a similar scale to what Native Americans experienced.”

Allred seeks to understand how policies and practices can work toward or against environmental justice. Through research, teaching, and extension, she is exploring the social dimensions of natural resource conservation and management, including how those dimensions impact marginalized communities. In the past year, she has co-developed a new course, Environmental Justice and Policy, co-authored an article on overcoming racism in conservation science and practice, and is working to improve extension and outreach to Black landowners in the Northeast.

OVERCOMING RACISM IN CONSERVATION SCIENCE AND PRACTICE

Conservation science and practice are critically important to preserving natural resources and the humans who rely on them, but these fields are also plagued by deep-seated systemic racism that overwhelmingly harms Black, Indigenous, and People of Color (BIPOC) communities, Allred argued in a peer-

reviewed article published in November 2021.

“Overcoming racism in the twin spheres of conservation science and practice” was authored by Allred and co-authors from 18 institutions on five continents and published in the Proceedings of the Royal Society B.

“Many of us on the paper represent very diverse identities and career stages; we felt it was important to tell this story in our own voices about what we can do to improve conservation practices,” Allred said.

There are dozens of examples of conservation policies and practices that disproportionately harm poor and marginalized communities, Allred said. As one example, she cited work being done by CCSS Ph.D. student Aalayna Green, who is studying African women’s perspectives on wildlife crime and anti-poaching laws. While much of the public attention on anti-poaching efforts centers on high-profile killings like Cecil the Lion, most of the actual impact of these laws falls on low-income people hunting small game for subsistence. Green is studying how anti-poaching laws in Africa affect families, especially the women and children who are left behind when men are jailed for poaching.

“My research is situated under the umbrella of ‘conservation justice,’ which serves as a means of abolishing the dimensions of conservation which routinely target marginalized communities to preserve species which are deemed more important than the marginalized communities themselves,” Green said. “The practicing of just conservation allows for the emotional, physical, and spiritual needs of the community to be addressed in tandem with the needs of the species of conservation interest.”

Allred and her co-authors advocate for inclusive conservation practices that value the needs and knowledge of local communities, and for building partnerships across interest groups. One example of an effective and ethical conservation practice is the partnership between the Albany Pine Bush Preserve (a wildlife preserve home to rare species including the federally endangered Karner blue butterfly) and the nearby Rapp Road Historical Association (a non-profit focused on preserving historic homes in an Albany neighborhood that became a beacon for African Americans fleeing the South during the Great Migration), she said.

“These groups are working together to preserve both the cultural and ecological history of that area,” Allred said.

SUPPORTING BLACK LANDOWNERS IN THE NORTHEAST

Systemic racism against Black landowners in the South has been extensive and long-lasting, but far less is known about the challenges of Black rural land ownership in the Northeast. During the Great Migration (roughly 1910-1970), when Jim Crow violence forced millions of Black southerners to move north, they overwhelmingly settled in cities, where they could find jobs and community support. The effects of this pattern still reverberate today: Black landowners represent only 1 percent of private forestland owners in the Northeast.

“Land is one of the most important forms of power in a community,” Allred said. “Land ownership gives you a stronger voice in the future of your community. It signifies autonomy, independence, stability of ownership, and an intergenerational wealth resource.”

In order to understand the specific needs and challenges of Black landowners in the Northeast, Allred and colleagues from the University of Massachusetts are interviewing them and compiling their stories. Their purpose is to counter stereotypes with real experiences, and to improve outreach support services from cooperative extension, land trusts, and other natural resource professionals. A new website on the project, “Stories of Black Rural Land Stewardship and Legacy in the Northeast” is available at: rural.as.cornell.edu/rural-black-land-stewardship. They hope to build on and expand this pilot project to include all minority forest owners in the future.

Many of the rural landowners have addressed the stereotype that Black people prefer to live in urban areas, countering it with their own experiences enjoying horseback riding, farming, hunting, and seeing wildlife.

“The landowners had a lot of pride in the rural identity, rural landscapes, and stewarding their land – that’s also the story of Black Americans,” Allred said.

ENVIRONMENTAL JUSTICE AND POLICY

Allred has been weaving environmental justice topics into her teaching for years, first with Toxic Inequality, a one-credit Learning Where You Live course focused on environmental justice starting in spring 2020, co-taught with Professor Jamila Michener in the Department of Government. The enthusiastic student response to the class led Allred to co-develop a new course, Environmental Justice and Policy, with Rebecca Morgenstern Brenner, lecturer in the Cornell Institute for Public Affairs. The three-credit course was offered for the first time in spring 2022.

The course helps illustrate the maxim: “a person’s zip code is the most prominent determinant of their health,” coined by Texas Southern University Professor Robert Bullard, considered the “father of environmental justice,” Allred said. For example, students learn about Uniontown, Alabama, a predominantly Black community that has been forced to house a variety of environmental hazardous wastes. In spite of determined community opposition and clear scientific evidence of the dangers being forced upon Uniontown, government officials and developers continue to greenlight projects that bring more hazards to the town.

Allred hopes the course will give students a new lens through which to examine all of their studies, and tools to help advocate for more just environmental practices. Brenner’s expertise is in using policy and institutions to undo systemic environmental injustices. She spent the first half of her career implementing environmental policy through the National Environmental Policy Act, the National Historic Preservation Act and other state and federal legislation. The interdisciplinary course taught by two women provides students with unique context and perspective.

“We’re modeling a concept of interdisciplinary cooperation that I hope students will take with them into their own careers and lives,” Allred said.

A new website on the project, “Stories of Black Rural Land Stewardship and Legacy in the Northeast” is available at: rural.as.cornell.edu/rural-black-land-stewardship



FEATURED STORY

MANAGING HUMAN-WILDLIFE CONFLICTS FROM THE CATSKILLS TO NEPAL

Image courtesy of Shashank Poudel

In any conservation plan, managing human-wildlife conflicts is important, but for large predator species, managing these conflicts is crucial for the long-term success of the animal species and for the safety and wellbeing of human communities.

From black bears in upstate New York to leopards in Nepal, CCSS researchers are working to manage conflicts to support conservation of animal species while protecting the lives and livelihoods of the humans who share their habitats.

LEOPARDS

The central Himalayan country of Nepal is home to extraordinarily high levels of biodiversity. While its proportion of global landmass is less than 0.01%, Nepal hosts 8% of the world's mammal species and 8.6% of its birds. Some of the species that come into conflict with humans in Nepal include elephants, rhinoceroses, Bengal tigers, snow leopards, and common leopards (*Panthera pardus*).

The government of Nepal has adopted conservation plans to preserve tigers and snow leopards, but there is no equivalent plan for common leopards; in fact, the success of Nepal's conservation efforts for tigers has driven leopards further from forests and into human habitations, leading to deadly conflicts, said Shashank Poudel, a Ph.D. student advised by Rich Stedman, Professor and Chair in the Department of Natural Resources and the Environment (DNRE) and Associate Director of CCSS. One study estimates that, on average, 55 people each year are killed by leopards in Nepal – a death rate higher than any other country.

“It has become a serious concern, for management, ecology, and human safety,” said Poudel, who is from Nepal and has spent the past six years working to address human-wildlife interactions in the country. “Tigers receive far more attention, though leopards are also ecologically important and cause more human conflicts.”

Poudel, Stedman, Angela Fuller, Associate Professor in DNRE and leader of the US Fish and Wildlife Service Coop Unit, which is housed in DNRE, Martin Gilbert, Associate Professor of Practice in the College of Veterinary Medicine, along with Nepali partners, are undertaking an interdisciplinary project to investigate the causes and impacts of human-leopard conflicts, and to recommend sustainable, site-specific management responses.

The first element of their project was conducting an occupancy survey to determine leopard distribution over a 7,000-square-kilometer area. Poudel has studied scratch marks and paw prints, and he's collected roughly 100 leopard scat samples to estimate leopard range and density. Next, the researchers will undertake camera trapping (a camera equipped with a motion sensor that can capture animal movements) and analyze the leopard scat to learn more about the animals' diets.

“People are very aware of the dangers of leopards, but less aware of the benefits of this species,” Poudel said. “Nepal is also ranked very high in dog bites and rabies cases. By analyzing leopard scat, we can understand how much leopards are preying on feral dogs, pigs, and monkeys, and we can use that information to quantify how much leopards contribute to feral species control and benefit public health.”

The next stage of the project will involve household surveys in areas with high leopard conflicts. Respondents will be asked about their lifestyles and livelihoods, and how they perceive risks and potential benefits of leopards. The researchers hope to learn what social, cultural, and economic factors affect vulnerability to leopard attacks. Potential sources of danger and conflict-mitigation efforts could include poorly built livestock fencing that attracts leopards to human settlements, toilets placed far away from homes in dark or forested areas, and people going alone to collect wood and other forest resources.

Stedman emphasizes the need to understand why people behave the way they do: do they perceive low risk, or face barriers to action?

“There’s no magic bullet when it comes to conservation of predators like leopards in landscapes that have people in them,” Stedman said. “We need to understand the full range of ecological factors and human factors that come together to produce conflict or to ameliorate conflict. Reducing those sorts of conflicts is not just good for people, it’s also good for leopards.”

BLACK BEARS

Upstate New York is home to 6,000-8,000 black bears, a number that has increased dramatically since 50 years ago. New Yorkers remain generally supportive of the larger bear population, but managing human-bear conflicts is key to maintaining that support, preserving the species, and protecting humans, said Bruce Lauber, CCSS Director and Senior Research Associate in DNRE. CCSS researchers have worked in concert with the New York State Department of Environmental Conservation since the 1970s to understand public attitudes about bears, and to help inform bear management decisions.

DEC developed a statewide bear management plan for 2014-2024, and the state agency is now working to develop a plan for 2024-2034. To support that effort, CCSS researchers carried out mail surveys in the fall of 2018 and received over 4,000 completed questionnaires from New York property owners, providing insight on public tolerance for bears, public preference for future bear populations statewide and in respondents’ local areas, experiences with bear impacts, and willingness to take steps to prevent problem interactions with bears. The surveys found overwhelming acceptance of bears across New York State, with some hot spots in the Catskills, Adirondacks, and Westchester, where people would prefer fewer bears.



Leopard paw prints in Nepal. Photo courtesy of Shashank Poudel.

“It takes a bit to exceed people’s tolerance for bears, because people seem to like them even when they cause problems,” Lauber said.

Black bears rarely attack humans – in the past 20 years, black bears have killed an estimated 25 people in North America, one in New York (the only black bear-caused fatality ever documented in New York). But black bears can cause other problems, including attacking domestic pets, and causing agricultural and property damage in search of food.

Bears also provide value to New Yorkers, including for hunting and wildlife viewing, and even those who experience occasional conflicts with bears, like farmers, still remain generally supportive of the species, said Bill Siemer, CCSS Research Associate.

“What we’ve seen most consistently in our stakeholder engagement is that bears have intrinsic value – people really appreciate knowing that bears exist as part of our ecosystem and that future generations will get to enjoy living in a state that has bears,” Siemer said.

CCSS research may influence DEC policy in a variety of ways, Lauber said, including changes in bear hunting regulations or informing educational campaigns on how to minimize human-bear conflicts.

“Whether you’re working with bears in the Catskills or leopards in Nepal, if you’re going to manage these conflicts successfully, you have to understand people,” Lauber said. “It’s easy to make assumptions about whether something is a problem or not – but problems are socially defined. If the state wants to make effective decisions, it needs to understand social perceptions.”

If you’re going to manage these conflicts successfully, you have to understand people.



Image courtesy of Congresswoman Melanie Stansbury

Melanie Stansbury M.S. '07 came to Cornell intending to earn her Ph.D. in development sociology, with a focus on the governance of water and resolving policy conflicts around tribal and indigenous water rights. One impactful course influenced the trajectory of her career: Environmental Policy Processes (NTRES 4300). The year-long course includes traditional classroom learning in fall and spring, and a 12-day January component where students live together in Washington, DC and meet, interview, and learn from policymakers, agency staffers, and non-governmental organizations.

Now a Congresswoman representing New Mexico's 1st Congressional District, Stansbury is writing legislation that focuses on the nexus between science, economic development, community wellbeing, and environmental sustainability.

"I ended up in government because of that class," she said. "It gave me the opportunity to talk with people who worked on the Hill, who worked in the White House, who were in the agencies. It was literally that class that got me interested in actually going into public policy work. Many of the connections I made through that class continue to be professional connections and colleagues and mentors who I still work with today."

Faculty in the Center for Conservation Social Sciences have been teaching the Environmental Policy Processes course for 35 years, opening career pathways for students and helping them learn how to effectively influence federal environmental policy.

NAVIGATING THE POLICY ENVIRONMENT

Barbara Knuth, Associate Director of CCSS and Professor in

the Department of Natural Resources and the Environment (DNRE), co-developed the course first offered in 1987, with colleagues Bruce Wilkins and Richard McNeil, both late emeritus professors of natural resources.

"Knowing how to navigate the policy environment – how to influence policy and how to identify the important actors in the policy process – is really important to be an effective professional in the natural resource and environmental management world," Knuth said.

Students enroll in a fall semester course where they are introduced to public policy processes and actors and prepare for an immersive experience in Washington DC. During the January intersession, students and faculty stay at the Cornell Wolpe Center on Dupont Circle where they examine case studies on topics such as Arctic Ocean offshore oil drilling, coal ash disposal, and clean water policy. They learn from panels of professionals involved in environmental policy, including congressional staff, agency scientists, industry and business representatives, and environmental advocates. Students conduct interviews and do research on a policy brief of their choice, such as indigenous land claims, endangered species, high-speed rail, or shale gas drilling.

"Many students who take this course have never been to Washington, DC, and have never conducted an interview and they frequently feel nervous at first about talking with professionals," Knuth said. "But when they come back from doing these interviews, they'll say, 'the interview went for two hours and they took me out to lunch afterwards.' The students really get immersed and excited. The policy person gets excited by all the questions and enthusiasm the student is bringing and the student

gets exposed to so many different ideas and career possibilities. It really has been a life-changing experience for many students, and the personal interactions are such a rich element of the course.”

The course is now taught by Bruce Lauber Ph.D. ‘96, CCSS Director and Senior Research Associate in DNRE, and Cliff Kraft ‘75, Professor in DNRE.

CULTIVATING NETWORKS

Rachel Erlebacher ‘16 took the course while completing her degree in Environmental and Sustainability Sciences. Now a professional staff member for the Senate Appropriations Committee, Erlebacher oversees funding requests on agriculture, rural development, and the Food and Drug Administration, among others.

“It was daunting to cold contact people and ask for interviews for my policy brief; I felt like, ‘I’m just this undergrad student and I don’t want to burden you with this.’ But Bruce and Cliff told us that professionals love talking about what they do, they’re passionate about it, so they’ll usually enjoy talking with you,” Erlebacher said. “And now that I am a professional working in government, that is exactly how I feel. I enjoy talking with the students and helping them figure out their own paths. I remember that feeling of being really appreciative of people talking with me and helping me navigate the networking world, so I’m happy to be able to do that for students now.”

Grace Tucker ‘17 took the course as part of her major in Environmental and Sustainability Sciences. Now a senior analyst for the Environmental Defense Fund (EDF), Tucker works to support climate-resilient coasts and watersheds.

“The in-D.C. component of the course definitely made me more comfortable moving to D.C. when I got an internship there later. It was a great way to sort of dip my toe into the Washington world,” Tucker said. “There’s so much living history in D.C., and being surrounded by the buildings – all the museums, the Capitol and other federal agencies – is a really cool experience.”

While in Washington, CCSS faculty host an alumni reception where past and current students can meet and network. Those receptions continue to benefit Cornellians, years after they’ve taken the course, Tucker said.

“I think those events are just as helpful for alumni as they are for students; you may meet someone who’s working on the same

legislation you are, or you can get advice on job openings or job application tips,” Tucker said. “And everyone loves to give back and help current students.”

VALUING MULTIPLE PERSPECTIVES

Richard Benware ‘06, MPA ‘08, took the course while completing his dual majors in Biology and Applied Economics and Management. He did his policy brief on PCB contamination in the Hudson River – an issue of great importance in his hometown of Queensbury, NY.

“Where I grew up, you would see billboards saying either ‘GE is trying to kill you,’ or ‘the EPA is trying to kill you,’ depending on who put it up,” Benware said.

The environmental policy course enabled Benware to learn in depth from the perspectives of many actors in policy debates, and to see that people with very different political identities and values were sincere in their beliefs and working in good faith,

he said. That lesson has continued to serve him in his work with the EPA, where he is now an Environmental Protection Specialist working on issues like regulating pollution from coal-fired power plants.

“Part of the deal in working for a political agency is that important policies you’ve spent a long time working on can go back and forth with changes in administration. That can sometimes be frustrating,” Benware said. “But if you do your homework, and you give political appointees the benefit of the doubt, most of the time they will listen to you.”

“Our alumni are fantastic and this program wouldn’t work without their support,” Lauber said. “This course is so beneficial for our students. I think it gives them a better sense than we ever could on campus of how environmental policymaking works in the real world.”

I ended up in government because of that class.



Left: Rachel Erlebacher ‘16 in her role as a professional staff member for the Senate Appropriations Committee | Right: Richard Benware ‘06, MPA ‘08, is now Environmental Protection Specialist with the USEPA.



FEATURED STORY

ENCOURAGING CLIMATE-ADAPTED FORESTRY

Photo by Dmitry Zvoloskiy on Unsplash

New York State has 1.6 million acres of abandoned farmland potentially available for hosting renewable energy infrastructure, reforestation, or agriculture. Many of these lands are filled with invasive weeds like buckthorn, multiflora rose, and honeysuckle. Reforestation with native species could provide benefits to landowners, wildlife, and climate, because mature forest sequesters far more carbon than brushland or early successional forest.

The vast majority of those acres is owned by private landowners, so understanding the goals and motivations of those people is critical in achieving statewide land management objectives. Rich Stedman, Professor and Chair of the Department of Natural Resources and the Environment (DNRE) and Associate Director of CCSS, and Nancy Connelly, Research Support Specialist with CCSS, recently surveyed New York landowners to learn more about their desires, values, and intentions for their land. They also asked about beliefs around climate change and what kind of incentives or barriers might encourage or dissuade their participation in a variety of reforestation practices.

“We’re interested in understanding the ultimate capacity of New York state forests to help with carbon storage, in the service of reducing carbon emissions and combating climate change,” Stedman said. “You can know exactly how many thousands of acres are out there, potentially available, but none of that will mean much if landowners don’t want to do this. Our goal is to see how much landowners are willing to engage with projects like reforestation or renewable energy.”

SURVEY FINDINGS

Last year, Connelly and Stedman sent surveys to 3,500 landowners in 15 counties in New York’s Southern Tier and St. Lawrence valley (both areas with large numbers of abandoned farms). People who owned at least 20 acres in those counties were chosen randomly, and roughly 30% responded. Some of the survey findings were:

- 76% of respondents were men and 24% were women. Average age of respondents was 65 years.
- The majority of respondents identified their political leaning as somewhat or very conservative.
- 64.8% of respondents slightly or strongly agreed with the statement “Climate change is a serious problem that requires immediate action.”
- Only 18.8% of respondents agreed with the statement “People’s needs should take priority over conservation of the land.”

The survey also asked respondents about their willingness to consider converting any part of their lands to other uses. By far, respondents were most interested in improving wildlife habitat:

- 83.8% of respondents were moderately or very interested in improving wildlife habitat on their land
- 64% were interested in growing more mature forest for carbon sequestration
- 39.6% were interested in hosting solar energy infrastructure
- 35.5% were interested in wind energy production

When asked about what factors might discourage them from converting any of their land to mature forests, the biggest barriers were lack of labor to do the work and potential costs. Further, 44% of respondents were very concerned about the possibility of restrictions being placed on their forest management or timber harvest options.

MULTIDISCIPLINARY PARTNERSHIPS

Stedman and Connelly’s social science work is just one part of a larger, multidisciplinary project being carried out in partnership with the Climate & Applied Forest Research Institute (CAFRI), an initiative of the SUNY College of Environmental Science and Forestry (ESF) to provide science-based solutions to address climate change. Other partners study renewable energy, climate-related forestry, forest health, and forest products. The collaboration has been supported with funding from the New York State Department of Agriculture and Markets, Southern Tier Agriculture Enhancement Fund.

“Barriers to academic collaboration are too often used as excuses that hinder multi-disciplinary work focused on solving real-world challenges,” said Julie Suarez, Associate Dean for Land Grant Affairs for Cornell’s College of Agriculture and Life Sciences (CALs). “This institute leverages the best strengths of two incredible New York State educational institutions: SUNY ESF and Cornell CALs. From practical solutions to forest regeneration, modeling forest carbon sequestration potential, to new ways to add economic value to wood, the CAFRI collaboration is achieving real results for New York’s foresters and landowners.”

Stedman hopes the project will help shed light on the larger dialogue around land use planning in New York, especially for this kind of shrubland, which is a target for many competing interests.



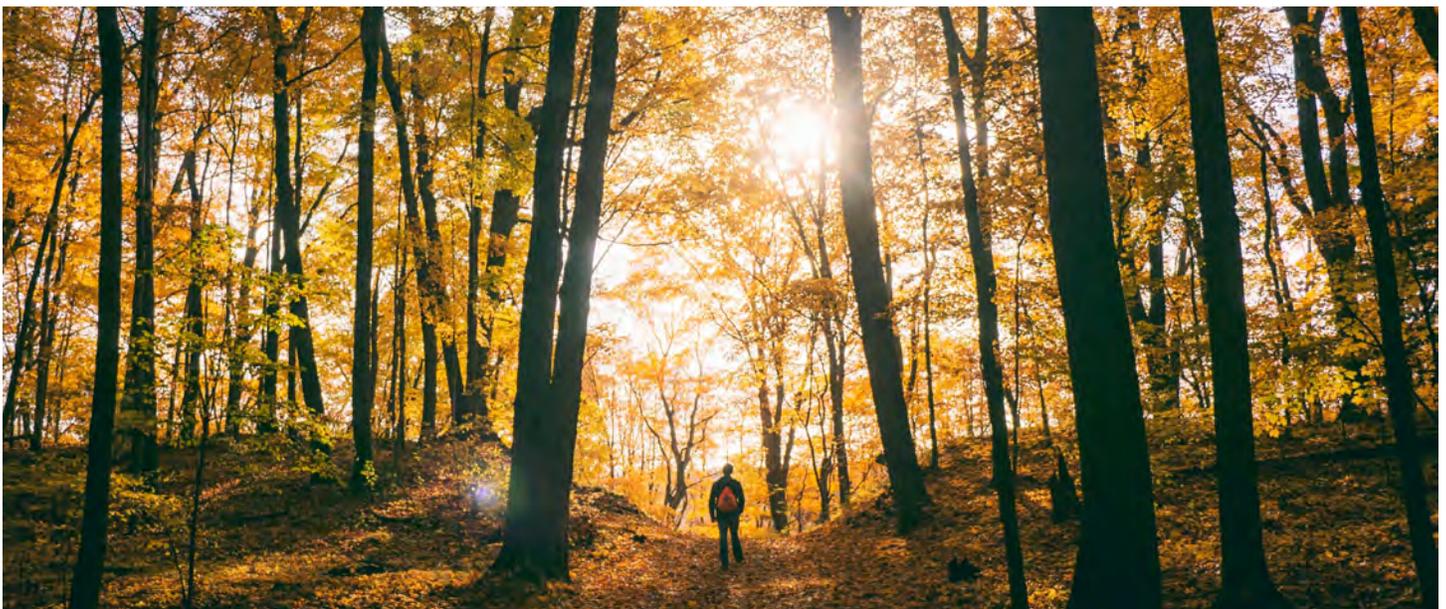
Photo by Andres Siimon on Unsplash

“The foresters say, ‘this shrubland is not sequestering as much carbon as it could be – this should be forest.’ But then the large-scale solar and wind folks look at the same land and say, ‘this is where renewable energy installations should go, because we want to keep it off prime agricultural land.’ And then the state Department of Environmental Conservation says, ‘actually, early successional forest is an important habitat for many species, so it should be maintained as this type of habitat’” Stedman said. “It becomes a shell game of what should happen to this type of land?”

Once survey analysis and other project components are complete, the researchers plan to write outreach publications, including policy recommendations that take into account the relative importance of barriers and incentives to landowner participation in reforestation, with guidance on what kinds of incentives are likely to appeal to what kinds of landowners.

New York State has 1.6 million acres of abandoned farmland potentially available for hosting renewable energy infrastructure, reforestation, or agriculture.

Photo by Aaron Burden on Unsplash





FEATURED STORY

PREPARING CCSS ALUMNI FOR DIVERSE CAREER PATHS

From left to right: Santi Saypanya PhD '18, Heidi Kretser PhD '08, Darrick Evensen MS '10, PhD '14, Meredith Gore PhD '06

For 50 years, the CCSS has been preparing graduate students for a variety of career paths, providing a foundation that enables alumni to work in non-profit organizations, government, industry, and academia. This inclusive training has become even more important as the proportion of available tenure-track academic positions continues to fall, in comparison to the number of doctoral degrees awarded nationally – since 2017, private sector employment of people with Ph.D.'s has outpaced employment in academia. In social sciences, only roughly 30 percent of Ph.D. holders work in tenure-track academic positions.

Barbara Knuth, Associate Director of CCSS and Professor in the Department of Natural Resources and the Environment (DNRE), has been a national advocate for both transparency in data on graduate program success indicators, and for the need to prepare graduate students for diverse career paths.

“CCSS has been preparing our students for various possible career paths since our unit was created,” Knuth said. “An essential element of a Ph.D. student’s research and education in our program is contextualizing their scholarship to address real-world problems while situating their scholarship in appropriate theoretical frameworks to advance knowledge. Thus, our Ph.D. students become expert in an academic field, as well as adept and effective in working with key stakeholders, including resource managers at various levels of government, community-based groups, non-government organizations, and other sectors, to address current and emerging conservation and environmental challenges.”

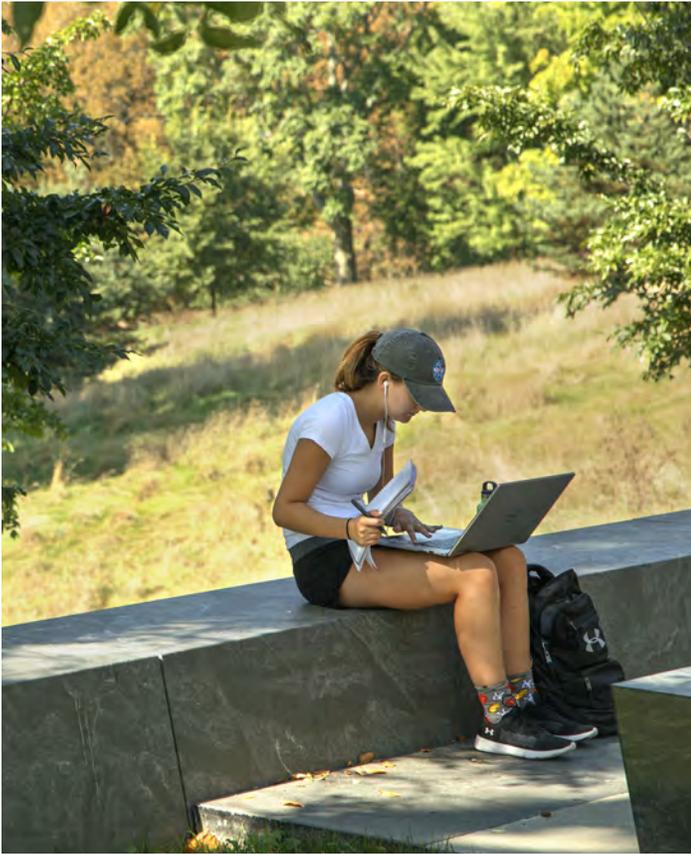
FINDING OPPORTUNITIES TO MAKE A DIFFERENCE

Heidi Kretser '95 Ph.D. '08 is a Senior Conservation Social Scientist with the non-governmental organization the Wildlife Conservation Society (WCS). Kretser’s role in WCS’ Global Conservation Program involves determining how people are interacting with natural resources, and understanding how to reduce negative impacts on resources while ensuring that conservation programs minimize harm to vulnerable communities.

I think being part of this group really does bind these students together and give them a sense of identity and an assurance that they can turn to each other, not just for feedback but for social support.

In one project, in the western Indian Ocean off the coast of Kenya and Tanzania, WCS is working to address over-fishing by establishing locally managed marine areas. Fishing restrictions, such as enacting quotas or establishing boundaries where no fishing is allowed, can provide long-term benefit to ecosystems and human communities by ensuring future fish supplies. But such regulations can also cause immediate harm to people who rely on fish for nutrition and livelihoods.

“My role is to support field staff to have conversations with the communities about who benefits from these decisions and who is negatively impacted, and to help



© Cornell Photo Library

structure activities to minimize negative impacts on vulnerable communities,” Kretser said.

Kretser pursued her Ph.D. through the CCSS, not intending to go into academia; working at WCS after her undergraduate, she said it became clear that a Ph.D. would aid her existing career path, and provide her with more methodological tools to address challenging conservation issues.

“Rather than focusing exclusively on where they want to get a job, I encourage graduate students to think about what skills they want to build and what kind of difference they want to make, because there are all sorts of opportunities for people with Ph.D.s to make a difference beyond academia,” she said.

Santi Saypanya Ph.D. ‘18 also works for WCS, as the Country Program Director for Laos. WCS serves as the technical partner to the government of Laos for the management of the country’s national parks, national protected areas, and conservation areas. Saypanya’s work ranges from supporting local, grassroots conservation activities to helping develop national policies.

For his Ph.D. research, Saypanya studied behaviors of communities in Nam Et – Phou Louey National Park in Laos around illegal hunting, and why people

may or may not report poaching to law enforcement agencies.

Saypanya’s work involved pre-surveying communities, then conducting a variety of

educational campaigns designed to inform people about poaching laws and potential consequences. A post-survey captured changes in knowledge, attitudes and intentions. Saypanya was surprised to discover that after learning more, residents actually became less inclined to report poaching, because they feared retribution from neighbors and hunters.

“The most important thing I took from my research is that people’s fears, motivations, and relationships impact their conservation behaviors more than anything else,” he said. “If we’re going to design effective policies, we have to understand the many factors that influence human behavior.”

Like Kretser, Saypanya pursued his Ph.D. with no intention of moving into academia. He found his graduate program so useful, he has encouraged and supported two of his colleagues to seek graduate degrees, as well.

“I’ve realized that earning my Ph.D. was really the beginning of my journey. It taught me how to think systematically and how to apply academic knowledge to situations on the ground, which is useful to me every day,” he said.

CARING, ENCOURAGEMENT, AND CRITICAL THINKING

Darrick Evensen M.S. ‘10 Ph.D. ‘14 is an assistant professor in environmental politics at the University of Edinburgh. Evensen co-directs an interdisciplinary master’s program in global environment, politics and society, and he teaches and conducts research on environmental risk perception and communication.

His master’s program research in the CCSS involved working closely with the National Park Service to study risk perception about zoonotic diseases, such as avian flu, Lyme disease, and pneumonic plague. For his doctorate, Evensen studied community risk perceptions around hydraulic fracturing for natural gas in New York, Pennsylvania, and New Brunswick, Canada.

“Being able to do research in collaboration with

... people’s fears, motivations, and relationships impact their conservation behaviors more than anything else...

stakeholders like the National Park Service and seeing the real-world implications of your work was a wonderful experience and one that I don't think many graduate students receive," Evensen said.

The most important things Evensen gained from his time in the CCSS were critical thinking skills, caring, and encouragement.

"The faculty and experiences definitely did prepare me for an academic career, but there was nothing about that preparation that was exclusive to academia; they were things that prepare you to do well in life, especially creating a caring environment – it was an extremely supportive faculty," Evensen said. "The CCSS student group also provided peer-to-peer learning, which adds something and fills a different need than the faculty support. That experience profoundly influenced the way I mentor my own students today."

Meredith Gore Ph.D. '06, an associate professor in the Department of Geographical Sciences at the University of Maryland, also emphasized the caring, supportive environment the CCSS creates for its graduate students as key to its alumni's success.

For her doctoral research, Gore studied human-black bear conflicts in New York and New Jersey, and was present during New Jersey's first bear hunt in 30 years. Now, she researches wildlife crime, and just returned

from Zambia where she attended a Lusaka Agreement Task Force meeting and presented on social science around wildlife crime.

"During my Ph.D. research, I was walking back and forth between pro- and anti-hunting protestors and police, trying to understand the motivations of all of these stakeholders. And I just did that again this week in Zambia: I met with women whose husbands are in jail for poaching rhinos, and with the rangers who put people in jail, and with the policymakers who decide when to put people in jail," Gore said. "At CCSS, I learned how to engage different audiences, as an honest broker, about wildlife conservation. That's a skill that CCSS cultivated in me and I'm deeply appreciative of it."

In addition to faculty and fellow students, CCSS research staff provided indispensable support to help students develop new ideas, consider different methodologies, or understand peer review. As a faculty member herself now, Gore said she tries to emulate the experience she had at Cornell.

"It was a real apprenticeship-type model and incredibly inclusive," Gore said. "I never really felt a top-down pressure; I was just encouraged to try new things, be prepared, and practice. It's a model that really enabled people to grow as much as they wanted to."

"That experience profoundly influenced the way I mentor my own students today"

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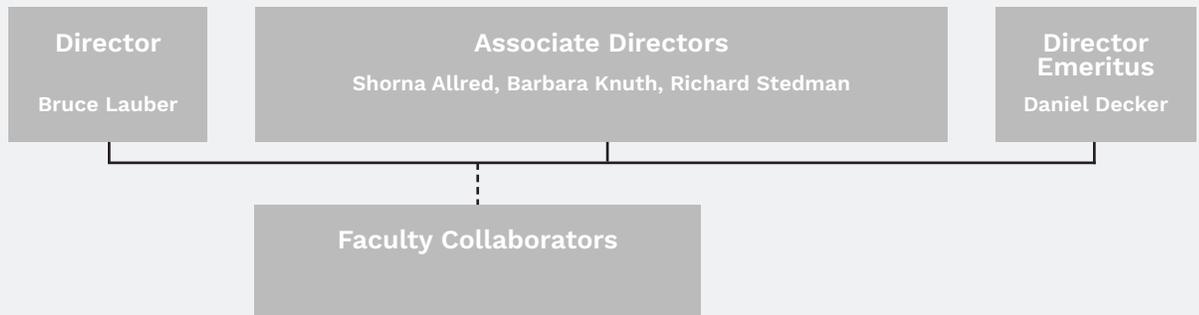
CCSS PEOPLE

The Impact and reach of the CCSS depend on our faculty, staff, and graduate students – and the people and organizations who collaborate with us.

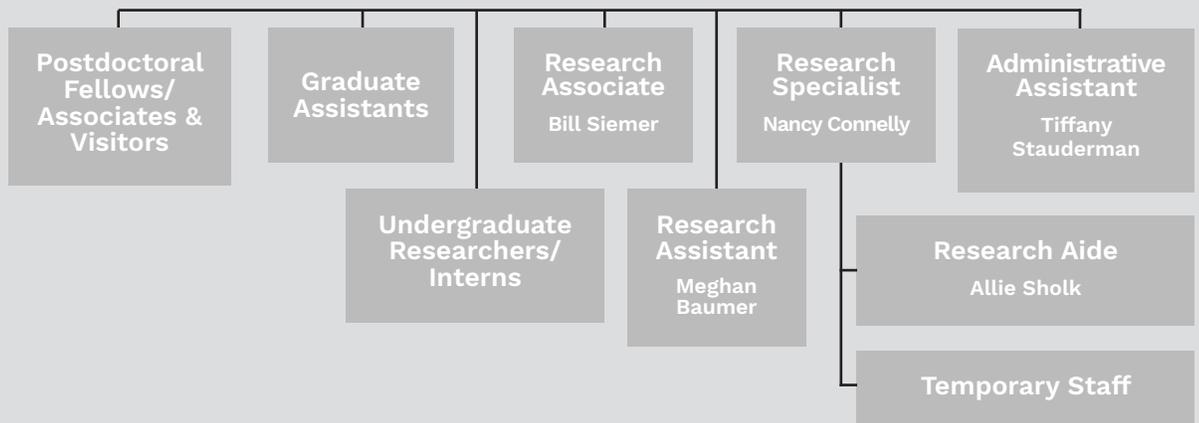


FACULTY AND STAFF

SUPERVISORS OF CCSS ACTIVITIES



CCSS STAFF



CENTER FOR CONSERVATION SOCIAL SCIENCES ORGANIZATIONAL CHART

CORE FACULTY (as of January 2022)

T. Bruce Lauber, Senior Research Associate and CCSS Director

Specializations: Risk management and communication related to fish and wildlife; invasive species management; conflict and collaboration in natural resource management; stakeholder engagement in decision making; Great Lakes.

Shorna B. Allred, Professor, House Professor and Dean (Alice Cook House), and CCSS Associate Director

Specializations: Conservation social science; natural resource policy and decision-making; community resilience, environmental justice, and community-based participatory research methods.

Barbara A. Knuth, Professor and CCSS Associate Director

Specializations: Risk communication and risk perception related to chemical contaminants in fish; ecosystem-based approaches to fisheries management; Great Lakes and marine fisheries policy and management.

Richard C. Stedman, Professor and CCSS Associate Director; Chair of the Department of Natural Resources and the Environment

Specializations: Sense of place; community resilience; impacts of social and environmental change on wildlife recreation and community; risk and policy; environmental attitudes and behaviors; community-based resource management; landowner attitudes and behaviors; coupled human/ecological systems.

Daniel J. Decker, Professor Emeritus and CCSS Director Emeritus

Specializations: Integration of human dimensions insights into wildlife management decision making, policy, planning, and practice; stakeholder involvement in wildlife management.

AFFILIATED FACULTY (as of January 2022)

Paul D. Curtis, Professor and Department Extension Leader, Department of Natural Resources and the Environment

Specializations: Resolving conflicts between people and wildlife; citizen participation in decision making; outreach and policy education.

Marianne Krasny, Professor and Director of Graduate Studies; Director, Civic Ecology Lab; Department of Natural Resources and the Environment

Specializations: Environmental and climate education; grassroots environmental stewardship (civic ecology); strategies for scaling up of individual climate actions and stewardship behaviors; online and engaged learning.

Heidi Kretser, Adjunct Associate Professor, Department of Natural Resources and the Environment; Senior Conservation Social Scientist – Global Conservation Program, Wildlife Conservation Society

Specializations: Incorporating tools and approaches from social sciences into applied conservation research; Reducing impacts of private lands development and protected area visitation on wildlife; Integrating rights-based approaches and social safeguards into conservation practice; Building collaborative approaches for increasing community capacity in natural resource governance.

Katherine A. McComas, Vice Provost for Engagement and Land-Grant Affairs; Professor, Department of Communication

Specializations: Risk, science, and environmental communication; community involvement and public participation; trust and credibility related to science communication.

Jeff Niederdeppe, Associate Dean of Faculty Development, Jeb E. Brooks School of Public Policy; Professor, Department of Communication; Co-Director, Cornell Center for Health Equity

Specializations: Health and environmental communication; public communication campaigns; public opinion and social policy.

Krysten Schuler, Assistant Research Professor, Department of Public & Ecosystem Health and Co-Director of the Cornell Wildlife Health Lab

Specializations: wildlife disease ecology, population ecology, regional wildlife health research, risk communication, applied tools, policy support, New York State Wildlife Health Program

Keith Tidball, Senior Extension Associate, Assistant Director Cornell Cooperative Extension; Department of Natural Resources and the Environment

Specializations: Anthropology of social-ecological systems; therapeutic attributes of nature and outdoor recreation among returning combatants and survivors of traumatic events; food motivations in hunter and angler recruitment, retention, and reactivation; citizen science in angling and hunting communities of practice; climate narratives among hunters, anglers, and trappers

Photo by Annie Spratt on Unsplash



CENTER STAFF (as of January 2022)

Meghan S. Baumer, Research Assistant

Specializations: Volunteer management, project management, state fish and wildlife agency workshop and assessment facilitation and support.

Nancy A. Connelly, Research Specialist

Specializations: Incorporating human dimensions perspectives in natural resources management; risk perception and communication related to fisheries management; survey research methods.

Kathleen Epstein, Postdoctoral Fellow

Specializations: land and wildlife management, rural economic geography, environmental conflict and conflict resolution.

Daria Ponstingel, Postdoctoral Associate

Specializations: Human dimensions of ecological change; conservation and land use planning; governance of social-ecological systems; GIS and Remote Sensing; carbon sequestration in community gardens.

Ryo Sakurai, Visiting Associate Professor

Specializations: Human dimensions of wildlife management; evaluation of environmental education programs; conservation social science; environmental psychology; social-ecological systems

Ahmadreza Shirvani Dastgerdi, Visiting Scholar

Specializations: Resilient landscapes, cultural heritage management, landscape planning, natural protected areas.

Alexandra Sholk, Research Aide

Specializations: Survey implementation; interviewing; database management; content analysis.

William F. Siemer, Research Associate

Specializations: Motivations and satisfactions associated with wildlife-dependent recreation; program evaluation; risk perceptions associated with human-wildlife conflicts; understanding wildlife acceptance capacity.

Tiffany Stauderman, Administrative Assistant

Specializations: Center office management; website maintenance; administrative assistance.

Currently studying epistemologies amidst quantitative assessments and research methods in psychology.

Francine Barchett

Specializations: social-ecological systems, sustainability certification strategies for wildlife, community-based natural resource management in Southern Africa, trophy/safari hunting

Gloria Blaise, Gates Millennium Fellow

Specializations: Planetary health, rural community development, global health, community-based agroforestry, integrated landscape management

Santiago Garcia, Sr.

Specializations: Human dimension in natural resources, human-wildlife coexistence, socio-ecological systems, participatory GIS, spatial ecology, environmental governance, climate change and community-based adaptation, protected areas, indigenous peoples, and local communities.

James Goetz

Specializations: Political ecology of natural resource and protected area management. Social and environmental outcomes of payments for ecosystem services. Participative, adaptive conservation planning and management.

Aalayna Green, Sloan Fellow

Specializations: feminist political ecology, conservation criminology, critical race theory, Black feminist thought, environmental justice, human dimensions of natural resources, gender.

Neelia Heath

Specializations: environmental inequalities, economic injustices, human dimensions of environmentalism, racial capitalism

Frieda Kay

Specializations: Human dimensions of sustainability transitions; energy transitions, regional planning, and infrastructure resilience; intermediary actor roles, collaborative decision making, and solutions sharing

Deanna Kreinheder

Specializations: Human dimensions in natural resources; wildlife disease; governance; communication campaigns; behavioral change; risk communication.

Sarah Naiman, National Science Foundation Fellow

Specializations: Social psychology; environmental justice; U.S. Latine environmentalism

GRADUATE STUDENTS (as of January 2022)

Felipe Gutierrez Antinopai, Sr.

Specializations: Socio-ecological systems, carbon and ecological footprint, regional planning, history of sustainability and quality of life, indicator systems.



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Roberta Nilson

Specializations: Rural studies; natural resource dependent communities; government, politics, and policy studies; energy impacts; sense of place; public engagement; environmental justice.

Shashank Poudel

Specializations: Large carnivore monitoring and conservation in human dominated landscapes; human leopard conflict; leveraging communication and outreach for human wildlife conflict mitigation; designing capacity building program for protected area staffs and local communities; social survey for conservation.

Charlie Tebbutt, Guani Fellow

Specializations: Community-engaged research, social-ecological systems, sustainable rural development, Amazonian ecosystems, agroforestry and forest farming

Nicole Tu-Maung

Specializations: political ecology, migration, access, Southeast Asian studies, qualitative methods, human-animal relationships, diversifying the outdoors

Aaron Wightman

Specializations: rural community development, sustainable agroforestry

GRADUATE STUDENTS RECEIVING DEGREES IN 2021

Francine Barchett (Shorna B. Allred, Advisor)

M.P.S., Global Development; Project: Examining Sustainable Practices and Opportunities for a Sustainable Certification Scheme for Trophy Hunting in Sub-Saharan Africa

Anna Brettman (Shorna B. Allred, Advisor)

M.P.S., Global Development; Project: International Cooperation in Disaster Relief: Coordination Challenges and Solutions

Maggie Lin (T. Bruce Lauber, Advisor)

M.P.S., Natural Resources; Project: New York Master Naturalist Program: Participant Survey Assessment

CCSS COLLABORATORS

GOVERNMENT

- City of Binghamton
 - Colorado Parks and Wildlife
 - Environment Canada
 - FL Fish and Wildlife Conservation
 - Great Lakes Consortium for Fish Consumption Advisories
 - Great Lakes Fishery Commission
 - Hudson River Estuary Program
 - ID Department of Fish and Game
 - Michigan DNR
 - Michigan Sea Grant
 - MN Department of Health
 - MN Department of Natural Resources
 - MO Department of Conservation
 - National Academy of Sciences
 - National Park Service
 - National Science Foundation
 - NY Sea Grant
 - NYS DEC Division of Fish and Wildlife
 - OH Division of Wildlife
 - PA Game Commission
 - TN Wildlife Resource Agency
 - US Environmental Protection Agency
 - US Fish and Wildlife Service
 - US Forest Service
 - US Geological Survey
 - USDA National Institute of Food and Agriculture
 - WI Department of Natural Resources
 - Wyoming Department of Game and Fish
- ASSIST (Attitudes to Shale Gas in Space and Time)
 - Association of Fish and Wildlife Agencies
 - Avangrid
 - Center for Nonprofit Strategies
 - Environmental Defense Fund
 - HELSUS (Helsinki Institute of Sustainability)
 - Innovative Outcomes
 - NYS Energy Research & Development Authority
 - Northern Woodlands
 - Ontario Ministry of Natural Resources and Environment
 - Pecan Street
 - Responsive Management
 - Science and Resilience Institute at Jamaica Bay
 - Stockholm Resilience Centre
 - The Nature Conservancy (NY Chapter)
 - Wildlife Conservation Society
 - Wildlife Management Institute

UNIVERSITIES

- Carleton University
- George Washington University
- Michigan State University
- Montana State University
- National Taiwan University (NTU)
- North Carolina State University
- SUNY ESF
- Stockholm University
- The Ohio State University
- University of Alberta
- University of Arkansas
- University of Edinburgh
- University of Helsinki
- University of Illinois

- University of Michigan
- University of Minnesota
- University of Oxford
- University of Technology Sarawak
- University of Wisconsin
- Virginia Tech
- Washington State University

CORNELL UNIVERSITY

- Cornell Atkinson Center for Sustainability
- Cornell Cooperative Extension
- Cornell Laboratory of Ornithology
- Cornell Rural Humanities Initiative
- Cornell Southeast Asia Program
- Cornell Survey Research Institute
- Cornell University Agricultural Experiment Station
- Cornell University Library
- Office of Engagement Initiatives
- Wildlife Health Lab
- Department/School Units:
 - Biological and Environmental Engineering
 - City and Regional Planning
 - Civil Engineering
 - Communication
 - Global Development
 - Earth and Atmospheric Sciences
 - Government
 - History of Art and Visual Studies
 - Landscape Architecture
 - Natural Resources and the Environment
 - Public and Ecosystem Health
 - School of Integrated Plant Sciences

PRIVATE/PUBLIC ORGANIZATIONS

- Adirondack Research Consortium

PUBLICATIONS

In 2021, the CCSS produced 32 peer-reviewed journal articles and 19 other publications.



2021 CCSS PEER-REVIEWED JOURNAL ARTICLES

- Alhaamd, M., Alrababah, M., Jaradat, S., Gharaibeh, A. and S. Allred. 2021. Drylands rainwater harvesting: A community-based management approach. *International Journal of Sustainable Agricultural Management and Informatics*, 7(1): 31-43.
- Allred, S., Stedman, R., Heady, L. and K. Strong. 2021. Incorporating biodiversity in municipal land-use planning: An assessment of technical assistance, policy capacity, and conservation outcomes in New York's Hudson Valley. *Land Use Policy*, 104: 105344. <https://doi.org/10.1016/j.landusepol.2021.105344>
- Blaise, G. C., and S.B. Allred. 2021. Trees for livelihoods: Exploring the relationship between community agroforestry and community capitals in rural Haiti. *Community Development*, 1–22. <https://doi.org/10.1080/15575330.2021.1998168>
- Bugden, D., and R.C. Stedman. 2021. Unfulfilled promise: Social acceptance of the smart grid. *Environmental Research Letters* 16(3): 034019.
- Cho J., Li Y., Krasny M. E., Russ A., and R.F. Kizilcec. 2021. Online Learning and Social Norms: Evidence from a Cross-Cultural Field Experiment in a Course for a Cause: *Computer-Based Learning in Context*. 3 (1), 18-36. DOI: 10.5281/zenodo.4781808
- Daneri, D.R., Krasny, M.E., and R.C. Stedman. 2021. Place-based identity and framing in local environmental politics. *Review of Policy Research*. 38(2):180-202. <https://doi.org/10.1111/ropr.12415>
- Eiseman, D., Allred, S. and P. Smallidge. 2021. Applying service-dominant logic to peer-to-peer experiences between Master Forest Owner volunteers and woodland owners in New York State. *Small-scale Forestry*, 21:1-28. <https://doi.org/10.1007/s11842-021-09485-6>
- Eiseman, D.L., Allred, S.B., Smallidge, P.J., Chawla, P., Dellorto-Blackwell, C., and B. Boone. 2021. Marketing the master forest owner volunteer program: a pilot study on the messaging and materials of engagement. *Applied Environmental Education & Communication*, 1-18. <https://doi.org/10.1080/1533015X.2021.2013747>
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- Golebie, E., C.J. van Riper, C. Suski, and R. Stedman. 2021. Reducing invasive species transport among recreational anglers: the importance of values and risk perceptions. *North American Journal of Fisheries Management* 41(6):1212-1225. <https://doi.org/10.1002/nafm.10696>.
- Hanson, M., N. Hollingshead, K. Schuler, W. Siemer, P. Martin, and E. Bunting. 2021. Species, causes, and outcomes of wildlife rehabilitation in New York State. *PLoS ONE* 16(9): e0257675. <https://doi.org/10.1371/journal.pone.0257675>
- Hart, P.S., R.C. Stedman, and C. Clarke. 2021. Political polarization in support for subsidizing unprofitable coal power plants. *Energy Policy* 150: 112156. <https://doi.org/10.1016/j.enpol.2021.112156>
- Krasny, M.E., Li, Y., Gonzales, D., and A. Sims Bartel. 2021. E-Engagement: Approaches to using digital communications in student-community engagement. *Journal of Higher Education Outreach and Engagement*: 25(4):21. <https://openjournals.libs.uga.edu/jheoe/article/view/1727>
- Lambert, C. E., Holley, J. R., McComas, K. A., Snider, N. P., and G.K. Tucker. 2021. Eroding land and erasing place: A qualitative study of place attachment, risk perception, and coastal land loss in southern Louisiana. *Sustainability*, 13(11), 6269. DOI: 10.3390/su13116269.
- Larson, L. R., Peterson, M. N., von Furstenberg, R., Vayer, V., Lee, K. J., Choi, D., Stevenson, K., Ahlers, A., Anhalt-Depies, C., Bruskotter, J., Chizinki, C., Dayer, A., Ghasemi, B., Gigliotti, L., Graefe, A., Irwin, K., Keith, S., Kelly, M., Kyle, G.,



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Metcalf, E., Morse, W., Needham, M., Poudyal, N., Quartuch, M., Rodriguez, S., Romulo, C., Sharp, R. L., Siemer, W., Springer, M., Stedman, R., Stein, T., van Deelen, T., Whiting, J., Winkler, R., and K. Woosnam. 2021. The future of wildlife conservation funding: What options do U.S. college students support? *Conservation Science and Practice* 3(10):e505. <https://doi.org/10.1111/csp2.505>

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- Quartuch, M.R., Allred, S.B., Markowitz, E., Catanzaro, P. and M. Markowski-Lindsay. 2021. Applying the Transtheoretical Model of Change to Legacy Planning Decisions. *Small-Scale Forestry*, 20:457-478. <https://doi.org/10.1007/s11842-021-09476-7>
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- Rudd, L.F., Allred, S., Ross, J.G.B., Hare, D., Nkomo, M.N., Shanger, K., Allen, T., Biggs, D., Dickman, A., Dunaway, M., Ghosh, R., González, N.T., Kepe, T., Mbizah, M.M., Middleton, S.L., Oommen, M.AL., Paudel, K., Sillero-Zubiri, C., and A. Dávalos. 2021. Overcoming racism in the twin spheres of conservation science and practice. *Proceedings of the Royal Society B: Biological Sciences*. 288(1962): 20211871. <https://doi.org/10.1098/rspb.2021.1871>
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- Sward, J, R.S. Nilson, V.V. Katkar, R.C. Stedman, D.L. Kay, J.E. Ifft, and K. M. Zhang. 2021. Integrating social considerations in multicriteria decision analysis for utility-scale solar photovoltaic siting. *Applied Energy* 288: 116543 <https://doi.org/10.1016/j.apenergy.2021.116543>
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- Vayer, V. R., L. R. Larson, M. N. Peterson, K. J. Lee, R. Von Furstenberg, D. Y. Choi, K. Stevenson, A. A. Ahlers, C. Anhalt-Depies, J. Bruskotter, C. Chizinski, B. Clark, A. A. Dayer, B. Ghasemi, L. Gigliotti, A. Graefe, K. Irwin, S. J. Keith, M. Kelly, G. Kyle, E. Metcalf, W. Morse, M. D. Needham, N. Poudyal, M. Quartuch, S. Rodriguez, C. Romulo, R. L. Sharp, W. Siemer, M. Springer, R. Stedman, T. Stein, T. Van Deelen, J. Whiting, R. L. Winkler, and K.M. Woosnam. 2021. Diverse university students across the United States reveal

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OTHER CCSS PUBLICATIONS

Armstrong, A., Stedman, R. C., and M.E. Krasny. 2021. Intimacy on the Half-Shell: Place, Oysters, and the Emerging Narrative of Virginia Aquaculture. In A. M. Dare & V. C. Fletcher (Eds.), *Communicating in the Anthropocene: Intimate Relations* (pp. 85–104). Lexington Books (Roman and Littlefield).

Beltran, D., Isch, C., Ayers, J., Alcock, J., Brinkworth, J., Cronk, L., Hurmuz-Sklias, H., Tidball, K., Van Horn, A., Todd, P., and A Aktipis. 2021. Mask Wearing Behavior Across Routine and Leisure Activities During COVID-19. *PsyArXiv*, 18 Apr. 2021. Web. <https://psyarxiv.com/2qya8>

Connelly, N.A. and T.B. Lauber. 2021. Managing Fish and Wildlife: Public Trust in DEC and Opinions on DEC Funding. Center for Conservation Social Sciences Publ. Series 21-4. Dept. of Nat. Resources., Coll. Agric. and Life Sci., Cornell Univ., Ithaca, NY. 12 pp.

Connelly, N.A. and R.C. Stedman. 2021. Hunters and anglers at West Point: Their experiences and opinions on management. Center for Conservation Social Sciences Publ. Series 21-3. Dept. of Nat. Resources., Coll. Agric. and Life Sci., Cornell Univ., Ithaca, NY. 71 pp

Fuller, A. K., Stiller, J.C., Siemer, W.F., and K. A. Perkins. 2021. Engaging hunters in selecting duck season dates using decision science. Pages 117-129

(Chapter 8) in K. L. Pope and L. A. Powell (Ed.s), *Harvest of Fish and Wildlife: New Paradigms for Sustainable Management*. CRC Press. Boca Raton, FL.

Guadagno, L., Vecchiarelli, B.M., Kretser, H., and D. Wilkie. 2021. Reflection and learning from failure in conservation organizations: A report for The Failure Factors Initiative. Wildlife Conservation Society, Bronx, NY USA 35pp. <https://doi.org/10.19121/2021.Report.40769>

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Photo by Arthur Goldstein on Unsplash

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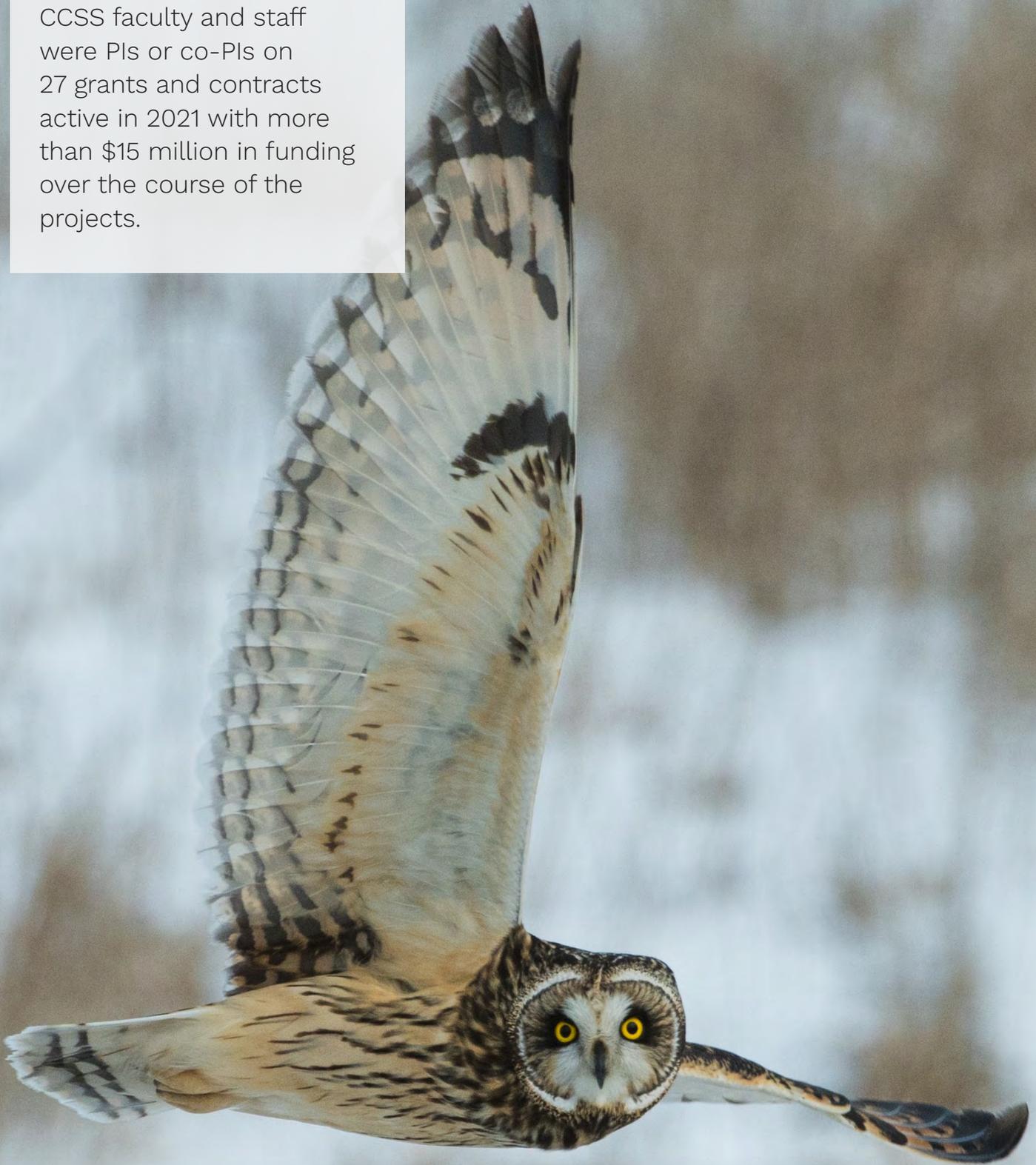
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CCSS FUNDING

CCSS faculty and staff were PIs or co-PIs on 27 grants and contracts active in 2021 with more than \$15 million in funding over the course of the projects.



CCSS FUNDED PROJECTS ACTIVE IN 2021

- Allred, S.B. Building extension capacity around legacy planning for woodland owners. University of Wisconsin-Madison/subaward from USDA National Institute of Food and Agriculture (Kris Tiles, PI). \$4,475. 2021-2022.
- Allred, S. and P. Catanzaro. Stories of Black rural land stewardship and legacy in the Northeast. Cornell Rural Humanities Initiative (from an award by the Andrew W. Mellon Foundation), \$10,000. 2020-2021.
- Allred, S., Meredith, G. and S. Morreale. Accelerating agroforestry adoption to increase planetary health. Cornell Atkinson Center for Sustainability, Academic Venture Fund. \$174,852. 2021-2023.
- Fuller, A., Stedman, R. C. and M. Gilbert. Living with Leopards: Implications of human-leopard interaction on food security and public health in the foothills of the Himalayas. Atkinson Center for a Sustainable Future, Academic Venture Fund. \$148,066. 2019-2021.
- Fuller, A. and R.C. Stedman. Spatial risk mapping of sustainable food systems threatened by conflicts with Andean bears in the western Ecuadorian Andes. School for Integrated Plant Sciences, Cornell University. \$11,900. FY 2019-2020.
- Klinck, H., Allred, S., and V. Beard. Traversing the Java Sea: Social-ecological impacts of an Asian megacity migration on a biological and cultural diversity hotspot. Migrations Global Challenge, Vice Provost for International Affairs, Cornell University. \$110,391. 2020-2023.
- Kleisner, K., Burden, M., Sullivan, P. and R. Stedman. Factors influencing the long-term effects of fisheries reform efforts: How resilient are Icelandic fisheries to climate change? EDF-Atkinson Post-doctoral Fellow Proposals. \$100,000. 2019-2021.
- Knuth, B.A., Hernández, S.X. and C. McLinn. AGEP Transformation Alliance: CIRTL AGEP – Inclusive excellence and improved climate for future faculty. National Science Foundation. \$106,721. 2016-2022.
- Epstein, K. and T.B. Lauber. Emotional dimensions of biosecurity: towards improved collaborative management of wildlife disease. Cornell Atkinson Center for Sustainability. \$154,000. 2021-2023.
- Lauber, T. B. Communication to promote recovery of an important species for agriculture: perceptions of risks and benefits of bats. Cornell University College of Agriculture and Life Sciences Agricultural Experiment Station. \$89,942. 2017-2021.
- Lauber, T.B. and B.A. Knuth. Effectively communicating dietary seafood advice to pregnant women. Seafood Industry Research Fund. \$58,629. 2021.
- Lauber, T. B., Knuth, B. A., Stedman, R. C., and N.A. Connelly. Stakeholder and resource manager responses to the Chinook salmon fishery collapse in Lake Huron: Informing future decision-making. Great Lakes Fishery Commission. \$138,251. 2020-2021.
- Lauber, T.B. and R.C. Stedman. Collaborative research in the human dimensions of wildlife management. NYS Department of Environmental Conservation. \$1,592,738. 2021-2026.
- Lauber, T.B., Stedman, R.C. and K. McComas. Developing a research-based digital media campaign to reduce the risks of Chronic Wasting Disease. New York State Department of Environmental Conservation and USDA-APHIS. \$104,755. 2020-2022.
- Nishii, L. and B.A. Knuth. Cornell University McNair Program. Ronald E. McNair Post-baccalaureate Achievement Program at Cornell University. U.S. Department of Education. \$1,231,457. 2017-2022.
- Nguyen, V., MacNeil, A., Castello, L., Stedman, R., Simpson, S. and A. Fisk. Understanding the importance of provisioning fisheries in the Great Lakes. Great Lakes Fishery Commission. \$202,564 FY 2021-2024.
- Stedman, R.C. Emerging inequality in New York State solar energy development. Cornell Center for

- the Study of Inequality. \$74,300. 2020-2021.
- Stedman, R. C. Understanding how angler behaviors influence the spread of aquatic invasive species. University of Illinois at Urbana-Champaign. \$41,712. 2018-2021.
- Stedman, R.C. Connecting communities through smart tools and sensors to deliver enhanced ecosystem services and economic returns from regenerative farmland management. Pecan Street/National Science Foundation. \$44,916. 2021-2022.
- Stedman, R.C. and D.L. Kay. Renewable energy transitions. USDA Hatch Project. \$79,941. 2018-2022.
- Stedman, R.C. and D.L. Kay. Renewable energy transitions. USDA Smith-Lever Project. \$49,000. 2018-2022.
- Stedman, R. C. Understanding hunting and other outdoor recreation at West Point Installation. USDOD United States Army. \$79,159. 2020-2021.
- Stedman, R. C., Allred, S. B., Decker, D. J. and T.B. Lauber. Collaborative research in the human dimensions of wildlife management. NYS Department of Environmental Conservation. \$2,005,335. 2016-2021.
- Stedman, R.C., Smallidge, P., Woodbury, P., Chedzoy, B., and J. Wightman. Climate and Applied Forestry Research Institute Projects 2021. Research Foundation for the State University of New York/ NYS Department of Agriculture and Markets. \$500,000. 2021-2023.
- Steinschneider, S., Austerman, M., Rahm, B., Dodson, K., and T.B. Lauber. Dynamic climate adaptation for wetland restoration and coastal communities on Lake Ontario. Northeast Climate Adaptation Science Center. \$390,000. 2022-2025.
- Steinschneider, S., Lauber, T. B., Stedman, R. C., Knuth, B. A., Gronewald, A., and J. Thomann. Using hydroclimate modeling and social science to enhance flood resilience on Lake Ontario through the Climate Smart Communities program. Great Lakes Fishery Commission. \$240,000. 2020-2022.
- Sullivan, P., Sethi, S. and S. Allred. Hudson River Estuary Program Natural Resource Management Assistance. NYS Department of Environmental Conservation. \$7,815,985. 2021-2025.





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2021 ANNUAL REPORT

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