INTERNATIONAL
LAND CONSERVATION
NETWORK

Final Report of the 2023 ILCN Summer Institute

Edited by James N. Levitt and Robin Austin

International Land Conservation Network,
a Program of the Lincoln Institute of Land Policy
Cambridge, Massachusetts, USA
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Cover photo of Cherry Pond at Pondicherry National Wildlife Refuge. Source: David Govatski

1. Introduction

From May 17 to July 18, 2023, a remarkable group of graduate students and early-career practitioners in the field of land conservation participated in an online course organized by the International Land Conservation Network (ILCN), a program of the Lincoln Institute of Land Conservation, based in Cambridge, Massachusetts in the United States.

The focus of the course was Large Landscape Conservation – that is, the practice of land conservation through initiatives intended to protect and steward land **across** diverse boundaries, including:

- land parcel boundaries;
- ownership and organizational boundaries;
- public/private/non-profit/academic sector boundaries;
- jurisdictional boundaries of towns, counties, cities, states, and even nations; or
- cultural boundaries that can divide people by religion, race, ethnic, economic, or indigenous/settler differences.

In earlier years, the Lincoln Institute offered a similar course, both in face-to-face and online formats, primarily targeted at undergraduate and graduate students from New England. That course was affiliated with the ALPINE (Academics for Land Conservation in New England) network. In 2023, the course was redesigned to serve graduate students and early-stage professionals around the world who are affiliated with organizations that engage in the activities of the ILCN. Accordingly, the course participants came from a wide-ranging set of nations, including China, Togo, Belgium, Germany, the Netherlands, the United States, and Mexico.

The participants were first immersed in a set of case studies focused on landscapes from Spain to Maine and Germany to Canada, with a final case focused on the evolution of the ILCN itself. They considered, for each case, a rubric of fundamental questions: **who, what, when, where, why, how much, and so what?** That is, they thought about the following:

- Who – who were the principal project proponents; from what organizations and sectors; what people and communities did they need to convince of their project's merits; who might delay or halt the project; who was the project intended to serve?

- What – what was the project intended to accomplish; what benefits (for example, biodiversity protection, water quality and quantity enhancement, flood control, recreational amenities, carbon sequestration, economic development, and so on) does the project offer; what is the physical layout; what are the implications for the built environment and infrastructure?

- When – what is the timeline for project planning, fundraising, implementation, opening, monitoring and stewardship over time; how long is the project intended to last and provide benefits to the target community?

- Where – where geographically, and where in the context of local communities, governments, or other demographic factors, is the area of interest located? What does this mean, and what benefits does the project provide, culturally, physically, or politically, to different relevant groups of people, or to wildlife, or in the context of a watershed?

- Why – why is this project being undertaken? What is the story of this land? Who cares about it? What are the motivations of the proponents, and of the individuals or groups that might oppose the protection of this land?

- How much – how much will the protection of this land cost, and how will it be financed? What groups, and which methodologies will be used to protect this land?

- So What – what will be the long term impact of this effort? How will it ultimately improve the lives of people, of wildlife, or watersheds, and so on? After the project is completed, what difference will it make, and who will understand the project's impact and significance?

As you will see from the project descriptions that follow, the participants dove deep into their subjects, sometimes addressing the questions listed above very directly, and sometimes in a more general fashion. Just as we ask the participants "so what" with regards to the projects they are investigating, the reader may ask "What is the long-term impact of such an exercise?" The answer is found in the impact that this course of study and analysis has on the participants' lives. We know that at least a portion of the participants go on to have long and productive careers in land conservation, becoming involved in initiatives large and small. Some have gone on to earn graduate degrees in related fields and are now consulting to ongoing projects located from the tropics in Belize to the Canadian boreal forest. Others are senior executives in local land trusts, conservancies, and wildlife conservation initiatives from rural Massachusetts to Mexico and the Netherlands.

What you will find in the following pages are the results of their final projects from the summer of 2023. The projects focus on a wide variety of places and disciplines, from a Geographic Information System analysis of the Connecticut River to the systematic collection on protected areas in the European Union and beyond. Enjoy their work and imagine what these young talents might be capable of achieving in the field of conservation in decades to come.

James N. Levitt
Lincoln Institute of Land Policy
Cambridge, Massachusetts
January 2024

1. Schedule

Introduction to Land Conservation Principles
Wednesday, May 17, 3 pm to 5 pm by Zoom
Subject Area: example of an outstanding land trust
Presenters: Jim Levitt, Emma Ellsworth

Case Study:
Fundación Catalunya La Pedrera Project, and how it contributes to the 30x30 and COP15 Goals
Wednesday, May 24
Subject area: 30x30 and COP15 goals
Presenters: Miquel Rafa

Case Study:
The Implementation of a Water Fund Initiative in the Sebago Lakes Region of Maine
Wednesday, May 31
Subject Area: water supply, biodiversity habitat, carbon sequestration, recreation
Presenters: Chandni Navalkha, Karen Young

Case Study:
The Havel River Project in Germany
Wednesday, June 14th
Subject Areas: Biodiversity habitat, storm water management, recreation, carbon
Presenter: Tilmann Disselhoff

A Discussion of Indigenous Land Rights with Riley Bertoncini, McGill University Graduate Student
Wednesday, June 21
Subject Areas: indigenous led conservation efforts
Presenter: Riley Bertoncini

Case study:
The International Land Conservation Network (ILCN)
Wednesday, June 28
Subject Areas: network building
Presenter: Jim Levitt

Final Participant Presentations
July 11, 18

2. Participant Biographies

Akou Akakpo is the Human Resources Manager at the Land Trust Alliance. Akou has worked at the Land Trust Alliance for the last four years, holding multiple roles in the Operations Department; and just recently, was promoted to the position of Human Resources Manager. She is a certified Human Resources professional through the Society of Human Resources Management (SHRM) and is passionate about advocating for employees in the workplace. Akou attended Ithaca College and studied Public and Community Health. She grew up in Togo, in a family of farmers from whom she learned the importance of protecting the lands that serve us. Equipped with her passion for social justice, lessons learned from her family and land conservation advocates, Akou hopes to cultivate a career of advocating for accessible natural places for people; especially in communities who have been excluded from land conservation discussions. In her spare time, Akou enjoys baking to share with people and exploring natural spaces around Washington, D.C.

Dr. Cheng Chen is Program Director of the Nature Watch Program, in Shanshui Conservation Center. She worked on population genetics of Sichuan snub-nosed monkey and snow leopard landscape genetic conservation in Sanjiangyuan during her PHD and postdoc with the Institute of Zoology, Chinese Academy of Sciences and Center for Nature and Society of Peking University. She has established a genetics research platform for supporting wildlife conservation in Sanjiangyuan National Park. Since 2015, she has been continuously coordinating and promoting the Snow Leopard China network. Since 2019, she started the current position as the Director of the Nature Watch Program, and is mainly focused on and dedicated to promoting the biodiversity conservation mainstreaming in sustainable policy and investment, from the perspectives of biodiversity databases, technology empowerment, research, and policy advocacy.

Konstantinos Gouzias is a student at Northeastern University who was accepted for a Co-op position at the Lincoln Institute for the Summer and Fall period. He is pursuing a BA in International Affairs as well as a MS in Security and Resilience Studies with an expected graduation in 2024 and 2025 respectively. Konstantinos is a US Navy veteran with extensive international experience in the Navy's 5th Fleet. Additionally, he served in previous Co-op positions for the National Ombudsman in Greece and the Landmine Relief Fund, an American 501c that operates in Cambodia to assist in landmine and unexploded ordnance disposal to which he is a current sitting member on the board of directors. Along with conservation, Konstantinos is interested in

climate change resilience and utilizing Geographic Information Systems for research and policy solutions.

Carolina Halevy is the project coordinator of the LIFE project "European Networks for Private Land Conservation" (LIFE ENPLC). The project aims to expand the use of private land conservation tools in the European Union by improving financial incentives, fostering citizen engagement, and expanding networking among organizations and individuals. She is working for BirdLife International conducting research on standards and practices regarding conservation easements in quarries. She is also the regional representative for Europe at the International Land Conservation Network (ILCN) and a member of the IUCN WCPA.

Carolina has a background in Business Administration (B.Sc.) and Environmental Sciences (M.Sc.) from Utrecht University, where she led the business team of the Hogeschool Utrecht at an international competition of the U.S. Department of Energy (Solar Decathlon) worked as a research assistant, took an active role in university governance as council member and followed the European Institute of Innovation & Technology Climate- KIC programme. She previously worked for the Kumasi Institute of Tropical Agriculture, Natuurmonumenten, Eurosite and the Reef Renewal Foundation International.

Ana C. Ibarra-Macias earned her Ph. D. from University of Miami studying how habitat fragmentation impacts movement of tropical forest birds at the landscape level and completed her postdoctoral research at the National Autonomous University of Mexico (UNAM) working on bat ecology and conservation. For the last 10 years, she has been dedicated to monitoring the effects that habitat transformation has on bats and their habitats, and how to better prevent, manage and restore bat populations. Ana, a Mexico citizen based in Chiapas, serves as the in-country advisor for Endangered Species Interventions for Bat Conservation International, facilitating and expanding BCI´s activities in Mexico and Latin America, while promoting collaboration with local partners, and building capacity with local agencies and communities. She is an active member of the Mexican Program for the Conservation of Bats (PCMM) where she participates as advisor for conservation, monitoring, and educational programs.

Jose "Pepe" A. Iracheta is Director General of the Mexican National Institute of Sustainable Land, a decentralized body of the Federal Government of Mexico; and he collaborates with Fundacion Tlaloc in Mexico, which is an NGO dedicated to sustainable development, emphasizing the role of communities and their empowerment towards a harmonious development with the environment, from the bottom up. He has a PhD in Public Affairs specialized in Urban Environmental Policy from Indiana University-Bloomington (O'Neill School of Public and Environmental Affairs), he has a Masters in Administration and Public Policy from the Center for Economic Research and Teaching (CIDE) and has a degree in Economics by the Iberoamerican University. He has been a beneficiary of CONACYT and Fulbright-García Robles scholarships, and of educational financing from the Fund for the Development of Human Resources of the Bank of Mexico. He was Director of Public Policy at Centro Eure S.C. where he coordinated various applied research and consulting projects. He is co-author of the Report on the State of Prosperity of Mexican Cities and the National Report of Saudi Arabia, both from UN-Habitat, as well as the Evaluation of the Metropolitan and Regional Funds of the Federal Government of Mexico of the CLEAR Center, SHCP and IDB. He is a specialist in land policy and urban / metropolitan environmental policy. He has more than 15 years of experience in public policy analysis.

Nina Jeffries is the 2022 Fellow for the Land Trust Alliance's Scholars for Conservation Leadership Program. She works at the Western Reserve Land Conservancy, which conserves natural landscapes, protects family farms, and creates vibrant urban green spaces to support thriving, healthy communities. While completing a B.S. in Environmental Science and Policy from the University of Maryland, Nina spent time at the Maryland Department of Agriculture, the U.S. Department of Justice, the Environmental Law Institute, and managed a small urban farm. In college, she was deeply involved in environmental activism, advocating for climate action, economic justice, and environmental education at the university, county, and state level. She will be starting law school at Duke University this fall, where she hopes to build a career in legal solutions to climate change and environmental injustices.

Nina is excited about the opportunity to learn more about tools for conservation, the role of land trusts, and be introduced to a global framework for conservation through the ILCN Summer Institute. She additionally is looking forward to connecting with and learning from her peers in the program.

Dr. Kristen Lear is a bat conservationist dedicated to developing practical, equitable, and meaningful solutions to bat conservation challenges through collaborative research, community-based conservation, multi-sectoral partnerships, and public engagement and outreach. She has over 15 years of experience working on bat conservation, education, and research projects around the world including in the U.S., Mexico, and Australia. She currently leads Bat Conservation International's Agave Restoration Initiative, a bi-national, landscape-scale restoration to restore

native agaves to the U.S. Southwest and Mexico to support threatened pollinating bats and community livelihoods. She earned her B.A. in Zoology from Ohio Wesleyan University, and her Ph.D. in Integrative Conservation from the University of Georgia, where her research combined natural and social science approaches to assess opportunities for agave restoration with rural communities in Coahuila and Nuevo León, Mexico.

Dr. Lear is a founding member of the Nivalis Conservation Network, a collaborative group of U.S. and Mexican researchers, NGOs, and government agencies working towards the conservation of the endangered Mexican long-nosed bat, and is also on the Board of the Chihuahuan Desert Education Coalition. Dr. Lear is also passionate about bat outreach and regularly leads community bat presentations, public bat walks, and bat house building workshops, and is a 2018 National Geographic Explorer and an IF/THEN Ambassador for the American Association for the Advancement of Science working to encourage girls and young women in STEM fields.

Jingyi Liu is a policy analyst with the environmental policy and conservation at the Peking University-Lincoln Institute Center for Urban Development and Land Policy (PLC). Her research area includes Eco-environmental policy, protected areas framework, and biodiversity conservation. She got her master's degree in city planning from Boston University.

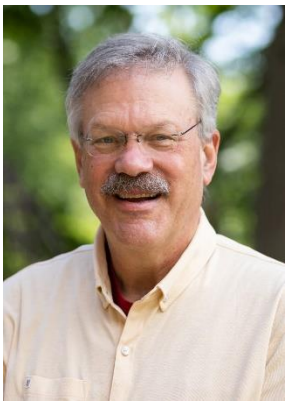
Anne-Sophie Mulier, M.Sc Bio-science Engineer in Agro- and Ecosystem services. She started her carrier as project manager at the University of Leuven investigating in the use of biogas for cook stoves in Ethiopia. In 2018 she joined the team of the European Landowners' Organization in Brussels as project officer with the duty of coordinating projects related to land conservation and biodiversity restoration. Her projects focus on tools and instruments to engage individual private landowners in national and regional conservation efforts in Europe. With this expertise she represents the network of individual landowners in the EU Conservation Landowners' Coalition (CLC), supporting the coordination of the 'European Networks for Private Land Conservation'. Anne-Sophie also has an advocacy role following EU institutions' decisions related to the topics of biodiversity and nature restoration. Anne-Sophie is fluent in Dutch and English and knows conversational French.

Claudia Viloria is a public policy manager, with experience in the private and social sectors. She focuses on the betterment of civil society organizations, and how to give them tools and knowledge to help them become experts on the promotion of rights. She has collaborated with Fundacion Tlaloc in Mexico for the development of local development initiatives related to sustainability and empowerment of indigenous communities. Claudia Viloria has a dual Bachelor Degree in Psychology and International Studies from Indiana University. She worked for Save the Children and for Centro Eure, both in

Mexico, where she developed sound skills to work with non-governmental organizations, mainly for project management and development. She currently works at Sanofi Vaccines in Mexico.

Melina Addix currently serves as an intern at Eurosite/the European Land Conservation Network. She is earning her bachelor's degree in European and Comparative Law at the Carl von Ossietsky University of Oldenburg in Germany.

3. Staff Biographies



Jim Levitt is a co-founder and the director of the ILCN, based at the Lincoln Institute in Cambridge, Massachusetts, USA. Levitt focuses on landmark innovations in the field of land and biodiversity conservation, both present-day and historic, that are characterized by five traits: novelty and creativity in conception, strategic significance, measurable effectiveness, international transferability, and the ability to endure. Such innovations include: the establishment of the first public open space in the English-speaking world in Boston in 1634; the creation of the world's first state and national parks at Yosemite and Yellowstone in 1864 and 1872; the invention of the world's first land trust in Massachusetts in 1891; and the ongoing emergence of landscape-scale conservation initiatives around the globe in the twentieth and twenty-first centuries. In each of these landmark innovations, key factors for success include: the engagement of highly talented social entrepreneurs; the leveraging of some of the most advanced technologies of the day; and the use of inventive financial and organizational tools.

Levitt has written and edited dozens of articles and four books on land and biodiversity conservation. He has lectured widely on the topic in venues ranging from Santiago, Chile to Beijing, China, and Stockholm, Sweden. Among his current efforts, Levitt is advising colleagues in Chile on the expansion of private land conservation initiatives and enabling legal frameworks in that nation. He is also engaged in an effort to link land conservation innovators at universities, colleges and independent research institutions around the globe. Levitt is a graduate of Yale College and the Yale School of Management (Yale SOM). He was named as a member of the first class of Donaldson Fellow by Yale SOM for career achievements that "exemplify the mission of the School". Jim and his wife Jane have three children and live in Belmont, Massachusetts. The family loves to spend part of every summer on their forested land in Maine, most of which is permanently protected with a conservation easement.

Chandni Navalkha is the Associate Director for Sustainably Managed Land and Water Resources at the Lincoln Institute of Land Policy, where she works on projects to advance and accelerate the enduring protection of land and water resources worldwide. Prior to joining the Lincoln Institute, Chandni was a fellow with the Sri Lanka Program for Forest Conservation, conducting research on the impacts of conservation on local livelihoods near the Sinharaja World Heritage Site. Chandni has worked for organizations in North America, Latin America, and South Asia supporting urban, peri-urban, and rural communities involved in voluntary land and resource conservation, and earlier in her career worked in change management for private and public sector organizations as a consultant with Accenture. She holds a Master's in Environmental Science from the Yale School of Forestry and Environmental Studies and a dual Bachelor of Arts in English and Economics from Cornell University.

Shenmin Liu is a Research Analyst with the Land and Water Conservation Program and China Program at the Lincoln Institute of Land Policy. She is currently supporting the Institute's efforts in promoting land conservation in China and assisting China Program with the project of designing property taxation system for Beijing municipality. She is also doing research on China's intergovernmental relations and municipal fiscal status. She holds a master's degree in public policy from the University of Chicago, and a bachelor's degree in finance from Renmin University of China.

Robin Austin is the Project Coordinator for the Land Conservation Team (LCT), where her work is focused on the International Land Conservation Network (ILCN). Previously, Robin was an Americorps Terracorps Service Member, working for the North County Land Trust in North Central Massachusetts as a Land Stewardship and Community Engagement Coordinator. She graduated from Smith College with a degree in Geology, and has a passion for land stewardship and conservation. She is also a 2019 graduate of the ALPINE Summer Institute, a summer training program in large landscape conservation organized by the Lincoln Institute's ALPINE (Academics for Land Protection in New England) project and the Highstead Foundation.

Lily Robinson is a '22 graduate of UMass Amherst, where she studied journalism and public policy. She found her way into the field of land conservation through the ALPINE summer institute and is looking forward to continuing to learn about this space alongside the ILCN team. Before she came to Lincoln, she was a freelance reporter for the Harvard Press and spent a summer interning at CommonWealth Magazine. Lily is an avid distance runner, outdoor enthusiast, and artist. She races for Battle Road Track Club, an elite post-collegiate running team; enjoys getting out and about in nature; and often disappears into the creative ether of crafting, drawing, making, or pondering what to make. A few of her simple pleasures are cats, coffee, crosswords, and Oxford commas.

4. Participant Cases

5.1 Accounting for Privately Protected Areas in Global (and EU) Protected Area Targets

Anne-Sophie Mulier, European Landowners Association; Melina Addix, Eurosite; Carolina Halevy, Eurosite

1. Introduction

International environmental targets such as Aichi Biodiversity targets[1] and the 2030 Sustainability Development Goals[2] underline globally agreed goals to protect and conserve natural areas across the world. Most recently agreed during the UN Biodiversity Conference in 2022 are four ambitious goals laid out as 23 targets.[3] One of these global targets for 2030 is '*Effective conservation and management of at least 30% of the world's lands, inland waters, coastal areas and oceans, with emphasis on areas of particular importance for biodiversity and ecosystem functioning and services.*'. This target was pushed by a UNFCCC informal group of countries called the High Ambition Coalition (HAC). This group includes the European Commission as well as the EU member states Germany, France, Luxembourg, Greece, Ireland, Belgium, Denmark, Spain, Sweden, Netherlands, Portugal, Austria, Croatia, Finland, Cyprus and Slovenia.[4]

An overview of the current status and data towards the goal on protected areas is to be found on the World Database on Protected Areas (WDPA), a joint project of IUCN and UN Environment. The WDPA shows global protected areas and 'other effective area-based conservation measures' (OECMs). OECMs originated from Aichi Biodiversity Target 11 and were formally defined in 2018 by the CBD as geographically defined areas, other than protected areas, which have similar conservation and biodiversity results, but are meeting other primary objectives than nature conservation. The WDPA is consultable by the public on the website of 'Protected Planet'.

The WDPA reports for June 2023 17.19% of protected areas in terrestrial and inland water and 8.26% of marine protected area coverage globally.[5] 1.18% of terrestrial and 0.1% in marine protected areas originate from OECMs.[6] The database is updated regularly via submissions of governments, non-governmental organizations, landowners and communities.[7]

The same target set as part of COP 15 to protect 30% of terrestrial and marine habitats by 2030 is also manifested in the European Biodiversity Strategy. Member States are requested to submit their reports to the 'European Environment Agency (EEA)', which then feeds into the Protected Planet Database.[8] The latest reports show that most European Countries have not yet reached the targeted 30% target for

[1] https://www.cbd.int/sp/targets/
[2] https://sdgs.un.org/goals
[3] https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022
[4] https://www.hacfornatureandpeople.org/hac-members
[5] https://www.protectedplanet.net/en
[6] https://www.protectedplanet.net/en
[7] https://www.ibat-alliance.org/pdf/wdpa_manual.pdf
[8] https://cdr.eionet.europa.eu/help/pledge

marine or terrestrial areas.[9] At first glance it seems like the Protected Planet database does not include any protected area under private governance in the European Union. There are also no OECMs reported so far in the European Union.

This lack of privately protected areas on the Protected Planet website reported by the European Union stands out as it does not reflect the protected landscape in Europe. For example, in Belgium, the nature protection organization Natuurpunt is the third biggest landowner in the country[10] and manages more than 28.000 hectares spread out across 500 different protected nature areas.[11] In the Netherlands, Natuurmonumenten, another non-profit organization owns and manages more than 110.000 ha protected land.[12] On top of the NGOs there are many individuals managing protected nature.

With this assessment we set out to explore this discrepancy by reviewing the current reporting stream. We aim to identify barriers and bottlenecks in the reporting and recognition of OECMs and privately protected areas (PPAs).

2. Setting the Scene

In the following we define PPAs and OECMs.

PPAs

The IUCN Guidelines for Privately Protected Areas define a privately protected area (PPA) as a "protected area, as defined by the IUCN (i.e., a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values), under private governance".[13] Private governance of a protected area can include governance by individuals and groups of individuals, non-governmental organizations, corporations, including existing commercial companies and small companies established to manage groups of PPAs, for-profit owners such as ecotourism companies, research entities such as universities and field stations; or religious entities.

Several defining criteria for PPAs can be derived from this definition. In order to be considered a PPA, the land or sea:

1. must be recognized, dedicated and managed as a protected area;
2. must have nature conservation as the primary function of its protection status. This can include areas with other goals as well, but in the case of conflict, nature conservation will be the priority
3. must be dedicated to nature conservation in the long term, either through legal designation as a protected area, through a permanent or renewable binding agreement (e.g., conservation covenant/easement) or through governance by an organization with clear perpetual conservation objectives (e.g., as stated in its articles of association);
4. must be governed by a private entity. This excludes protected areas under public or shared governance. Governance in this context is understood as having decision making power over the establishment of a PPA; the long-term goal (vision), the management objectives; the adoption of

[9] https://dopa.jrc.ec.europa.eu/kcbd/dashboard/#Target%201
[10] https://www.apache.be/2021/03/08/blauw-bloed-heerst-over-vlaamse-grond
[11] https://www.natuurpunt.be/pagina/over-natuurpunt
[12] https://www.natuurmonumenten.nl/waar-we-voor-staan
[13] https://parksjournal.com/wp-content/uploads/2018/07/PARKS-24-SI-Mitchell-et-al-10.2305-IUCN.CH_.2018.PARKS-24-SIBAM.en_.pdf

a management plan and/or system; deciding who will implement the management; ensuring adequate human and financial resources.

The question of how a PPA is recognized, dedicated and managed, is dealt with differently in EU Members States. A few member states explicitly mention PPAs as a category in their national nature conservation laws and foresee a formal process for their designation and recognition (e.g., Portugal, Belgium and Slovakia). In the majority of Member States, no such official categories or procedures exist. In these cases, publicly designated protected areas (e.g., nature reserves or Natura 2000 sites) under private governance can be treated as de facto PPAs, when their long-term dedication to nature conservation objectives and the proper governance and management for these objectives is ensured. The IUCN's PPA Guidelines acknowledge the existence of "many instances of shared governance arrangements that involve private governance in combination with other governance types, depending on the legal and institutional context for conservation in any country".[14]

Larger protected areas can have several governance types within them. On the other hand, not all private land conservation initiatives can or should thus be treated as PPAs or should become PPAs. Where nature conservation is not the primary aim of the site management or is limited to the protection of parts of a larger property, e.g., in the case of set-aside areas as part of responsible forestry operations or landscape features on agricultural properties, such areas would not be considered as PPAs.

OECMS

In November 2018, the Parties to the CBD adopted a definition of an 'other effective area-based conservation measure' (OECM) and created guiding principles, common characteristics, and criteria for identification of OECMs (CBD/ COP/DEC/14/8). According to Decision 14/8 an OECM is defined as "a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the *in situ* conservation of biodiversity with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values.''

In contrast to protected areas, OECMs do not need to have conservation as their main objective as long as they are able to deliver the conservation target. They may be managed with conservation as a primary or secondary objective or long-term conservation may simply be the ancillary result of management activities.

The IUCNs WCPA has also provided in depth guidance on OECMs.[15] The guidelines provide a screening tool to identify 'candidate OECMs', an indicative list of examples of potential OECMs and of areas unlikely to meet the criteria. Screening and the subsequent assessment must be carried out on a site-by-site basis to ensure that areas meet the criteria for delivering effective conservation over a long-term period. The following four steps must be applied and passed in order to be considered a OECM candidate:

1. Ensure that the area is not already recognized and/ or recorded as a protected area.
2. Ensure that the area has the essential characteristics as defined for OECMs.

[14] https://parksjournal.com/wp-content/uploads/2018/07/PARKS-24-SI-Mitchell-et-al-10.2305-IUCN.CH_.2018.PARKS-24-SIBAM.en_.pdf
[15] https://portals.iucn.org/library/node/48773

3. Ensure that the conservation outcome will endure over the long-term.
4. Ensure that an in situ area-based conservation target (e.g., Aichi Target 11), as opposed to a sustainable use target, is the right focus for reporting.

As with PPAs, EU Member states have to determine how OECMs are recognized, dedicated and managed. Existing guidelines could be used by Member states to identify areas that would qualify as an OECM. However, some further clarification is lacking on how to monitor and report on OECMs, e.g., what the monitoring entails and how often the reporting should occur.

3. Reporting on privately protected areas in Europe

In this section we explain the process of designating protected areas in the European Union. We discuss two sources that currently feed into the WDPA, namely Common database on Designated Areas (CDDA) and the Natura 2000 network.

Process of designating protected areas in Europe

In May 2020, the European Commission adopted a new EU Biodiversity Strategy setting out a comprehensive package of actions and commitments to redouble Europe's efforts to protect and restore biodiversity by 2030. In this context, the strategy calls on Member States to

- protecting at least 30% of the EU's land area and 30% of its seas for nature by 2030. At least one third of this (10% of land and 10% of sea) should be strictly protected.
- ensure that, by 2030, there is no further deterioration in conservation trends and status of habitats and species protected by the EU Nature Directives. In addition, Member States must ensure that at least 30% of species and habitats, not currently in a favorable status, reach that category or show a strong positive trend by 2030.

By 2022, EU Member States had to submit a set of pledges reflecting their commitment to these targets, also indicating which areas they want to use for the protected areas target. For each terrestrial or marine biogeographical region present within a Member State, they were asked to indicate the area currently covered by protected areas that fulfil the criteria in the relevant Commission Guidance (Natura 2000 or nationally designated already reported in CDDA, but without double counting of overlapping areas), and the area that they expect will be covered by 2030. No Member State was able to meet that deadline. EU Member States claim that they have failed to meet the deadline because of a lack of data, expert capacity, and the length of the governmental endorsement process.[16] In July 2023 only Denmark, Germany, Luxembourg, Spain and Sweden had submitted their pledge on protected areas, most of them are still awaiting the final feedback. Only the data of Denmark and Sweden are publicly available and on first sight neither mention private area or OECMs.[17]

In the meantime, they are expected to report regularly on their proceedings through the European Environment Information and Observation Network (EIONET). This is a network of focal points in 38 Member States and the European Environment Agency (EEA) who collects all received data in the Common database on Designated Areas (CDDA). The data of the CDDA is then used as the official source of protected area information from the European Member States to the WDPA.

[16] https://europe.wetlands.org/news/eu-member-states-missed-the-extended-deadline-for-biodiversity-pledges/
[17] https://reportnet.europa.eu/public/dataflow/703

European countries designate protected areas under sub-national, national and EU legislation as well as under international conventions and agreements. This makes that the designation of additional protected and strictly protected areas is a responsibility of the Member States.[18] However, according to the EU Biodiversity strategy, the designation of additional protected areas should either help to complete the Natura 2000 network or be under national protection schemes (Brussels, 28.1.2022 SWD (2022)). Whether the long-term commitment is reached through a formal legal designation, an administrative act or contractual means depends on existing national practices and on a case-specific analysis of the most effective tool and opportunities. This may concern public land but also private land conservation commitments, only if there is an administrative or contractual arrangement with a minimum duration that is set on the basis of the ecological requirements of the species or habitats to be protected.

Although officially recognized, there are no OECMs yet recorded in the Protected Planet database for Europe. OECMs can be reported as a separate category, but this is not often used. The EEA attributes this to the fact that OECMs are a new tool, and Member States still have to get used to the concept and the way of reporting them.[19]

Member States have agreed to submit their pledges on protected areas, which aims to cover 30% of the EU's land and 30% of its marine areas by 2030. The countries should have submitted their pledges originally by the end of 2022, but none of them made the deadline. EU Member States claim that they have failed to meet the deadline because of a lack of data, expert capacity, and the length of the governmental endorsement process.[20] In July 2023 only Denmark, Germany, Luxembourg, Spain and Sweden had submitted their pledge on protected areas, most of them are still waiting the final feedback. Only the data of Denmark and Sweden are publicly available and on the first sight none of them mention private area or OECMs.[21]

Natura2000

The EEA states that about 80% of Europe's land surface has been shaped by human activities: covered with buildings, roads, industrial infrastructure or used for agriculture. Europe is one of the most intensively used landmasses on the globe, with the highest share of land used for agriculture, forests and, to a lesser extent, urban areas and infrastructure.[22]

Stretching over 18% of the EU's land area and more than 8% of its marine territory, Natura 2000 is the largest coordinated network of protected areas in the world (European Commission, 2023). Natura2000 designated areas are directly counted into the global Protected Planet database.

Noteworthy is that Natura2000 is often accused of its lack of quality.[23] In the end, the real conservation status of PAs is always a function of management effectiveness, so even the expertly designed ecological network such as Natura 2000 is pointless without adequate enforcement and governance. Only if PAs

[18] SWD(2022) 23 Final COMMISSION STAFF WORKING DOCUMENT Criteria and guidance for protected areas designations
[19] https://www.eionet.europa.eu/news/cdda-data-collection-2023
[20] https://europe.wetlands.org/news/eu-member-states-missed-the-extended-deadline-for-biodiversity-pledges/
[21] https://reportnet.europa.eu/public/dataflow/703
[22] https://www.eea.europa.eu/en/topics/in-depth/land-use#:~:text=About%2080%25%20of%20Europe's%20land,infrastructure%20or%20used%20for%20agriculture
[23] https://link.springer.com/article/10.1007/s10668-022-02813-6

are large enough, well connected, representing diverse habitats or properly managed, can they be successful in protecting threatened species compared to other land uses.

4. Country case studies

The following part provides some insight on the protected area designation procedures in different Member States and might give an insight in what to expect from Member State pledges related to PPAs and OECMs. The case studies are based on expert interviews and a deep dive into the Protected Planet and EEA database.

Catalonia, Spain

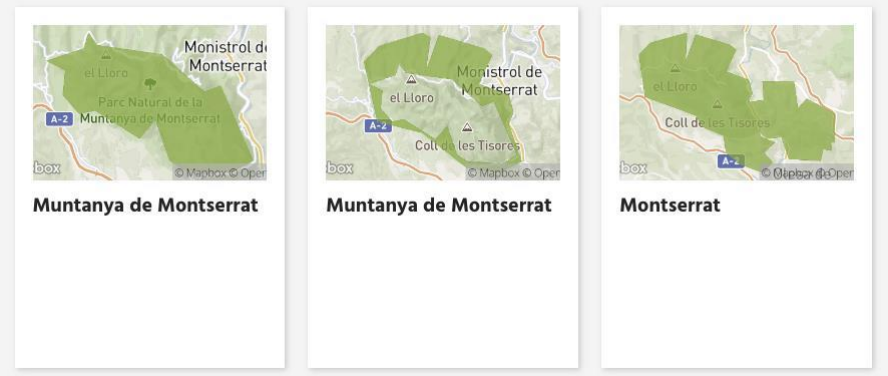
Interview with Mathias Brummer, *XCN*

Neither the Spanish legislation nor the national biodiversity law has a specific definition on PPAs. However, at county level, the autonomous communities of Spain have different degrees of implementation.

In Catalonia, according to the law of 1985 it is possible to recognize privately protected areas under private governance. However, there is no specific regulation of the law from 1985 (how to implement it practically) and there is no procedure on how to implement it. To XCNs knowledge its implementation if everything works out smooth would take at least 2 years (as of when the LO demands its recognition). Hence there is a very high transaction cost. Moreover, there are no incentives to implement PPAs for LO. A first step to institutionalize PPAs as tools and to help mainstream it would be to create regulations and procedures on how to officially declare PPAs, which currently don't exist on either national or Catalan level. A procedure has been developed for OECMs between XCN and public authorities.

Identified issues from Protected Planet database

The same protected areas seem to appear multiple times in the Protected Planet database. As is for example the case for the Montserrat protected area. The area is once included in the database as split into two areas and once as a whole.[24]



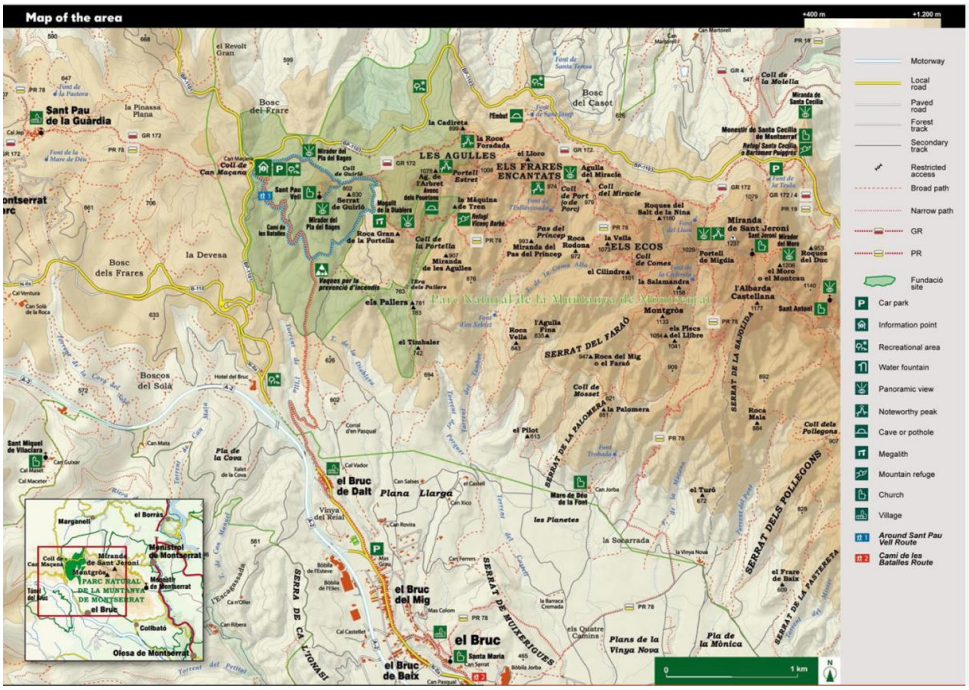
The same area is also included twice in the European Environment Agency database. This can be explained as the area is submitted once via the Natura2000 database and once as part of CDDA reporting. Natura 2000 network and CDDA sites are to some degree overlapping,[25] however it is not

[24] https://www.protectedplanet.net/en/search-areas?search_term=montserrat&geo_type=site
[25] https://www.eea.europa.eu/data-and-maps/figures/degree-of-overlap-between-terrestrial

clear if these areas that are included within both data source set also count twice to the overall protection target in the Protected Planet database.

Source data set	Country	Site name	Designation type	Longitude	Latitude	Size(ha)
CDDA National	Spain	Montserrat	Plan Especial de Protección (PEIN)	20.000000	20.000000	5884.67
Natura 2000	Spain	Montserrat-Roques Blanques-riu Llobregat	n/a	1.842300	41.587600	7263.19
CDDA National	Spain	Muntanya de Montserrat	Reserva Natural Parcial	20.000000	20.000000	1767.25
CDDA National	Spain	Muntanya de Montserrat	Parque Natural	20.000000	20.000000	1739.85

The Montserrat protected area also includes a section that is privately owned and managed by Fundacio Catalunya La Pedrera.[26] That area is highlighted in green:



Germany

Interview with Tilmann Disselhoff, NABU

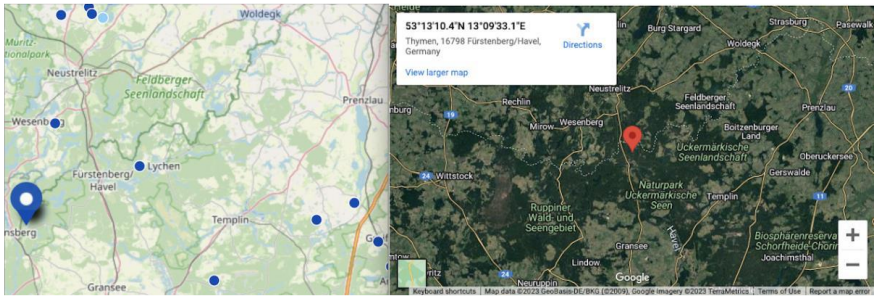
Up to this date, there is no reporting of PPAs in the German system hence, PPAs are not defined under the national law, recognised, designated or managed. A new regulatory framework would need to be developed including legal and administrative guidance on how to define, designate and report PPAs. As the IUCN framework is considered a well-working mechanism, their established guidelines could be used to facilitate setting up standards for the recognition of PPAs in different EU Member States including Germany.

Identified issues from Protected Planet database

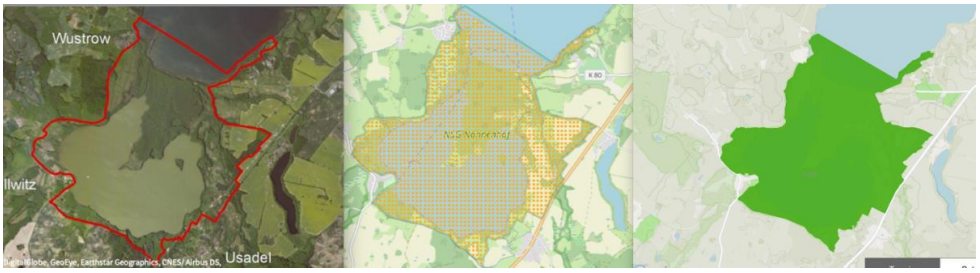
To some degree there is a knowledge gap on privately protected areas. NABU, the largest nature conservation NGO in Germany shares an overview of its protected areas via their foundation's website (map on the left)[27]. However, that website does not include areas owned and managed by some of

[26] https://www.fundaciocatalunya-lapedrera.com/sites/default/files/2020-07/MCM_fullet_mapa_eng.pdf
[27] https://naturerbe.nabu.de/naturparadiese/auf-einen-blick/gebietskarte.html

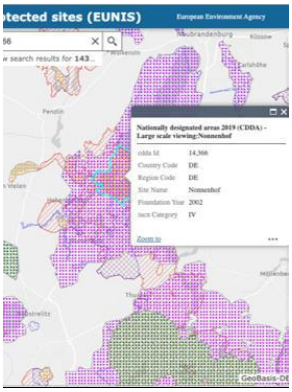
NABUs regional chapters (example on the right).[28] It is unclear to which degree this reflects a issue with the reporting stream.



Additionally, there are some areas that are managed and owned by NABU included in the Protected Planet database. As is for example the case for 'Nonnenhof'. On the left is the area that NABU illustrates as its protected area Nonnenhof[29]. The same map and area are then included in the EEA database[30] (middle) and in the Protected Planet database[31] (left). On the Protected Planet database the governance type is listed as 'Federal or national ministry or agency', which NABU is not.



This area is most likely included as it is located within a Natura 2000 area, which thus automatically is reported. However, the Natura 2000 area of which it is a part of, did not get reported as a whole, but instead only the area managed and owned by NABU. The map on the right shows in pink the Natura 2000 area. Outlined in blue is Nonnenhof.



Netherlands

Interview Rene de Bont, FPG

In the Netherlands the protection of nature is the same for NGO and private areas owned by individuals. The same requirements and subsidies are available. The Netherlands has the National Ecological Network which is made up of existing and planned natural areas. The aim of the network is to connect natural areas. The network includes 20 national parks, nature-friendly agricultural land, over six million

[28] https://www.nabu-gransee.de/unsere-fl%C3%A4chen/thymen/
[29] https://data-naturerbe.nabu.de/schutzgebietssteckbriefe/Nonnenhof.pdf
[30] https://eunis.eea.europa.eu/sites/14366
[31] https://www.protectedplanet.net/14366

hectares of water and all natura 2000 areas. There is no difference between these types of protected areas on the maps of the provinces.

There is a monitoring program for both the National Ecological Network and Natura 2000. This is done in partnership between NGOs and private owners in the monitoring programme. The results are collected by the province and shared with the ministry. PPAs are likely to be reported as they are included in official reporting schemes like the National Ecological Network.

Identified issues from Protected Planet database

It indeed seems like privately protected areas get reported as private by the Netherlands to the EEA database. That is for example the case with the 'Hoge Veluwe'. Listed as nationally designated area, the EEA database categorises it as private statue[32].

Designation information

The Nationally designated areas inventory, also known as CDDA, began in 1995 under the CORINE programme of the European Commission. It is now one of the agreed annual Eionet priority data flows maintained by the European Environment Agency.

National designation

Code	Designation name (Original)	Designation name (English)	Category	Date
NL22	Nationaal Park	National Park	Private statute providing durable protection for fauna, flora or habitats (Code C)	1934

However, this status does not translate into the protected Planet database where it is wrongly categorised as 'Federal or national ministry or agency'[33].

Attributes

Original Name	De Hoge Veluwe
English Designation	National Park
IUCN Management Category	II
Status	Designated
Type of Designation	National
Status Year	1934
Sublocation	
Governance Type	Federal or national ministry or agency
Management Authority	Not Reported
Management Plan	Not Reported
International Criteria	Not Applicable

Belgium

Interview Valérie Vandenabeele, APB

As of 2017 the region of Flanders manages nature through one type of plan – the nature management plan. The management plans include all former existing plans like forest management plans, nature reserve management plans, park management plans etc. Private owners, nature organisations and (local) governments can draw up a nature management plan for an area, and the procedure is the same for everybody; Governments, organisations and private owners use the same system and get equal

[32] https://eunis.eea.europa.eu/sites/331632
[33] https://www.protectedplanet.net/331632

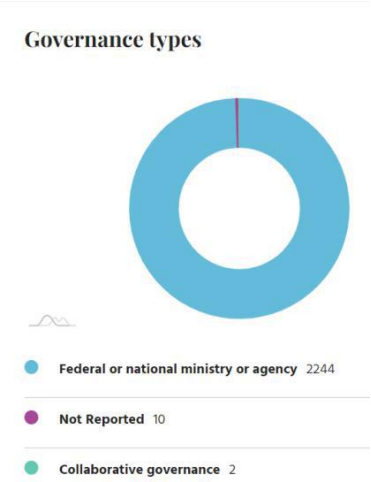
opportunities from it. This was a progressive evolution as one type of plan gives the advantage of a single approval procedure for all types of nature (forest, heath, open green space, …) independently of who submits it and offers an equal access to subsidies and other benefits for everybody.

A nature management plan is valid for 24 years – with evaluation every six years. There are four types of nature management plan one can apply for. Type 4 has the highest ambition, it defines a nature reserve and includes an easement. Type 3 has the objective of implementing 90% of Natura2000 objectives. Type 2 has the objective of achieving 25% Natura 2000 objectives. Which plot of nature falls under which type depends on the ambitions of the nature conservator. However, if a plot of nature is located in a special protection zone or in a recognized Ecological Network area, it must minimally meet all type 2 requirements. In any case each type needs to take into account the three pillars – people, planet, profit. If the land is sold, the nature management plan transfers to the new owner. Types 3 & 4 nature registered in the global system received the IUCN IV category (nature reserve).

The Agency for Nature and Forestry approves and registers the management plans. In June 2023 there were 675 Nature plans accepted from which almost 40% are on private land, 833 plans are still in transfer from other nature plans to the new management plan. In the protected Planet database, there are 1096 national protected area designations registered in the Flemish area, which is several hundreds less than registered in the Flemish database. Most of this gap can be explained by a backlog in data flow between the Flemish and European level. What is more concerning is that all protected areas are currently registered in the global system as governed by 'Federal or national ministry or agency'. Even if they were privately owned/managed or managed by a conservation organization and registered as such in the Flemish records.

Identified issues from Protected Planet database

PPA data is incorrect in the global database under the wrong governance type. The protected planet (Global) categorizes 99% of the Belgian protected areas as governance type 'Federal or national ministry or agency'. In Flanders region almost 40% of the protected areas are categorized as 'private'. The protected Planet database thus gives a wrong image of who has the governance over the protected areas. An issue found in the Flemish system is that when an agreement was made for nature conservation on private land between a landowner and a conservation organization, the area is designated as managed by a conservation organization, losing the information on how much protected land is under private ownership. This information is then again lost transferring the data to the global system where it says that all protected areas are government by the 'Federal or national ministry or agency'.



An example is the protected area 'Mommaertsbos' which is identified in the national dataset with 'Privately managed' (PR, Private).\

Nr	Name area	Type nature management plan	Manager	Opp. (ha)	Date of approval
NBP-VB-18-0044	Mommaertsbos	2 en 3	PR	17,9	20/05/2020

The privately protected area 'Mommaertsbos' is included in the European Environment Agency database and on the protected planet site, but it doesn't mention the private governance as illustrated below.

National designation

Code	Designation name (Original)	Designation name (English)	Category	Date
BE18	Gebieden met natuurbeheerplan type 3	Nature management plan type 3 (Flemish Region)	Designation types used with the intention to protect fauna, flora, habitats and landscapes (the latter as far as relevant for fauna, flora and for habitat protection) (Code A)	2020

The Protected Planet database mentions the Mommaertsbos wrongly with the governance type 'Federal or national ministry or agency'[34].

Attributes

Original Name Mommaertsbos

English Designation Nature management plan type 3 (Flemish Region)

IUCN Management Category IV

Status Designated

Type of Designation National

Status Year 2020

Sublocation

Governance Type Federal or national ministry or agency

Management Authority Not Reported

Management Plan Not Reported

International Criteria Not Applicable

5. Problem statement [Why?]

Today, PPAs are recognised under different definitions and legal protection categories, depending on the country, region or legal framework. Monitoring of PPAs and the recognition of their contribution to the conservation efforts of the EU Member States is an issue at both European and global level. PPAs and OECMs already contribute significantly to achieving these targets and have considerable up-side potential but lack recognition. In turn lacking recognition may act as disincentive for private landowners to report privately protected areas.

The official reporting streams seem to fail to capture many contributions from PPAs (e.g.to the implementation of the Natura 2000 network) and do not give them the proper credit. This shortcoming

[34] https://www.protectedplanet.net/333227

has been recognised by the UNEP WCMC, who has pioneered efforts to properly map and report privately protected areas e.g., in the UK, resulting in a registration of more than 3,600 new PPAs with a total of almost 500,000 ha. Overall, it seems that the existing mapping still has several shortcomings, giving a wrong image of the current area coverage and governance.

With this assignment we have identified the following issues in the global database 'Protected Planet':

- PPAs and OECMs are not always recognized on national level which makes that there is no data available to report, even when private conserved areas exist in the country
- PPA data exists on national level, but is not reported to the EU and/or global dataset
- PPA data is incorrect in the global database; wrong governance type, no management authority indicated, PPAs are included in bigger nature areas identified as publicly managed
- PAs are double counted in the database when they are recorded through different designations e.g. Natura2000 and CDDA. A clear guidance on what to do with areas with overlapping recognition is however clearly described in the 'Guidelines for reporting pledges to protected areas[35]

Not addressed as part of this research is the question on monitoring of protected areas. To address current issues regarding the quality of management, the European Commission issued a call for proposals to develop an EU system to assess management effectiveness of Natura 2000 sites and other protected areas (EU PAME - protected area management effectiveness)[36].

6. International workshop to boost PPAs scaling [What?]

A roundtable with experts has been held in 2022 as part of the LIFE ENPLC[37] project to identify current issue in reporting of PPAs. The experts included: Jurgen Tack, Joseph van der Stegen, Brent Mitchell, Tilmann Disselhoff, Miquel Rafa Fornieles, Sue Stolton and Angelo Salsi.

With their expertise the following action plan was set up to boost PPAs scaling and recognition in Europe:

ACTION 1: Definition of PPAs in Europe

Starting from the IUCN definition, we will assess if addition to this definition is needed to fit to the targets of the EU Biodiversity Strategy

ACTION 2: Assessment of PPA procedures in the Member States

- Getting an overview of what is going on in different Member States
- Get engaged with the IUCN European sub-group to exchange views regularly
- Assess the potential for a standardised European procedure for recognising PPAs and OECMs(!)

While doing this we will avoid institution building and focus in the first phase on informal meetings with experts.

[35] https://cdr.eionet.europa.eu/help/pledge/Documents/guidelines
[36] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/life-2023-plp-nat-env
[37] https://enplc.eu/

ACTION 3: Identify and support successful examples

- Identify which countries already have a good system in place (using existing data)
- Offer countries who have PPAs in place support (if capacity is available), preferably by bringing them in contact with other Member States e.g., advise on recording system, assist in submitting PPA overviews, support to fulfil EC requirements,…
- Get in touch with progressing initiatives for support and awareness raising
    - e.g., initiative of WWF Poland hosting a local PPA meeting
    - e.g., Spain (e.g., register of PPAs in Catalonia)
    - e.g., Belgium one nature management plan type equal for all stakeholders

ACTION 4: Awareness raising on the EU PPA concept

- Create political visibility on PPAs as a concept in EU
    - Letter to Member States to remind them that PPAs can contribute to reach the targets
    - Support the inclusion of OECMs and PPAs in new strategies and laws
- Promote the use of a PPA label if certain criteria on the area are met but a different label/name is used
- Make sure networks are aware of the work

7. How?

As the next step we propose a workshop to discuss the aforementioned topics. By bringing together the right audience in a workshop we believe that we can advance on all four action points.

For example, some best practices that include PPAs will be introduced. These could immediately act as inspiration to other Member State Representatives. We may also be able to learn from the Member State representatives about the existing definition of PPAs in their country and if/how they can be included in their pledges. We propose the following target audience:

- MS representatives involved in putting together the pledges
- Professionals with a link to (private) protected areas in Europe and abroad
- EC representatives

Other relevant audience:

- Landowner associations and conservation NGOs
- …

8. Who is involved?

The workshop ideally will be organised in partnership by the European Landowners Organisation (ELO), the European Land Conservation Network (Eurosite), the European Commission's Expert Group on the Birds and Habitats Directive (NADEG), the IUCN's World Commission on Protected Areas (WCPA), the International Land Conservation Network (ILCN) and experts on key topics such as, inter alia, Jennifer Krämer (NABU), Jurgen Tack (ELO), Josep Maria Mallarach (UNAV), Helen Klimmek (UNEP-WCMC) and Olivier Hymas (IGD). The mentioned experts and organisers also represent the desired target audience.

9. When?

The workshop will be held in November/ December 2023 in the afternoon CET to accommodate different time zones. Furthermore, the time of the event will be connected to the Member State pledges

which is still an ongoing process and is supposed to end December 2023. This refers to a process that was launched for the EU Member States to submit pledges reflecting their commitment to the targets requiring the Member States to indicate in the Nationally designated areas (CDDA) which protected areas they want to use for this. The workshop will also take place before the COP16 in 2024.

10. How much?

For the project we are calculating staff costs for organising the workshop, speaker fees and promotion. We will need a platform to technically accommodate the event. IUCN structures may be able to support the technical organisation. Finally, we this event will be co-financed by the EU's LIFE programme.

11. So what?

The impact we aim for is that PPAs and OECMs are recognised in Europe to the full extent. Organising a workshop will contribute to sharing experiences and expertise. We want to open discussion between the Member States to find a way to implement PPAs and OECMs in their national legal systems so that they can be recognised and reported equally. Ideally, the process would continue after the workshop and moreover, speed up the actions of the Member States.

Why does ownership matter? Technically, to get an overview of the percentage of protected areas, it is not relevant who protects them, thus the information in the protected area database that is wrong/missing should not be that important, BUT it takes away the recognition of the contribution of private actors. Which is a key motivator for these actors to protect land and report on the biodiversity values. Recognition is key, but in many cases so are the incentives for the landowners and managers.

Why having the discussion is important:

- Raise awareness to EU Member States on the existence of the tool. PPA recognition is important for them as it can ease their process to reach the 30%-10% targets (less public land under protection needed)
- Member might not be able to reach the targets without including PPAs (or buying more land to put under protection can be more expensive)
- Recognition for landowners, land can stay in private ownership and still contribute to the targets
- Seeing the landscape as a whole – the saying 'nature knowns no boarders' but applied to public and private land
- Having a broad toolbox to find the right tool for each case
- Excluding PPAs from official reporting creates a lack of knowledge regarding protected areas (e.g., current issue in EU: we don't even know how many areas in natura2000 are privately owned[38])
- Contribute to the objectives of the IUCN WCPA PPA Specialist Group

Why does reporting matter?

Reporting on protected areas is key to keeping track of the progress made towards biodiversity targets. Besides this, reported data on the governance types of protected land should contribute to the

[38] https://www.iucn.org/our-union/commissions/group/iucn-wcpa-privately-protected-areas-and-nature-stewardship-specialist#:~:text=A%20Privately%20Protected%20Area%20(PPA,non%2Dgovernmental%20organizations%20(NGOs)%3B

awareness raising of private investments in nature conservation. Privately protected areas provide the opportunity for voluntary contributions to conservation, complementing the role of governmental agencies, indigenous peoples and communities in caring for nature, and should thus be motivated. In order to do so, there should be a general recognition for private initiatives on protected lands. Besides, reporting on privately protected areas in general could be improved and may benefit from being included in accounting efforts as the protected planet provides. For example, the percentage of natura2000 areas in Europe in private ownership is not known. Standardised procedures to account for privately protected areas could thus be of advantage.

13. What's next?

This assessment will be used as basis to propose this workshop to the IUCN.

5.2 The Arbolitos Project

Pepe Iracheta, Founder and Project leader, Claudia Viloria, Co-founder

Summary

This project is located in the northern region of the state of Puebla, Mexico; and seeks to establish, in an initial plot of between 270 and 430 acres (approx. 110 and 175 hectares), with the goal of reaching 2,471 acres (1,000 hectares) within 10 years; an effective and replicable climate change mitigation mechanism through the restoration and reconversion of rural forest lands, that have undergone land use changes (from forest to agriculture), suffering active deterioration processes, and facing pressures from changes to urban land uses (irregular subdivisions); in which an applied model of sustainable forest management will be developed. The proposed model seeks to restore and conserve the forest masses, based on a comprehensive approach that balances the health and richness of forest ecosystems,

with a scheme of forest management and harmonious tourism of natural experiences that finance the care, maintenance and gradual expansion of the area occupied by the forest. This model also considers the development of spaces for environmental education, especially for local communities, and scientific research on forest management, emphasizing the role played by mycorrhizal networks, that will also serve to strengthen the management model itself.

This project considers the following elements:

1) **Mitigation of climate change** by the establishment of an effective and replicable forest management mechanism, which allows the recovery, conservation and expansion of Mexico's forests, highlighting their role as carbon sinks.
2) **Restoration and conservation** of the ecosystemic qualities of the forest, favoring the subsistence and strengthening of mycorrhizal networks.[39]
3) **Harvesting of forest products** (timber, resins, and other products) under a sustainable scheme that does not jeopardize the continuity of the ecosystemic qualities.
4) **Generation of scientific knowledge**, mainly related to forest management and its mycorrhizal networks.
5) **Promotion of environmental education and culture to raise awareness** among the local population about the importance of forest ecosystems, stopping land use changes and, finally, to build an alternative forest management model together with local communities, ejidos and landowners.

[39] A mycorrhizal network is the result of the symbiotic relationship formed between plant roots and certain soil fungi. This relationship allows, under certain conditions, a free flow of nutrients to the host plants and between the roots of the interconnected plants, suggesting that mycorrhizae establish a large below-ground union between plants that, at first glance, might seem distant and unrelated. With information from: Camargo-Ricalde et al. (2012). Micorrizas: una gran unión debajo del suelo, Revista Digital Universitaria. 1 de julio de 2012, Vol. 13, No.7. Available at: http://www.revista.unam.mx/vol.13/num7/art72/index.html

About us

Pepe Iracheta

Founder and project leader

Pepe grew up surrounded by trees and with a very strong sense of the importance of transforming people's relationship with forests. He is dedicated to the practice of land and environmental public policy, and he accompanies his professional practice with activism from a project approach, and a fight for the defense of forests, water, and ecosystems.

Claudia Viloria

Co-founder

Claudia is an expert in project planning and management, as well as in promoting initiatives that advance the rights and well-being of all. She is a believer in working with key actors from every sector to be able to promote holistic projects, for the betterment of our future.

Carlos Mendieta

Co-Founder and Director of Fundación Tláloc

Carlos is a social builder who is concerned with empowering people so that they can achieve their own dreams. He has a special interest in generating alliances, increasing collaboration between the different sectors of society, and dialogue processes that allow the participatory construction of agendas that contribute to global sustainability.

FUNDACIÓN TLÁLOC
Trabajando por la Sustentabilidad Glocal

Fundaciontlaloc.org

Tláloc Foundation is a civil society organization that works towards building environmental citizenship to achieve a sustainable future for Mexico; with social, economic, and environmental justice. In order to develop and promote our projects, we empower people to become leaders with the ability to lead them autonomously, acting with the support and guidance of the Foundation.

SIIRA Model

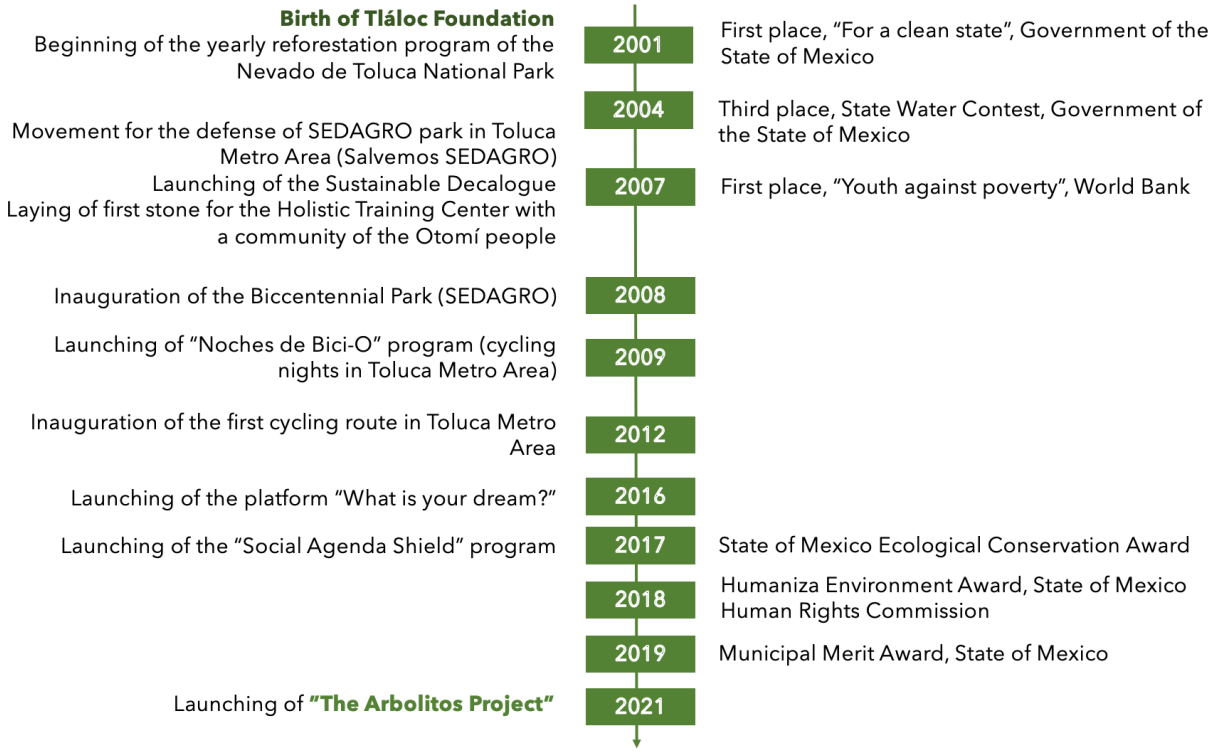
We use the SIRAA methodology, which was developed by the Tláloc Foundation over several years, in order to build sustainable citizenship and to generate projects with a positive impact on their communities. This method has gained its strengths from the experience of working with an indigenous community on a joint project. Its basic goal is the building of capacities and the empowerment of local actors, who are part of a group within public and private institutions, social organizations, or a particular community.

The steps of the SIRAA model are as follows:

Sensibility	First, the senses are awakened to reinterpret realities and open new approaches to different problems.
Information	This leads to the desire to know more about what you want to change. The information provides the power to know the reality that was previously problematized and studied.
Reflection	Afterwards, we contrast perceptions and the information we receive to form our own opinion, as well as to generate ideas and proposals.
Action	Then, we put these ideas into practice, which is a key part of the process. Each of us must become an individual protagonist and achieve collective action, as well as question and adapt our own daily actions.
Learning (Aprendizaje)	Finally, we must deepen our understanding of the impact and value of our actions and projects, as well as the effects and consequences that we had not anticipated, to redesign and strengthen our strategies.

It is essential to build projects from the bottom up, with the community and with a gender perspective, under a scheme of empowerment and inclusion, which generates an alignment of the interests of the members towards the maintenance of the project in the long term. And that's what the SIIRA Model will do in this project.

Milestones and awards



National context

This project seeks to contribute to meeting the Global Biodiversity Framework's Target of 30x30 (30% of Earth's land and sea under conservation schemes by 2030), as well as Mexico's commitment to reduce net CO_2 emissions within the framework of the Paris Agreement and subsequent COPs, from an approach focused on addressing the problems related to climate change and forest management in Mexico. In terms of the problems and effects of biodiversity loss and climate change, at the Conference of the Parties (COP) 27 of the United Nations Framework Convention on Climate Change, Mexico increased its commitment to reduce greenhouse gas (GHG) emissions by 2030 from 22 to 35% with respect to its baseline.[40]

To achieve this, it is essential to strengthen the implementation of the National Strategy for the Reduction of Emissions from Deforestation and Forest Degradation (ENAREDD+), which is directly related to the capacity to sequester carbon through the land use sector, changes in land use, and forestry (USCUSS). According to the Climate Change Information System (SICC) of the Mexican National Institute of Ecology and Climate Change (INECC), the total biomass of forests and forested lands was 7,223 million tons of CO2 in 2010.[41] According to Mexico's latest national inventory of greenhouse gas and pollutant emissions (INEGCEI), the USCUSS sector is a net sink of 148 million tons of CO2eq, which

[40] Nationally Determined Contributions for Mexico, 2022 update. Available at: https://unfccc.int/sites/default/files/NDC/2022-11/Mexico_NDC_UNFCCC_update2022_FINAL.pdf

[41] INECC, Sistema de Información sobre el Cambio Climático, Suelo. Available at: http://gaia.inegi.org.mx/sicc/#

represents almost a quarter of the total GHG emissions of all sectors in the country.[42] Furthermore, the Sixth National Communication to the United Nations Framework Convention on Climate Change (UNFCCC)[43] states that Mexico's forestry sector is the main net carbon sink, with a capacity to absorb up to 24% of national emissions. Potentially, by 2030 Mexico's forests could absorb an additional 46 million tons of CO2eq, corresponding to 23% of the national target. However, this potential will depend on halting and reversing the processes of forest loss and degradation. This implies the need to promote sound forestry management actions throughout the country, but particularly in the regions facing the greatest deforestation pressure; promoting the regeneration of forest ecosystems, with special attention to natural regenerative processes. According to official figures from the National Forestry Program 2020-2024,[44] Mexico loses about 260 thousand hectares (approx. 642 thousand acres) of forest cover every year, mainly due to changes in land use, illegal logging, illegal trade of forest products, fires, forest pests and diseases, as well as inadequate forest management practices.

From the productive side of forest management, the National Forestry Program 2020-2024 states that Mexico produces about a third of the timber products it consumes, so the rest of the demand is met by imports, or products of illegal origin. These figures have two practical implications. On the one hand, inadequate forest management coupled with a lack of development of the sector has generated an inability of the industry to meet the demand for forest products, with the consequent emergence of illegal timber markets and the loss of competitiveness of authorized producers. On the other hand, Mexico has great potential and an opportunity to promote a transformation of forest management schemes in order to achieve a balance between production and care of forest ecosystems that, in turn, will make it possible to meet the demand. This balance should primarily consider natural regeneration, as well as the restoration, expansion, and conservation of forest ecosystems that support human activities and constitute the main CO2 sink in Mexico.

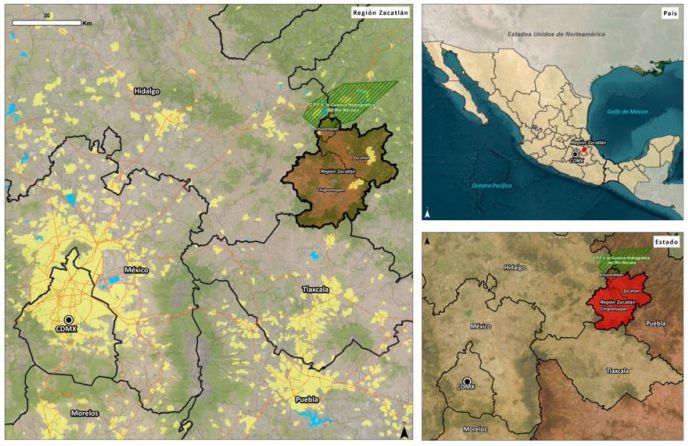
The weaknesses faced by Mexico's forestry sector can be explained, to a large extent, by a lack of coordination between the government and the agents of society involved in land and forest management. On one side, public policy, and in this case forestry policy, tends to be designed vertically, that is, from the federal or state governments, without effective consideration of the perspectives of the communities that these policies seek to address.

This means that no criteria are applied for the construction of policies and projects from the local communities' points of view. On the other side, within the communities themselves, there are important divergences between their members on how to better manage the forests. In rural areas, the exclusion of women from both paid work and decision-making within the family unit is of particular

[42] INECC (2018). Desarrollo de rutas de instrumentación de las contribuciones nacionalmente determinadas en materia de absorción ymitigación de gases y compuestos de efecto invernadero en el sector de uso del suelo y silvicultura en México.
[43] The Sixth National Communication to the United Nations Framework Convention on Climate Change. Available at: https://www.gob.mx/inecc/articulos/sexta-comunicacion-nacional-ante-la-cmnucc?idiom=es
[44] Programa Nacional Forestal 2020-2024. Available at http://www.dof.gob.mx/nota_detalle.php?codigo=5609275&fecha=31/12/2020

concern. Likewise, cooperation between members of a community, or even of the ejidos themselves, can be a source of conflicts that prevent the development of long-term projects, as in the case of forest management.

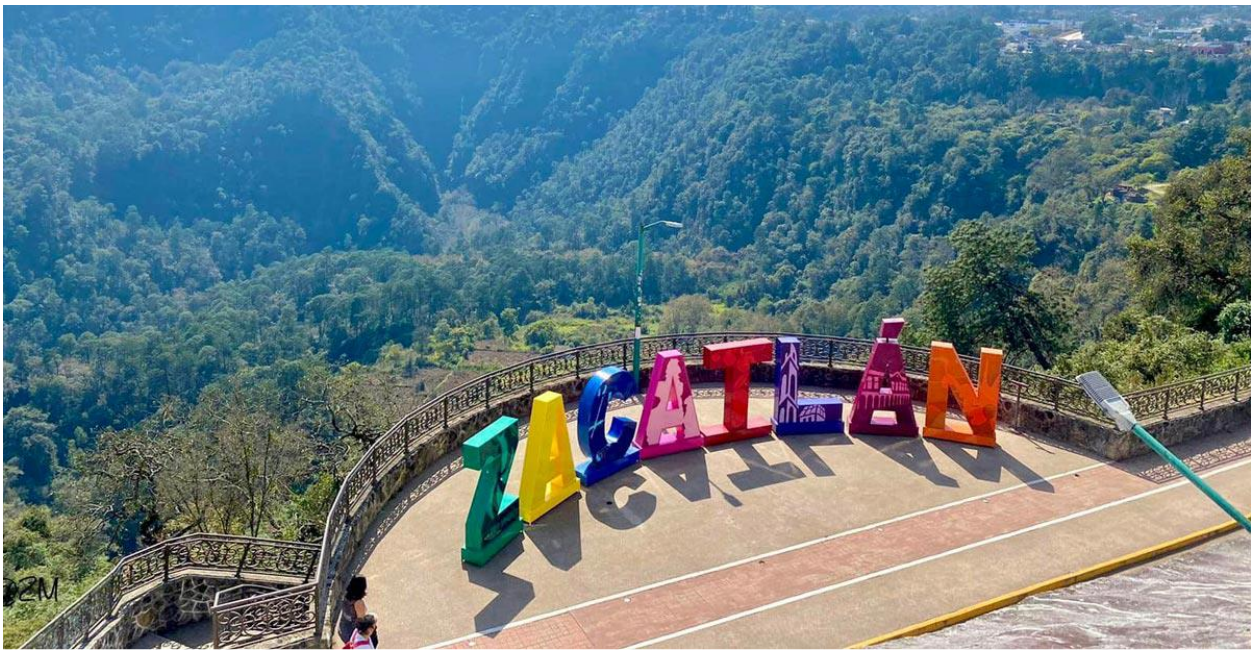
Local Context



The state of Puebla, which is where the area of interest for the development of this project is located, ranks sixth nationally (out of 32 states) in terms of deforestation risk, and the municipality of Zacatlan, Puebla, as well as the surrounding municipalities, face high and very high levels of deforestation risk according to INECC Economic Deforestation Pressure Index (improved model, 2018).[45] This problem shows the existence of speculative processes regarding land value that generate pressures to change land use from rural to urban, in addition to the expansion of the agricultural frontier and, in general, reflect unsound forest management practices that have caused constant losses of forest masses in the state of Puebla.

In particular, the towns of Zacatlan de las Manzanas and Chignahuapan are part of the federal program Pueblos Mágicos (Magic Towns), which provides funding for tourist-related infrastructure and improvement of public spaces and urban image. In addition, this program promotes its designated towns in order to attract visitors which, in the case of these two towns, has been very successful, especially considering that they are relatively close (within a 3-hour drive) to Mexico City, Puebla, Toluca and Pachuca metro areas, where more than 28 million people live. Even though this program has been the most important driver of economic activity in the region for the past decade, it has produced some indirect negative effects mainly related to renewed pressure for urban expansion and for land use change, both in the proximity of the urbanized areas, as well as in the more natural and productive surroundings.

[45] The Economic Deforestation Pressure Index by the Mexican National Institute of Ecology and Climate Change is available at: https://mapas.inecc.gob.mx/apps/irdef2018.html


ZACATLÁN

This phenomenon is compounded by a generational change, where older land owners, traditionally dedicated to working the land, have inherited the following generations. Unlike their parents, these new owners have grown separate from the land and have a more urban perspective; and many of them see the land as a potential source of wealth in the short term, and not as a means of production or conservation of the environment, much less a way of life.

Despite these social and economic changes, some groups that are concerned with the fast pace at which forest masses and productive land are being lost remain. For example, the Ocojala ejido, located on the municipal border between Chignahuapan and Zacatlan, Puebla, has set aside a portion of its territory to care for the forest ecosystems, and the ejido has been a beneficiary of various federal programs related to payment for environmental services (PES) and/or forest care. However, this project does not have other relevant sources of funding, so if they were to stop, the project would be vulnerable and would be under pressure to replace those with other funding sources not related to sustainable forest management, including logging and changes in land use that would directly affect the forests.

In short, this project seeks to contribute to addressing the problems of climate change and forest management in Mexico, with a focus on local interventions, promoting strategies to halt the loss and fragmentation of forest ecosystems in the municipality of Zacatlan, Puebla, which have occurred mainly due to insufficient and/or poor forest management, illegal logging and changes in land use from forest to agricultural or urban.

The project will serve to strengthen the national capacity to create net carbon sinks that contribute to reducing the rate of growth of GHG concentrations in the atmosphere, which are the cause of climate change. Finally, the project seeks to generate a supply of forest products of all types, produced under a scheme that cares for ecosystemic qualities and is sustainable in the long term. This will help reduce the pressure exerted by the demand for timber and other non-timber products, which results in illegal logging or short-term management of existing forests; thus favoring, from a production perspective, the subsistence of Mexico's forests.

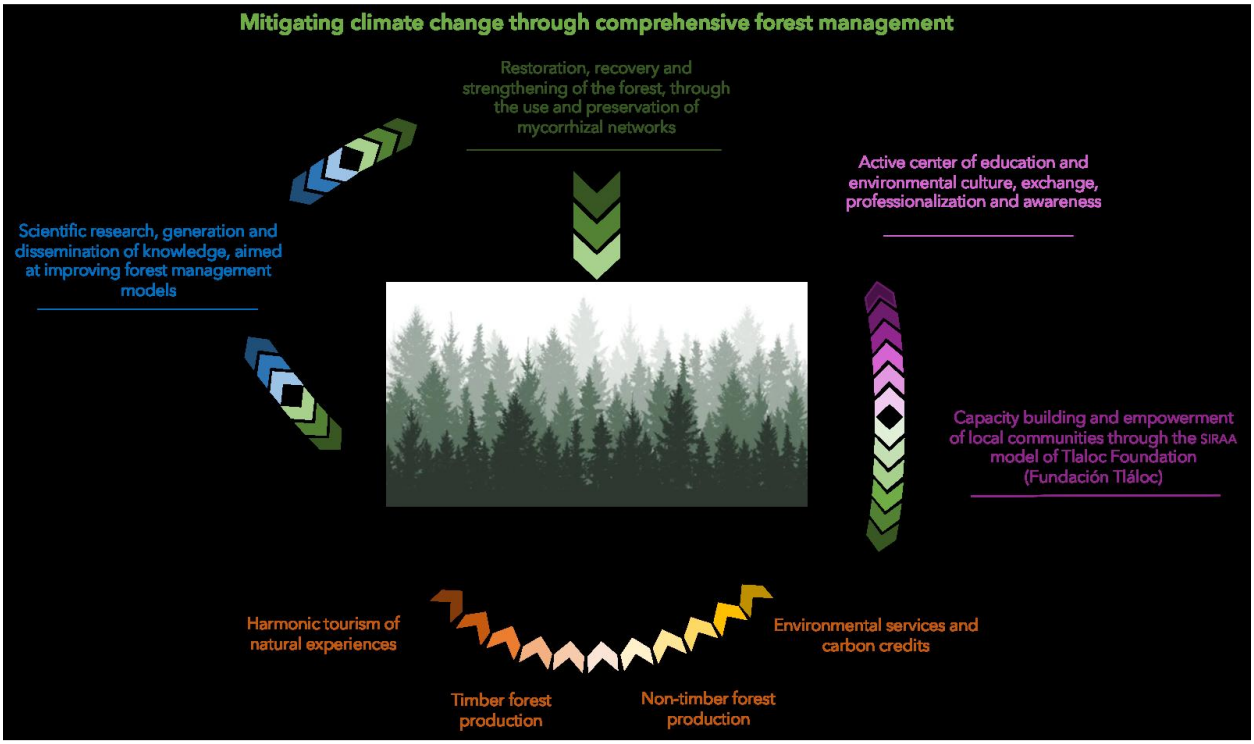
General Objective

Establish an effective and replicable mechanism for climate change mitigation through the restoration and reconversion of forested rural lands, under a sustainable model of forest management in the municipality of Zacatlan, Puebla; which will achieve a balance between the care of the ecosystemic qualities of the forest and the use of forest products and harmonious tourism of natural experiences, under a scheme of inclusion and empowerment, and generating knowledge to feed back into the model.

Specific Objectives

1) Promote an effective and replicable climate change mitigation mechanism based on sustainable forest management, which will allow the recovery, conservation, and expansion of Mexico's forests.
2) Articulate a process of restoration and reconversion of rural lands forestry vocation, using as a general criterion the emergence, conservation, and strengthening of mycorrhizal networks.
3) Develop and implement a model for the sustainable harvest of forest products (timber, resins, sisal and other by-products) integrated with the restoration and conservation of forest ecosystems.
4) Establish a financing model from diverse sources taking advantage of the products and services generated by the forest: timber products, non-timber products, harmonious tourism of natural experiences, environmental services and CO2 capture.
5) Promote scientific research and dissemination of knowledge related to forest management and the existence and effects of mycorrhizal networks on forest health with active monitoring of flora, fauna, and fungi populations, as well as social and environmental resources in the region.
6) Generate an active space for environmental education and culture, academic exchange and professionalization, and to raise awareness and include other agents that have an impact on forest management, such as ejidos, landowners and local communities.
7) Build capacities in local communities, including ejidatarios, women, and youth of the region so that they can participate in the different activities of the project such as management, sustainable production and harvesting, and the generation and dissemination of knowledge; following a participatory process according to the SIRAA model by Tlaloc Foundation (Fundación Tláloc A.C.).

Sustainable Forest Management Model



Biotic and Abiotic Characteristics of the Area of Interest

The region where the project will be developed has a temperate sub-humid climate with an average annual temperature of between 53 and 64ºF (12 and 18°C). The temperature of the coldest month fluctuates between 27 and 64ºF (-3 and 18°C) and that of the hottest month rises up to 80ºF (27°C). Total annual precipitation ranges from 28 to 59 inches (700 to 1500 mm), with summer rainfall with a P/T index greater than 55 and a winter rainfall percentage of 5 to 10% of the annual total. It is part of hydrological region 27 (Tuxpan-Nautla River, 8,375 square miles) and watershed B (Tecolutla River, 3,017 square miles). Wildlife includes mammals such as the shrew, mouse, gopher, tree squirrel, cacomistle, badger, raccoon, wildcat, and armadillo; reptiles such as lizards and rattlesnakes, as well as birds such as the yellow-headed parrot, sparrow, hummingbird, dwarf hummingbird, calandra lark, woodpecker, vireo, woodcreeper, mountain nuthatch, empidonax, mockingbird, and spotted cuitlacoche.

The region's forest vegetation is classified into three ecosystems: temperate-cold, tropical and semiarid. The predominant ecosystem in the area of interest is temperate-cold and the vegetation types are fir, pine, pineoak, oak-pine, juniper and other conifers, as well as oak forest.

Based on the biotic and abiotic characteristics, the restoration and reconversion of rural forestry lands to develop the project will consider, in the first place, native species that are naturally established so as not to alter the continuity of the fauna that feeds in that area. Likewise, the following species will be considered:

Plant species for conservation and restoration:

- **Mexican hawthorn (Tejocote, crataegus pubecens):** Tree that generates shelter in its canopy from its branches and provides food for some species of birds and small mammals.

- **Common rush (Zacatón, juncus effusus L.):** Not very tall scrub considered to protect wildlife, in addition to providing protection to the soil from water and wind erosion, and favoring reforestation by functioning as nurse plants.
- **Broom (Bacharis sp):** Tall shrub whose main function is to protect wildlife. Due to its size, it is ideal for bird nesting in its branches, as well as to shelter larger terrestrial animals, in addition to its protective function for forest species in the face of inclement weather.
- **Lang oak (Encino, quercuss sp):** Large tree species mostly resistant to poor soils, used for soil restoration, wildlife protection and, if required, for timber harvesting.
- **Ailite (Alnus acuminata):** Large shrub that offers protection to wildlife and recovery of poor soils.

Plant species for timber harvesting:

- **Patula pine (Pinus patula):** Native species that grows quickly, which makes it a candidate for reforestation, in addition to being one of the most harvestable species in the northern highland region of the state of Puebla.
- **Ayacahuite pine (Pinus ayacahuite):** Species considered for soil restoration as well as being used for timber harvesting in adulthood.
- **White cedar (Cupresus lindleyi):** Tree whose wood is little used but has good potential, in addition to being well adapted to semi-desert soils.

Plant species for non-timber use:

- **Montezuma pine (Ocote, Pinus leiophyla):** The use of this species can be for timber and non-timber production, including the extraction of its resin, in addition to being considered native to the area.
- **Pinus teocote (Ocote negro, Pinus teocote):** This species is considered for restoration of soils poor in vegetation as well as habitat conservation.

Financing

The financing requested is US$1 million (approximately MX$20 million), and will be used for the following specific purposes:

	Activity	People	Year 1	Year 2	Total	%
1	**Acquisition of land plots (cost of land)[8]**	**NA**	**US$900,000 (MX$18,000,000)**	**-**	**US$900,000 (MX$18,000,000)**	**90.00%**
2	**Installation and management of stage 1 of the project[9]**	**NA**	**US$59,250 (MX$1,185,000)**	**US$40,750 (MX$815,000)**	**US$100,000 (MX$2,000,000)**	**10.00%**
a.	Management of land plots acquisition	1	US$12,500 (MX$250,000)	-	US$12,500 (MX$250,000)	1.25%
b.	General management	1	US$15,000 (MX$300,000)	US$15,000 (MX$300,000)	US$30,000 (MX$600,000)	3.00%
c.	Management assistance	1	US$7,750 (MX$155,000)	US$7,750 (MX$155,000)	US$15,500 (MX$310,000)	1.55%
d.	Agronomic and forestry consulting	1	US$6,000 (MX$120,000)	US$6,000 (MX$120,000)	US$12,000 (MX$240,000)	1.20%
e.	Land plots field management	2	2 x US$6,000 (2 x MX$120,000)	2 x US$6,000 (2 x MX$120,000)	US$ 24,000 (MX$480,000)	2.40%
f.	Project implementation consulting	1	US$6,000 (MX$120,000)	-	US$6,000 (MX$120,000)	0.60%

We require financial support for **stage one only**, that is, to acquire the land plots and manage the project start-up.

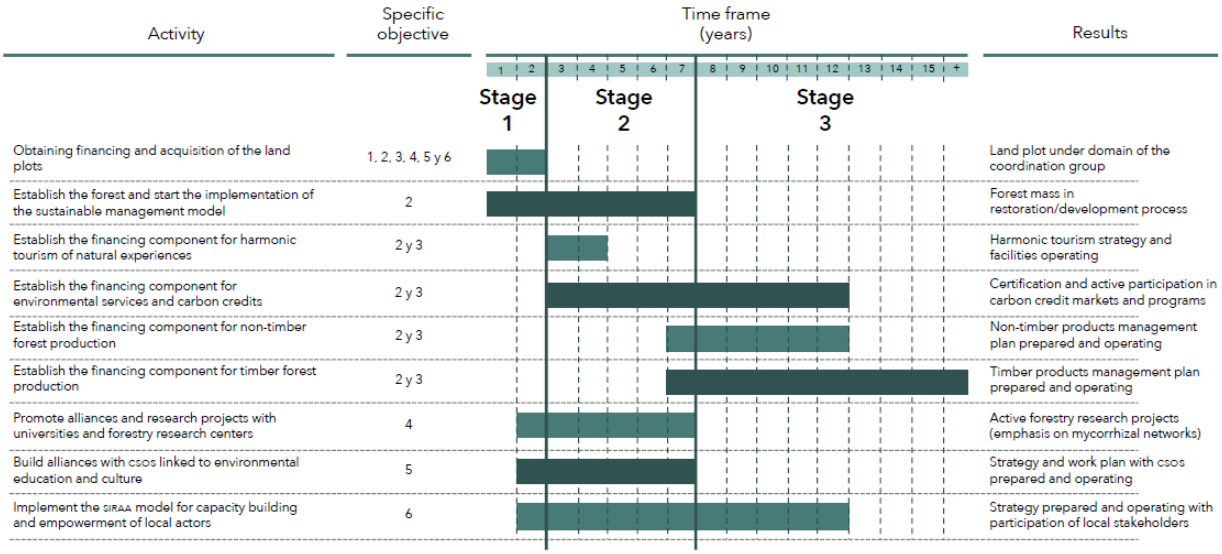
Stages 2 and 3 will be **self-financed** by the project.

Financing goal: US$1 million (MX$20 million).

Operating goal: Between 270-430 acres (110-175 hectares).

Long term goal: Achieve an intervention area of 2,500+ acres (1,000+ hectares) between own land and ejido property.

Work Plan



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Appendix: Logical Framework Synthetic Matrix

	Narrative summary	Indicator	Target in absolut terms	Unit of measurement	Means of verification	Assumptions
Goal	Contribute to Mexico's commitment to reduce net CO2 emissions within the framework of the Paris Agreement	Change in the sequestred carbon in the forests of Mexico	7,945	Million tonnes	Institutional evaluation and monitoring reports of the Mexican national climate change policy	There is a national climate change policy, as well as mechanisms for implementation, monitoring and evaluation Climate change information systems are periodically updated Source: INECC, Climate Change Information System, Soil (http://gaia.inegi.org.mx/sicc/#) 2010 value: 7,223 million tons of CO2 in forests and other forest lands
Purpose	Recover the forest masses of Mexico and, specifically, of the state of Puebla and the municipality of Zacatlan	Forest area under project administration in relation to the goal	120	Hectare	Documentation formalizing control over the land plots that are under project administration, such as: deeds, property titles, usufruct agreements/contracts, collaboration agreements and/or adherence to the project, among others	There is a forest management and financing model that allows the permanence and expansion of the project in the long term The technical means are available to carry out geographic and photo-interpretation analysis of satellite imagery The second indicator is outside the control of the project, since it refers to general changes in land use in the municipality of Zacatlan
		Forest areas with land use change in Zacatlan, Puebla	0	Hectare	Geographical analysis and photo-interpretation of satellite imagery of the evaluated areas	
Output 1	Strengthen forest ecosystems	Sustainable forest management plan developed and updated	4	Included element	Documentary collection of the project Project management descriptive memories	There is adequate and sufficient information to prepare and update the sustainable forest management plan
Activity 1.1	Preserve and strengthen forest ecosystems with an emphasis on caring for mycorrhizal networks	Forest area examined to identify mother trees	120	Hectare	Documentary collection of the project Project management descriptive memories	Information and technical guides for the identification and classification of fungi, plant and animal species are available A mother tree is a tree that is older or larger than the average trees in its surroundings, and is considered to be essential for the survival of neighboring trees in their early stages of growth
		Forest area examined to identify plant species	120	Hectare	The indicator measures the percentage of forest area of the project that was examined to identify the different existing plant species	
Activity 1.2	Strengthen the diversity of forest ecosystems	Number of existing plant species	10	Vegetal species	Documentary collection of the project Project management descriptive memories	The forest management plan is available Information and technical guides for the identification and classification of fungi, plant and animal species are available
		Number of existing animal species	24	Animal species	The indicator measures the number of existing animal species with respect to the number of species considered in the forest management plan	
Output 2	Establish a financing model	Sources of financing operating	3	Funding source	Project financial statements	There is adequate and sufficient information to prepare and update the sustainable forest management plan
Activity 2.1	Establish a financing scheme for the sustainable use of forest products (timber and non-timber)	Revenues generated from the use of forest products with respect to the costs of the project	To be determined	Mexican pesos (MX$)	Project financial statements	Licences and permits are in place to carry out harvest-related activities The use of timber and non-timber forest products requires a minimum period of between 7 and 10 years, depending on the progress of the trees.
		Trees subject to harvesting	3	Percentage	The indicator measures the percentage of trees that are being harvested with respect to the total number of trees	
Activity 2.2	Establish a financing scheme for the harmonious tourism of natural experiences	Revenues generated from harmonious tourism of natural experiences in relation to project costs	To be determined	Mexican pesos (MX$)	Project financial statements	Financing is available for the construction/adaptation of harmonious tourism-related facilities Licenses and permits are in place to carry out harmonious tourism activities The baseline is estimated at 96 visitors per quarter
		Change in the number of visitors	2	Visitor	The indicator measures the difference in the number of visitors related to harmonic tourism who make a payment, compared to the number of visitors in the same period of the previous year	
Activity 2.3	Take part in the global market for carbon credits and/or payment for environmental services (PES)	Revenues generated from the sale of carbon credits relative to the project costs	To be determined	Mexican pesos (MX$)	Project financial statements	The project is certified and has measurements of its carbon sequestration capacity There is a local (municipal, state, or federal) payment for environmental services program or similar
	Revenues generated from payment for environmental services with respect to the project costs	To be determined	Mexican pesos (MX$)	The indicator measures the percentage of income generated by PES with respect to the investment, operation, and maintenance costs of the project	

	Narrative summary	Indicator	Target in absolut terms	Unit of measurement	Means of verification	Assumptions
Output 3	Preserve and recover forest land uses	Acquired land at risk due to land use change or with forestry vocation	120	Hectare	Documentation formalizing control over the land plots that are under project administration, such as: deeds, property titles, usufruct agreements/contracts, collaboration agreements and/or adherence to the project, among others	Financing is available for land acquisition Technical means are available to identify land with forestry vocation and land at risk of land use change
Activity 3.1	Acquire land that has undergone or faces potential land use changes (from forest to agricultural or urban)	Percentage of acquired land at risk due to land use change	60	Hectare	Documentation formalizing control over the land plots that are under project administration, such as: deeds, property titles, usufruct agreements/contracts, collaboration agreements and/or adherence to the project, among others	Financing is available for land acquisition Technical means are available to identify land at risk of land use change
Activity 3.2	Acquisition of forested or forestry vocation areas	Percentage of acquired land forested or with forestry vocation	60	Hectare	Documentation formalizing control over the land plots that are under project administration, such as: deeds, property titles, usufruct agreements/contracts, collaboration agreements and/or adherence to the project, among others	Financing is available for land acquisition The technical means are available to identify the land that has a forestry vocation
Output 4	Contribute to the generation and dissemination of scientific knowledge related to the forests of Mexico and Puebla	Book, book chapter or scientific article published	1	Publication	Report of scientific publications referring to the project	There are institutions, programs, networks and researchers addressing the forests of Mexico and Puebla, both in Mexico and in other countries There is funding for forestry research
		Science communication document published	1	Publication	The indicator measures the percentage of science communication books, book chapters or articles that have been published with respect to the target	
Activity 4.1	Link the project with forestry research programs and/or networks	Forestry research programs and/or networks linked to the project	1	Program	Documentary collection of the project Project management descriptive memories	There are institutions, programs, networks and researchers addressing the forests of Mexico and Puebla, both in Mexico and in other countries There is funding for forestry research
Activity 4.2	Promote experimental applied research projects	Experimental applied research projects in operation	1	Project	Research reports, publications, seminars or conferences where advances and/or results of research projects are presented	There are institutions, programs, networks and researchers addressing the forests of Mexico and Puebla, both in Mexico and in other countries There is funding for forestry research
Output 5	Training and sensitization of local stakeholders in forestry management	Communities, organizations or groups that are linked to the project	2	Community, organization or group	Documentary collection of the project Project management descriptive memories	The project has a forest management plan and the means to put in place implementation mechanisms for training and awareness-raising
Activity 5.1	To constitute an active space for environmental education and culture	Courses, seminars and talks given	2	Course, seminar or talk	Documentary collection of the project Project management descriptive memories	The project has the minimum necessary infrastructure (office space and multipurpose room) to carry out community activities

5.3 Land Trusts and Inclusivity: Centering Inclusivity in the Land Conservation Movement

Akou Akakpo and Nina Jeffries

Introduction

Land trusts use the power of property rights to conserve land. As a result, the land trust movement has to grapple with both the history of the environmental movement and the history of land ownership.

The Land Trust Alliance (LTA) is a resource center for land trusts in the United States. Its 950+ land trust affiliates have conserved over 61 million acres and continue to preserve, protect, enhance, and open up land. The Alliance supports land trusts, "community-based, nonprofit organization that actively works to permanently conserve land." By virtue of working with land, land trusts engage with the relationship between land and people – and significant to this paper, the relationship between land ownership and race in the United States.

Framing the problem:

Throughout U.S. history, governments, non-profits, and individuals with power have systemically prevented minority groups from owning land, and taken the ability to own/access land. Most notably with the violent removal of Native Americans from their ancestral lands and the enslavement of African people, where Black people were treated as property by White wealthy landowners. Enslaved Black people did not have autonomy over their own bodies, the majority worked on plantations until the passage of the 14th amendment on June 8, 1866. Following the 14th amendment and through the short reconstruction era, despite segregation and other systemic barriers, Black ownership of farmland hit an all-time-high of 14% of farm owner-operators in 1910.[46] Today, Black land ownership is at 1.3%, due to intimidation, violence, predatory lending, heir's property disputes, and discrimination from USDA and other agencies which have systemically prevented people of color from owning land or having their land ownership/access taken from them.[47]

Dr. Carolyn Finney, a Black storyteller and advocate for diversifying the outdoors, shared a story about her family's relationship to land and experience with land trusts.[48] After being denied a job at the park service because they "don't hire Negros", her father took a job as a caretaker for an estate in upstate New York. Her father worked as a groundkeeper, chauffeur, caretaker, and gardener, and her mother as a housekeeper for 40 years. Dr. Finney and her family cared for the land, and she and her brother learned to bike, swim, grow food, and engage in the outdoors there. When the landowners sold the land, the new owner put the land under a conservation easement. The associated land trust sent letters to those nearby to celebrate the new owner. The letter thanked the new owner for their conservation mindedness and commitment to land stewardship, it made no mention of Dr. Finney's family and the 4-years they spent caring for the land. When the land trust published the letter, they erased the history of the care from Carolyn's family.

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[46] https://waterkeeperschesapeake.org/a-brief-history-of-black-land-ownership-in-the-u-s/

[47] https://www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/wealth-disparities-in-civil-rights/the-contemporary-relevance-of-historic-black-land-loss/#:~:text=At%20the%20close%20of%20the,more%20than%2016%20million%20acres.

[48] https://www.youtube.com/watch?v=i58ayzQf4wc

The erasure of Dr. Finney's family is not unique. As a result of land loss from people of color, the land trust movement has to grapple with both (1) understanding and acknowledging the complex history of the land they wish to preserve, and (2) bringing diversity and inclusion to a field where people of color have been pushed out. These complex problems feed into the core landscape problems:

- History and culture of the traditional conservation movement has excluded BIPOC folks, and created a narrative that they don't belong/fit in conservation
- There is a limited scope of conservation language and practices which excludes BIPOC communities from the land conservation movement
- Practices and laws do not acknowledge land stewardship goals and practices of BIPOC communities Practices do not acknowledge the history of BIPOC families and communities' relationship to land

Solutions & Goals:

The Land Trust Alliance serves as a network, accreditor, educator, advocator, and agenda-setter for the land trust community. The Alliance can demonstrate the importance of emphasizing diversity, equity, and inclusion by setting a strong, committed example to these values. The following recommendations would support LTA's commitment to "providing programs and tools for land trusts to create inclusive, welcoming organizations that respect diversity and to help them engage all people who live in the communities they serve."[49]

Creating a new program in LTA'S Community-Centered Conservation Program that will focus on expanding the conservation language to include BIPOC communities and create "one stop shop" for knowledge and support. The new program would enhance the work of the Community-Centered Conservation Program department by:

- Being solely focused on engaging new BIPOC conservationists and land stewards
- Creating buy-in to the work of the Alliance and trust that their conservation practices will be respected, protected, credited and advanced by the conservation movement
- Explore contracting with the Conservationists of Color and similar organizations to engage and consult on land trust projects
- Expanding on engaging BIPOC youth to kickstart careers in conservation

Expanding LTA's existing grantmaking opportunities to support land trusts working to diversify their staff and the users of their parks. Expanding grantmaking would enhance the work of the Community-Centered Conservation Program department by:

- Examining current grantmaking language to find ways to use more inclusive language and more diverse projects
- Offer grants to land trusts to create comprehensive story-driven memorials to public parks and preserves[50]
- Offer grants to land trusts to support paid internships and/or support for hosting Americorps and other service year positions

[49] https://landtrustalliance.org/what-we-do/our-programs/community-centered-conservation
[50] https://www.theatlantic.com/sponsored/rei-2018/five-ways-to-make-the-outdoors-more-inclusive/3019/

To ensure that this work is permanent, the Alliance must incorporate requirements for equitable organizational policies into their accreditation process. Integrating equity into the accreditation would enhance the work of the Community-Centered Conservation Program department by:

- Change the Land Trust Accreditation Commission rules to require land trusts to engage certain communities in their work to achieve accreditation (or some other change that cements community, diversity, and equity in the accreditation process)
- Create "Conservation Priorities" or "Features" tag that demonstrates the land trust is committed to equity, diversity, and/or community-centered work through their policies
- Examining language in job postings and adjusting required experience to be inclusive to folks with diverse backgrounds and diverse experiences

Landscape questions:

What is the purpose of the project?

With this project, our goal is to lend our voices to the conservation movement spearheaded by non-traditional conservationists and allies in their efforts to make conservation more inclusive and equitable.

To achieve the goal of inclusive conservation, we recognize that the traditional conservation movement needs to expand in their conservation language and goals to include language from communities that have been historically excluded from the conservation movement. Some examples of this language expansion include: acknowledging the names of the tribes or families the lands we now occupy belonged to; naming land projects and easements after the people that cared for the lands until the easements were acquired; and including a complete history of all the people that cared for the lands in easement agreements.

In addition to helping to change the language and goals of conservation practices by traditional conservation groups, we aim to amplify and elevate the conservation work of BIPOC communities, families, and community centered organizations that have dedicated themselves to bringing conservation to all people. Through the work of the aforementioned groups, we hope to engage traditional conservationists in discussions that would prompt more inclusive conservation policies. And through these partnerships, we will commit to incentivizing traditional land trusts to work with and engage BIPOC conservationists in their work in an effort to garner as much support as we can.

Lastly, we hope to contribute to this movement in a way that helps cement inclusivity in the foundations of the conservation movement. With this goal in mind, we will assist in creating accountability resources to ensure that traditional conservationists and land trusts commit to indefinitely include BIPOC folks in their work. In practice, this goal could present as: the Land Trust Alliance requiring their member land trusts to achieve certain inclusive conservation goals to be approved for membership renewals; the Land Trust Accreditation Commission requiring land trusts to engage certain communities in their work to achieve accreditation; traditional conservation organizations starting or increasing their outreach to BIPOC youth to generate interest in conservation careers and ensuring diversity in the next generation of conservationists.

Who Is Involved?

While we all occupy the lands we are on, conservation has not been historically tailored to all of us. In this project, we are committing to involving folks from as many groups as possible to ensure that

the inclusive conservation movement not only represents all people but reflects a true representation of all. Some of the key partners we will engage are: folks currently fighting for BIPOC inclusion in conservation; Community centered organizations- i.e., Conservationists of Color; traditional conservationists / conservation groups; government agencies; indigenous communities; BIPOC communities, families, youth, professionals; BIPOC folks interested in conservation careers/education; conservation philanthropy/donors/funders; and landowners.

Why us?

As we began brainstorming for our final project at the beginning of this course, we found similarities in our interests and passions as it relates to land conservation, so this landscape problem became very apparent as our project topic. In addition to us being part of traditional conservation network (the Land Trust Alliance), we also come from families and communities that have experience land injustice and have been excluded from the conservation movement. Through our various experiences that first introduced us to the traditional conservation community, we have found a uniquely shared space where we appreciate the opportunities we have had and recognize how scarce they are for folks like us. With this project, we want to help in the movement to expand access to land conservation to folks that look like us. As we both agreed, having experienced conservation programs as young professionals was very beneficial for us, so we want to help provide similar experiences to other young adults that may not have access to the conservation world and possibly inspire careers in conservation.

Where are we?

Geographically, our focus is on the United States. To implement the goals of this project truthfully and successfully, we need to outline where we are historically as a nation.

As stated in our introduction of this landscape issue, BIPOC communities across the United States have experienced land loss throughout their families' history. Members of these communities have been advocating for and fighting to restore their rightful land access and bring attention to the truthful and complete history of how the lands were taken from their ancestors. Despite their efforts, there have been little to no acknowledgment of the names of the formerly enslaved and indigenous peoples who worked on and protected the lands that current landowners are being praised for entering into conservation easements or other conservation protections. Although many folks insist that these are issues of the past, they are not. In recent years, we have seen many accounts of BIPOC folks being

denied access to conserved land, jobs in conservation, and the few jobs marketed to them still are through coded language that makes it impossible for them to start a career in the field.

When are we?

Our goal and purpose in this project are not new or groundbreaking. Community centered organizations such as The Conservationists of Color Network have advocated for inclusive conservation for years. They put the voices of those who are often relegated to the margins at the forefront, while offering safe and brave spaces for conservationists of color to build community. Members are encouraged to network with one another and engage in dialogue about how to take action against racism, oppression within the conservation movement and the communities in which we work. They advocate and implement best practices for self-care and self-advocacy within conservation spaces.

Our hope with this project is to build and implement a program that will support and affirm the work of these community organizations. We hope to help in the movement to expand conservation language

and practices to include all people. Lastly, we aim to encourage Diversity, Equity, Inclusion, and Justice (DEIJ) inclusion in land trusts' guiding principles and requiring continued review and compliance for membership and accreditation renewals.

How Much?

With such ambitious goals of our project, we have outlined the following yearly budget to fund our program.

- Annual total budget: $500,000.00

Budget Breakdown:

- Staffing needs: 2 employees - $250,000.00 per year in salaries
- Contracting budget: $200,000.00 per year – will include contractors' travel to conferences and on the ground meetings with our members, contractors time to consult on projects, contactors time to help build new networks with LTA
- New landing page in LTA's learning center - $10,000.00 per year
- Miscellaneous budget: $40,000.00 - to cover unexpected costs

Inclusivity in Practice: Dr. Finney's Story

We shared Carolyn Finney and her family's story to highlight one example of the issues BIPOC families and communities have faced in the United States and in the conservation movement. From the dismissal of Dr. Finney's father as a park ranger, to Dr.Finney's racial profiling incident on the land their family lived on, to their family's erasure in the conservation easement put on the land by new owners; the Finney family experienced an array of issues many BIPOC family have experienced and continue to experience on lands across the country. We don't have the means to go back and change history, but history affords us the insight to ask questions and course correct our future actions. We encourage anyone engaging with our project to ponder these questions for themselves:

- How could the erasure of Carolyn's family in the conservation easement have been avoided?
- What systems can traditional conservationists and land trusts amend to avoid creating more stories like Carolyn and her family's?
- What unique tools can the Land Trust Alliance use to encourage member land trusts to be inclusive in their conservation easement procurement?
- How could traditional conservation organizations frame their recruitment process to attract, fairly access, hire and retain employees form BIPOC communities?

As individuals and organizations think through their views of these questions, we hope they inspire action items that will center inclusivity and equity in their land conservation efforts.

5.4 How to expand from community-based conservation pilots to a large-scale landscape conservation program: Conservation of an agave corridor for bats and people in northeast Mexico

Bat Conservation International

Background

Three species of nectar-feeding bats migrate annually from central Mexico in the winter to the Southwest United States in the summer: the endangered Mexican long-nosed bat (Leptonycteris nivalis); the Lesser long-nosed bat (Leptonycteris yerbabuenae); and the Mexican long-tongued bat (Choeronycteris mexicana). While the Lesser long-nosed bat and the Mexican long-tongued bat are not considered as threatened, drastic population declines (up to 50%) of the Mexican long-nosed bat granted its inclusion in the IUCN Red List (Medellín 2016a) and U.S. Endangered Species Act (U.S. Fish and Wildlife Service 1988) as Endangered and in the Mexico list of species of conservation concern as Threatened (NOM-ECOL-050, SEMARNAT 2010). For all three species of migratory, nectar-feeding bats, disturbance and loss of roosting sites and foraging resources are the main threats (U.S. Fish and Wildlife Service 2018, U.S. Fish and Wildlife Service 2016). The survival of these species depends on healthy foraging habitat and food plants such as agave plants (Agave spp.) along their migratory corridors, with the Mexican long-nosed bat relying on agaves as their main known nectar source in the northern extent of their migratory range (Kuban 1989, Moreno-Valdez et al. 2004, England 2012). Agaves are particularly critical for pregnant and lactating females as they raise their pups every summer. In fact, this dependence is so strong that it is suggested that the migration of the Mexican long-nosed bat is fueled by blooming agaves, with bats taking advantage of the distribution of different species of agaves that bloom at different times of the year, forming a latitudinal migratory "nectar corridor" (Fleming et al. 1993, Moreno-Valdez et al. 2000, Gómez-Ruiz and Lacher 2017). In return, the Mexican long-nosed bat pollinates these agaves, securing the sexual reproduction of the plants and maintaining healthy gene flow within populations (Eguiarte et al. 2021).

In the borderlands of the United States and Mexico, agave plants function as keystone species in desert and scrubland ecosystems for both natural and human systems, supporting ecosystem integrity as well as human livelihoods (Gentry 1982). Agaves support healthy ecosystems, helping to stabilize soils and prevent erosion, contribute to healthy water sources, and support biodiversity by providing critical habitat for numerous wildlife species. Agaves are also important cultural and economic resources for rural communities and producers, and are used to produce beverages such as tequila, mezcal, bacanora, agua miel, and pulque and to provide fodder for livestock; used as living fences to protect crops and delineate property boundaries; and used to construct houses and fences (Colunga-García Marín et al. 2008, Trejo-Salazar et al. 2016).

WHY: The Issue

Pollinating bats are suffering severe population declines due to loss of roosting and foraging habitat (Medellín 2016a, Medellín 2016b, U.S. Fish and Wildlife Service 2016, U.S. Fish and Wildlife Service 2018). For the Mexican long-nosed bat alone, the population is estimated to have been reduced by half within a one to two decade period. As the main nectar source for Mexican long-nosed bats in the northern portion of the species' range, the health of agave populations is critical for these endangered bats.

Extensive land-use change, livestock grazing, drought, and other pressures are threatening agaves and the biotic communities that depend on them. Climate change can exacerbate these threats, altering flowering phenology and reducing agave survival and reproduction (Gómez-Ruiz and Lacher 2019). Phenological changes can have cascading effects on the biotic community, including disrupting the key mutualistic relationship between agaves and threatened migratory bats that provide pollination services. Loss of agaves on the landscape also threatens the resilience of human livelihoods, especially during periods of drought, as rural people harvest agaves to augment their income and diet and utilize agave as supplemental cattle feed when range forage is limited. Agaves provide rural communities an important buffer during drought (Stewart 2015), which consequently further increases over-harvesting pressure on agaves, especially as climate change exacerbates drought conditions.

WHAT: Bat Conservation International's Agave Restoration Initiative

Bat Conservation International's (BCI's) Agave Restoration Initiative works across Mexico and the Southwest U.S. at a landscape scale to protect and restore healthy, functioning ecosystems that simultaneously support three species of pollinating bats and rural livelihoods. Agave restoration is a nature-positive solution that contributes to rural livelihood resilience and climate resilience by supporting the productive capacity of the land (with root systems stabilizing soils, enhancing water infiltration in agricultural fields, and allowing for regrowth of native vegetation ground cover) and water conservation in drought-prone areas.

Through our bi-national, collaborative initiative, we are working to create climate-resilient "nectar corridors" and reduce societal impacts on natural ecosystems, improving livelihoods and saving endangered and threatened bats from extinction. We envision a bi-national migratory corridor safeguarded by a network of community-based conservation.

WHERE: Geographic Focus

Through the Agave Restoration Initiative, we are currently working across 8 U.S. and Mexican states: Arizona, New Mexico, and Texas (Southwest United States); Coahuila, Nuevo León, and Sonora (northern Mexico); and Hidalgo and Zacatecas (north-central Mexico). Our work areas are defined by efforts for migratory species presents enormous challenges, since threats to the species, and strategies to mitigate for them, are influenced by multiple factors that are often separated by thousands of miles and span international borders. Our initiative aims to implement agave restoration activities (along with roost protection) across this large landscape.

WHO: Our Partnerships

The socio-ecological challenge that we are addressing is a bi-national, large landscape scale challenge, only solvable by the collaboration of numerous stakeholders (from communities to federal governments) in coordination, leading to inclusive, informed, broadly supported decisions with enduring conservation, economic, and community outcomes. Our work cannot be achieved with insular, small-scale thinking. Because of the long-distance migratory nature of the focal bat species, we must think big and implement conservation action at a landscape scale, restoring and connecting roosts and migratory corridors. However, a core challenge facing many landscape-scale conservation efforts is that local projects often develop in isolation, never coalescing into a wider movement and never having the opportunity to learn from each other.

Through the Agave Restoration Initiative, we have made a point to build diverse, multi-sectoral partnerships. We have brought together bat and agave experts and local stakeholders from environmental and education non-profits, rural communities, and industry, allowing us to co-develop priority conservation, restoration, and research actions for the Mexican long-nosed bat. Currently, the initiative brings together over 65 partners including civil society organizations, local communities, government agencies, private industry, schools and universities, and public interest groups. This bi-national and multidisciplinary approach allows us to set ambitious goals that enhance climate resiliency of natural ecosystems, improving local livelihoods and saving bat species from extinction. With our partners (some of which are shown below), we work to build local capacity for sustainable land management practices and sustainable rural economies through collaborative project development, technical training, and peer-to-peer learning opportunities.

HOW: Our Community-Based Approach

The Agave Restoration Initiative works at the intersection of bat conservation and sustainable rural development to address the global environmental and socio-economic challenges of biodiversity loss, land degradation, poverty, and inequality. We address these issues through an integrative, inclusive approach to nature-based solutions that includes restoration of agave plants that have immense environmental, cultural, and economic value; participatory development of community-based sustainable land management plans and sustainable community businesses; and local capacity building, ultimately catalyzing community and institutional empowerment for conservation and restoration across a large bi-national landscape.

Our on-the-ground restoration and conservation strategies are diverse, including not only direct planting of agaves across the landscape, but also the development of community and private nurseries for propagation of agave plants and other locally-important plants for consumption or sale; support and training for regenerative agricultural and ranching practices and land management planning; and the development of green business enterprises that support agaves and native habitat, all aimed at improving the state of productive lands and enhancing local sustainable livelihoods.

Key Program Activities and Achievements: 2019 – 2023

Since the launch of the Agave Restoration Initiative in 2018, we have made huge strides in protecting and enhancing critical foraging habitat for three nectarivorous bat species in the U.S. Southwest and Mexico. Through our inclusive and integrative approach, we feel we have built a powerful conservation initiative that delivers benefit to both wildlife and people. We are well on our way to achieving a large migratory corridor safeguarded by a network of community-based conservation.

To date through pilot projects, we and our partners have:

- planted over 80,000 native agaves;
- protected or restored over 9,500 hectares of land (nearly 23,500 acres);
- collected over 385,000 agave seeds from the wild for restoration efforts and regional seed banks;
- propagated 85,000 seedlings in nurseries;
- built or supported the infrastructure of 18 community and private nurseries;
- signed 10-year conservation agreements with 15 Mexican ejidos and landowners;
- trained 224 community members in sustainable and regenerative agricultural and grazing techniques;
- trained 15 school teachers to serve as “environmental champions” in their communities;
- created or supported over 255 jobs through agave restoration activities;
- conducted environmental education programs reaching over 26,000 children and adults in our work areas and over 1.5 million people worldwide through virtual programming;
- produced guidebooks detailing best practices agave restoration and sustainable agave management;
- developed and piloted novel conservation tools and monitoring technologies including drone monitoring for agave habitat assessment and eDNA (environmental DNA) techniques for surveying for nectarivorous bats from hummingbird feeders and blooming agaves.

Agave Restoration Initiative Goals

Our aim is to protect and enhance existing agave habitats and encourage the growth of new agave stands to facilitate and sustain a biological corridor for these bats in Mexico and the southwestern United States. Our approach is three-pronged:

1) planting and restoring native agaves around known critical bat roosts;
2) protecting current healthy, high-density agave stands near these roosts; and
3) identifying and protecting (through foraging habitat protection and enhancement) the migratory corridors.

HOW: Moving Forward: Expansion and Strengthening of Community-Based Conservation Projects

As we move forward, we will continue to support the strengthening existing restoration and conservation projects and local capacity in our current work areas, as well as expand these activities into new areas to fully cover the migratory corridor of our three focal bat species. We will continue to support our local partners in implementing restoration activities with landowners, providing training in regenerative agriculture and ranching, and monitoring the success of the work.

The next several years will focus on continuing and expanding this work to additional communities while piloting new types of conservation solutions, as well as developing sustainability mechanisms for the on-the-ground projects. Examples of our project-based ecological sustainability mechanisms include prioritizing agave plantings in projected climate strongholds for nectarivorous bats and agaves; pairing our agave plantings with broader habitat, watershed, and soil restoration activities whenever possible; and employing an adaptive management approach to adjust our restoration practices based on continual data collection and learning. Examples of our project-based social sustainability mechanisms include supporting the development of livelihood diversification options and local food security (through green business enterprises, establishment of community nurseries and gardens and productive reconversion of degraded lands to productive states to support agriculture and ranching); and providing technical training for community members that offer job opportunities and enhance local restoration and conservation capacity.

We are particularly excited about our work at the intersection of bat conservation and rural development. Our previous community-based work provides a robust foundation for the evolution of our program into the green business enterprises for agave restoration. This program seeks to co-develop environmentally-sound businesses with local communities. The program directly addresses community-identified needs and invests directly in local economic growth by building infrastructure for successful businesses. These green business enterprises are critical for the long-term sustainability of the work and long-term protection of agaves and native habitat, and are also an integral component of BCI's justice, equity, diversity, and inclusion work. Over the next several years, we will continue working with local non-profit and agency partners to develop community-based business enterprises with ejidos in Mexico and develop a set of "best practices" for development of additional enterprises in additional communities.

HOW: Moving Forward: Strategic Evolution from Pilot Projects to a Large-scale Landscape Conservation Program

The first few years of the Agave Restoration Initiative focused on piloting localized agave restoration projects and community-based projects focused on sustainable agriculture and ranching to support agave habitat for bats and people. These pilot projects allowed us to establish relationships with local conservation actors in each region where we're working and allowed us to establish proof-of-concept for restoration in diverse geographic areas with diverse partners. Importantly, these pilot projects have demonstrated tangible, on-the-ground socio-ecological impact and benefit, including enhancement of native vegetation ground cover, soil erosion reduction, and economic benefit to community members. These tangible results have helped attract interest from new communities and landowners interested in joining the initiative and implementing restoration actions on their lands, and have also catalyzed investment from funders and interest in this work from the general public.

As we reach the important milestone of having on-the-ground projects active across the migratory corridor of the bats, we are at a significant transition point from development and implementation of localized pilots to a large-scale landscape conservation program. This strategic evolution of our approach focuses on a transition to long-term sustainability and is built around two main components that will help us achieve this:

1) Development of a **robust, coordinated conservation action network**; and

2) Development of **large-scale financial incentives and innovative long-term sustainable finance mechanisms** to support on-the-ground restoration and conservation and the action network.

HOW: Moving Forward: Integrating the 5 Pillars of Successful Land Conservation

Below we discuss the two components of our strategic evolution and illustrate how we are integrating the five pillars of successful land conservation (Robinson and Levitt 2022) into the development of our Agave Restoration Initiative and strategic visioning moving forward.

The five pillars are: 1) administrative capacity; 2) financial acumen; 3) stewardship expertise; 4) ability to share knowledge and experience; and 5) cross-cultural competence.

Component 1: Development of a robust, coordinated conservation action network

Because of the large spatial and temporal scales of the challenge of conserving long-distance migratory species that cross international borders, we recognized the importance of coordinated vision and action to avoid duplication of efforts and strengthen the impact of on-the-ground work. To date, we have launched one regional agave restoration network through our bi-national Agave Restoration Initiative: a Northeast Mexico Agave Restoration Network. Northeast Mexico is a critical part of the migratory corridor of the endangered Mexican long-nosed bat, with three maternity roosts located in this region. Because of this region's importance to the survival of the species, we have focused heavily on developing local restoration and conservation capacity. We are working with dozens of local organization partners, ejidos, private landowners, and Protected Area managers in this region to create a network that will establish regional restoration supply chains and catalyze community-based agave restoration for bats and people. This Northeast Mexico Agave Restoration Network can set ambitious landscape-scale conservation targets that would not be achievable through isolated projects, facilitate partnerships to deliver conservation success, and more effectively mobilize funding and resources and channel these resources in ways that most effectively address the conservation challenge. The network can help ejidos and local community members gain access to financial resources that may not otherwise be attainable to them, shrinking the distance between funders and on-the-ground partners. We believe this network approach will allow us to explore and pursue innovative conservation financing models (e.g. restoring agaves for carbon sequestration and as part of carbon credit programs, or bat conservation for wildlife/biodiversity credits). While these ideas are in their nascent stages, we are excited to explore the possibilities with our partners as we move forward.

We are excited to move forward with and expand upon this network conservation model in which diverse organizations and stakeholders can pool skills, resources, and experiences in pursuit of our common goal: protecting and restoring agaves as a means for wildlife conservation, community development, and ecosystem health.

Pillar 3: Stewardship Expertise

The first meeting of the Northeast Mexico Agave Restoration Network was in 2019 in Monterrey, Nuevo León, hosted by Bat Conservation International. This first meeting (not officially a network yet) was attended by approximately 20 participants, mostly bat and agave researchers, with a handful of participants from the federal government (regional Protected Areas) and industry. The focus of this meeting was on identifying priority conservation needs for the Mexican long-nosed bat.

The second, more formalized, network meeting was in November 2022, again in Monterrey. This meeting was attended by over 60 participants from nearly two dozen partners, and importantly included over 10 individuals from several ejidos in the region who are participating in agave restoration and bat conservation efforts. In addition, the focus of the meeting shifted away from primarily focusing on bat conservation needs, to a more holistic and equitable focus on the co-benefits of agave restoration to people and the discussion of social (economic, governance, etc.) priorities.

In terms of stewardship expertise, both bat and agave researchers as well as land managers and communities are essential partners in this work, all contributing uniquely situated stewardship knowledge and expertise. By shifting to a more inclusive, participatory approach for the second meeting, we hoped to establish more broadly supported decisions with enduring conservation, economic, and community outcomes. The 2022 meeting was our first full network meeting with the intention of initiating the process of creating a unified vision for our continued work, developing collaborative integrative project ideas, and defining mechanisms for continuing to build the network. We had the chance to share successes and mistakes, expectations, dreams, and opportunities for growth and learning. The meeting provided a forum for ejido members to express their needs directly to the people and organizations that are helping them run on-the-ground conservation programs, and allowed for open, direct, and honest communication among the partners that has helped address misunderstandings and duplication of efforts.

Several partners reached out to BCI after the meeting, expressing their excitement for the momentum we gathered during the meeting and their appreciation for the environment of trust and empowerment that the meeting helped build. From this meeting, current partners found resources within the existing network and started to find ways to collaborate with other current partners as well as new collaborators. Several project proposal ideas are already being discussed between partners who were connected for the first time at the meeting, including sharing of knowledge and expertise for the development of green business enterprises, collaborative educational programs, the deployment of survey technologies for monitoring program metrics of success in new areas, and opportunities for sustainable funding mechanisms. The stewardship expertise and capacity that is present in this network of diverse partners is immense and will continue to propel the on-the-ground work forward.

Pillar 1: Administrative Capacity

With the establishment of a network comes the need for administrative capacity to coordinate the network. As a newly forming network, we are currently working to define the current and aspirational structure and operational aspects of the network, drawing from a Collective Impact model (Kania and Kramer 2011) to guide the development of network structure and governance.

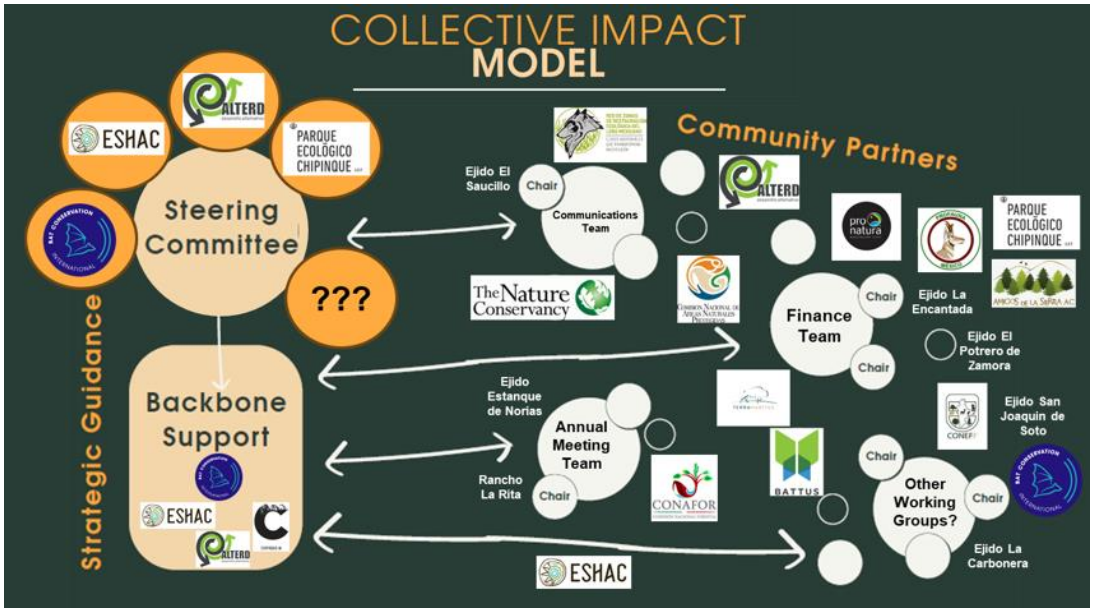
BCI has taken on the role of a “backbone organization”, offering staff time to leading network development activities and governance. In this role, BCI is serving a catalytic role in bringing partners together, and also acting as a connective thread between diverse partners across a large region, helping maintain the “big picture”, large landscape view guided by the long-distance migratory nature of the focal bat species of the Agave Restoration Initiative.

We also have a Steering Committee unofficially formed with BCI and three local NGO partners from the region (Especies, Sociedad y Hábitat, A.C.; Alterd Alternativas para el Desarrollo, A.C.; and Parque Ecológico Chipinque) and we are now looking towards diversifying the Steering Committee to be more inclusive and representative of the partners involved in the network as well as developing more

participatory processes for engagement in the network so that there is true shared ownership of the network. We are also working to begin establishing specific "working groups" or "project teams" that can take on specific network needs as we progress (e.g., Funding Team; Communications Team, Annual Meeting Team, etc.).

A key priority for the Steering Committee is drafting a network charter which will outline the purpose and mission of the network, establish a collective vision, and set the structure of the network. We informally began this process in the November 2022 network meeting in Monterrey, and we're working to create a charter draft to share with the network and solicit feedback. The Steering Committee is also currently working through the development of a formal, joint Theory of Change for the northeast Mexico region, as well as the creation of short, medium, and long-term working plans and budgets.

All these network development activities are being supported through BCI's participation in the Salazar Center for North American Conservation's Peregrine Accelerator for Conservation Impact program.



A draft Collective Impact structure for the Northeast Mexico Agave Restoration Network.

Pillar 4: Ability to Share Knowledge and Experience

A key component of successful networks is the ability to share knowledge and experiences among partners of the network as well as with entities outside the network. To this end, we have been developing mechanisms for knowledge and skill sharing within the network, as well as communications strategies for public outreach. The goal of these mechanisms is to develop and maintain open, honest, and timely communication that will allow for better coordination and cooperation among all partners and will help maintain motivation for partner involvement.

Within the network, we are promoting the exchange of knowledge and experiences to support local and regional restoration and conservation efforts through hosting partner summits and creating peer-to-peer learning networks. Our (potentially annual) Northeast Mexico Agave Restoration Network meeting will bring partners together in person to continue developing network governance structures, evaluation

mechanisms, and collaborative projects. BCI staff have also been traveling to individual communities and visiting with local partners periodically throughout the year to maintain communication streams and discuss project progress, obstacles, and work through any challenges that may be arising. Our peer-to-peer learning opportunities also include "exchange of experience" trips that bring together numerous partners (both within the northeast Mexico region and from other regions) to learn from one another on various topics of interest. For example, we are establishing a network between community-based green business enterprises to facilitate knowledge-sharing. Though each community and business are unique, they will face similar challenges. We intend to support a network—through communication channels and/or knowledge-sharing events—so businesses can learn from each other and benefit from each other's lessons-learned and innovations.

Our current digital communication methods include a WhatsApp group for the network and a semi-regular newsletter to provide opportunities for highlighting partner achievements and sharing of resources. These mechanisms will help facilitate ongoing dialogue in between in-person meetings.

These knowledge sharing mechanisms will allow us as a network to better develop, adopt, and promote innovation in all aspects of our work (e.g., novel conservation technologies for monitoring bats and habitat impacts; innovative techniques for nursery production, regenerative agriculture, and ranching; business and marketing models adapted to nature-based, sustainable business; financing mechanisms, etc.). These knowledge sharing mechanisms will also provide outlets for celebrating local and regional achievements to inspire current network members and hopefully gain support of new partners.

For knowledge sharing outside the network, BCI has been creating a marketing strategy utilizing multi-media assets to draw media and public attention to the Agave Restoration Initiative, local projects, partners, and the network. A key part of the messaging focuses on the socio-economic benefits of the work, and making bat conservation relevant in a much broader form. Some of these communication examples include:

- BCI's "We Belong Together" online campaign highlighting the inter-connectedness of bats, agaves, and people: https://www.batcon.org/batsandagave/
- Yale e360 article "How Preserving Agave Could Help Save an Endangered Bat" (later reposted on Wired): https://e360.yale.edu/features/a-fine-balance-is-upended-among-agave-mexican-bats-and-humans
- Current Conservation article "Agaves give us life: Restoring agaves for bats and people": https://www.currentconservation.org/agaves-give-us-life-restoring-agaves-for-bats-and-people/
- El Paso Times article "Adopt a plant, save a bat: El Pasoans help create habitat for endangered bats by fostering agaves": https://www.elpasotimes.com/story/news/2022/04/29/endangered-bats-habitat-el-paso-zoo-agave-plant-adoption/7244450001/
- Texas Highways Magazine article "Hocus Pocus: The magical resilience and enduring utility of Big Bend's Prickly Plant Life": https://texashighways.com/travel/outdoors/big-bend-indomitable-prickly-plant-life/
- Various webinars and presentations (e.g., to local community groups, industry partners, National Geographic)

Pillar 5: Cross-Cultural Competence

We are guided by our tenets that BCI should: 1) focus on developing and supporting local capacity and community-based conservation; 2) provide future funders with a risk-forward, high return-on-

investment, contemporary investment opportunity (supporting local economies, protecting biodiversity, and meaningfully addressing climate change issues); 3) ensure that our bat conservation actions simultaneously deliver benefit (economic, social, cultural) to communities; and 4) deeply respect – through action – issues of justice, equity, diversity, and inclusion in the lands where we work and are funded.

Moving forward, we are working to strengthen the participatory practices of the network, with a particular eye towards inclusivity and equity with respect to network engagement, communication mechanisms, and governance. BCI has contracted with Lacy Consulting Services, LLC to conduct an assessment of equity issues present within communities in northeast Mexico and to identify pathways to strengthen participatory community-based conservation.

Component 2: Large-scale financial incentives and innovative long-term sustainable finance mechanisms

Our relevance to and impact on global sustainability goals puts BCI in a robust position for expanded global impact and large, new investments from sources previously untapped by the organization (e.g., multilateral organizations). In addition, as a coordinated network, we can demonstrate impact relevant to major funding agencies and organizations. As we continue to expand our portfolio of funding opportunities, we are overlaying our work and outcomes with the U.N. Sustainable Development Goals (SDGs) and 30x30 targets to drive attention to our program and growth in our funding streams.

The Agave Restoration Initiative addresses at least 12 of the 17 U.N. Sustainable Development Goals (SDGs).

Pillar 2: Financial Acumen

A key focus of BCI's work through the Agave Restoration Initiative over the next few years will be on encouraging the financial sustainability of restoration and conservation projects and partners, as well as the network as a whole.

With respect to funding for on-the-ground work, there is a significant need for flexibility and adaptability. With the long timescales of the work being planned and implemented, project needs sometimes change in response to unanticipated local events (e.g., wildfires) or windows of opportunity. We strive for funding that recognizes the need to be able to adapt or take advantage of new circumstances. BCI is working to raise flexible funding that can be utilized to address issues and new projects or ideas that develop.

With respect to funding for the network, we are looking for funders to invest in the structure and governance of the network, as well as to support internal learning and introspection. Collaborative evaluation of the network's functioning, areas for growth, and impact at this stage in the network's development would be a transformative endeavor.

For both fundraising aspects, consistency in funding is key. The long timescales of the work mean that workplans span years, and consistent (i.e., multi-year) funding better enables BCI and local organizational partners to build trust with local communities, make commitments that can be seen to completion, and ensure the work is having the intended ecological and social benefits.

Our strategy over the next several years will focus on implementing a more diversified fundraising strategy. We already have a fairly diverse group of funders supporting the Agave Restoration Initiative, including private philanthropy, public funds, and industry support. We want to further develop a blended finance strategy to reduce investment risk and to increase the bankability of projects, and build a landscape investment portfolio to support the local on-the-ground projects and partners as well as the functioning of the network.

We see a pivotal role for public partners like multilateral organizations such as the United Nations Development Programme (UNDP) and the Mexican federal government. Because the socio-ecological issues that the Agave Restoration Initiative addresses are large-scale, priority issues across Mexico and the U.S. Southwest (e.g., ecosystem health, drought, sustainable livelihoods, biodiversity conservation), we see immense opportunity to integrate our work and bat and biodiversity conservation goals with current government agave programs and other agricultural, sustainable development, and climate resilience programs. To this end, in March 2023 BCI met with staff from the UNDP in Mexico City to discuss collaborative opportunities and develop an MOU. We are also having ongoing meetings with federal agencies in Mexico to discuss large-scale collaborative opportunities. We envision a large-scale government/multilateral-supported agave program that incorporates bat conservation and pollination as a guiding factor, and because of the long-distance migratory nature of the bats, they can connect and catalyze opportunities for cross-pollination across distant geographies. We are also exploring avenues for incorporating agave restoration into established federal and state conservation and economic development programs.

We are also exploring newer funding mechanisms such as biodiversity/nature credits or certification, carbon markets, soft loans for community business enterprises, and crowdfunding, among others. Internally at BCI, we are participating in several programs that will help us strengthen our knowledge of

and capacity for developing these novel funding strategies (e.g. the ILCN Summer Institute, the Salazar Center for North American Conservation's Peregrine Accelerator for Conservation Impact program, conservation finance bootcamps, etc.), and program staff are collaborating with BCI's Development and Operations teams to explore the best strategies for diversifying and expanding our reach to new, larger funding sources.

In these fundraising endeavors, BCI is serving a "connector" role to connect network organizational and community partners with larger funders who they may not be able to access on their own, as well as lead grant proposal development and help mobilize assets across the network for maximum impact.

WHEN: Timeline

Our Agave Restoration Initiative launched in the U.S. in 2018, and our Northeast Mexico Agave Restoration Network unofficially launched in 2019, with significant strengthening of the network in 2022 and onwards. Over the next 5-10 years through the diverse partnerships we have established, we aim to bring our initiative to a much larger scale for long-term impact, with a goal of restoring agave habitat that protects over 300,000 agaves across the bi-national corridor over the next five years; protecting and/or restoring 50,000 acres of land; protecting at least 7 priority nectar bat roosts; supporting the development of at least 20 community and private greenhouses; providing economic benefit to at least 30 communities; launching or supporting at least 18 community-based sustainable businesses; providing training in regenerative agriculture and ranching to at least 500 community members; and raising awareness on the importance of bats, their ecosystem services, and their conservation through environmental education.

We are currently planning regional partner meetings and exchange of experience trips for the next year, as well as a third Northeast Mexico Agave Restoration Network annual meeting. Over the next year we will also be attending several workshops and conservation finance boot camps to strengthen our understanding of innovative financing mechanisms and opportunities, and we hope to develop and pilot a biodiversity/nature credit scheme within the next year.

HOW MUCH: Budget

The current Agave Restoration Initiative budget is approximately $750,000 per year to support on-the-ground projects across the 8 U.S. and Mexican states where we currently work. This is the minimum funding needed to continue our current activities and maintain our current project portfolio. However, our funding need has significantly grown as we scale up our on-the-ground work and strengthen our network approach, as well as explore and develop innovative conservation financing mechanisms.

The specifics of this larger funding need will be determined as we work through the guiding questions that we pose below around the 5 Pillars of Success (see "Guiding Questions for Our Future Work"), but we anticipate a funding need of $25-50 million over the next 10 years to provide for the current identified needs as well as long-term stability and sustainability. Based on our current portfolio and performance, we're confident that we can responsibly leverage an investment of this size to drive further growth in our large-scale landscape conservation program to strengthen our impact on global sustainability goals.

SO WHAT?: Lasting Impact

We strongly believe that our on-the-ground restoration and conservation activities and network are setting us up to have a sustained impact in the areas where we work and a significant contribution to

global sustainability outcomes. The development of a coordinated action network will help us and our partners be more efficient in our on-the-ground work, avoid duplication of efforts, make the most effective and equitable use of limited funding and resources, and seize the opportunity to scale our impact and power to influence public and private conservation and sustainable development priorities and policies at the national and international level.

Some Lessons Learned So Far

The Agave Restoration Initiative launched in 2018 with the first small-scale agave plantings in Arizona. Since then, we have expanded to 8 U.S. and Mexican states and established over 60 partnerships, planting over 80,000 agaves and protecting/restoring nearly 23,500 acres of land (as of July 2023), as well as achieving a wide array of broad environmental and social goals.

To address the urgent needs of migratory endangered species and fragile ecosystems in the coming years, conservation actions must implement landscape-level changes, benefiting entire ecosystems rather than focusing only on individual species. We also firmly believe that there is no conservation without people. Conservation programs must be co-developed and implemented with the communities living in the environment where the work is taking place. We can—and must—create solutions that allow human communities and nature to thrive together. The cornerstone of our work is community collaboration and co-development of conservation actions that simultaneously support bat conservation goals and community livelihoods. By integrating bat conservation goals with local community needs, we also help ensure the durability of the work and the outcomes.

Community-based conservation requires building and maintaining trust and long-term relationships with communities. With each community we engage in, we commit to continuing our engagement for the long-haul. Many rural communities have had negative experiences with researchers and conservationists who initiated positive programs but left after only a year or two. BCI is taking the time required to build trust by genuinely earning trust. We partner with local organizations—nonprofits, universities, governmental agencies, etc.—that already have a long history of working with and for these communities. Partnering with organizations with existing community ties helps us connect to the communities more quickly and begin our conservation work and trust-building more quickly.

Finally, we are seeing more and more the importance of visibility of the work and the socio-ecological benefits and impact, and the importance of investing in marketing and communications strategies to promote the work and partners. We have seen that local visibility among communities and landowners increases landowner/community interest in partnering with the program, and that public visibility generates and catalyzes funder investment. We will continue to strengthen our communications strategies moving forward to help us achieve our long-term goals.

Guiding Questions for Our Future Work

As we expand our work and strengthen our on-the-ground and network strategies, we seek insight on several guiding questions that span the 5 Pillars of Success.

Pillar 1: Administrative Capacity

Are there layers/levels of engagement with the network, and if so, what are they and what are the expectations for each level?

Is the network open or bounded? Who is invited and at what level?

How is the network governed, in terms of decision-making?

Who is on the Steering Committee currently, and who are we missing? How can we best diversify the voices on the Steering Committee?

Are there emergent hubs or working groups/project teams that can tackle specific needs within the network?

What products should we focus on developing over the next 6 months as a network? 1 year? 3-5 years? For example, a network charter (currently in development), evaluation metrics and plan, landscape finance strategy, etc.? What tools have others found useful in developing these types of outputs?

Do we need a designated network "coordinator" and/or meeting facilitators, rather than having network development, coordination, and meeting planning/implementation fall solely on staff of the current Steering Committee members?

Do we need separate regional networks, or an integrated bi-national network ("network of networks")? The Agave Restoration Initiative covers a vast, bi-national landscape, with each region often having discrete needs and contexts. In addition to our Northeast Mexico Agave Restoration Network, we have begun coordinating a Northwestern Mexico network, although this network is currently not as fully formed or "formal". As we move forward, we are considering whether fully-formed, formal networks are necessary for each region, and if a coordinated bi-national network (or "network of networks") is needed. To help us think through this, we are working through the question of "At what scale does it make sense to do what activities?". This will help guide our decision making around network development and the scales needed. If we do decide that we want to develop separate regional networks, would we want the same network model across all our work regions or different models to match the unique contexts?

What role does BCI play in the short term and long term in the regional Northeast Mexico Agave Restoration Network, and any other networks/hubs that are set up?

Pillar 2: Financial Acumen

How do we equitably raise and distribute funding within and across the network?

We estimate that the budget for project/on-the-ground program needs is approximately $750,000 per year across the 8 U.S. and Mexican states of the Agave Restoration Initiative. How much is required for network development and facilitation?

Pillar 3: Stewardship Expertise

How do we measure the social benefit and metrics of success of our on-the-ground restoration efforts?

How do we measure success of the network, and how do we know that we/our network is being helpful? We envision cyclical evaluation of the network´s mission, vision, goals, and outcomes to adapt and improve over time, but what metrics/indicators can be used to measure success and usefulness?

Pillar 4: Ability to Share Knowledge and Experience

What are the most effective communication mechanisms for the network and the Agave Restoration Initiative as a whole?

Are there other initiatives/efforts that we should be engaging with? For example, we are currently connecting with the Network for Landscape Conservation and the Center for Large Landscape Conservation and exploring the resources they have available for network development and "best practices".

Pillar 5: Cross-Cultural Competence

How do we ensure equitable participation in and communication among the network, Steering Committee, etc., taking into account varying levels of access to things like technology (for example, some of the ejido partners do not have phone or internet access) and the language needs (Spanish, English)?

What incentives exist and could be developed for partners to participate? For example, BCI can help connect partner organizations and communities with larger funders, lead reporting for grants obtained by the network, etc.

How can we mobilize assets across the network equitably?

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5.5 The Friends of the Silvio O. Conte National Fish and Wildlife Refuge

Markelle Smith and Konstantinos Gouzias

Introduction

The Friends of Silvio O. Conte National Fish and Wildlife Refuge ("Friends of Conte") works to support the enhancement of the Silvio O. Conte National Fish and Wildlife Refuge to better serve the needs of the public, including natural resource protection, partnership programs, public education, recreation and other activities consistent with its legislated purposes. The Friends of Conte uses grassroots organizing, advocacy, and communications efforts to build public and political support for the Conte National Wildlife Refuge and partners with the refuge to support and enhance its programs.

Since 2005, Friends of Conte has facilitated a thriving network of public and private organizations and individuals whose collective efforts forge mutually beneficial partnerships. Today consisting of more than 70 groups representing land trusts, watershed associations, outdoor educators and recreation interests across four States, The Friends of Conte has strengthened the health of the Connecticut River Watershed and it's communities through conservation, restoration, research, engagement, advocacy, and recreation.

Mission and Goals

Friends of Conte has worked to provide a forum, foundation and framework to forge partnerships to benefit wildlife, people, and environmental quality in the Connecticut River Watershed. Over several months of strategic visioning meetings in 2015, Friends of Conte has focused the organization's purpose and work into a clear and concise mission and goals:

Mission:

To cultivate and sustain a healthy Connecticut River Watershed for all

Goals:

1) Conserve, restore, and steward our lands and waters
   - The Friends recognize that the Connecticut River watershed is filled with special systems that provide habitat for plants and animals. Using a host of scientific tools, they will identify the most important places and actively work to conserve, restore, and steward them.
2) Ensure Access and Recreation
   - All citizens of the Watershed will have the opportunity to experience the natural beauty of the Watershed. The river and Watershed are accessible to people of all abilities and backgrounds.
3) Engage and inspire the watershed community
   - All members of the community understand and appreciate the Connecticut River Watershed. As a connected community, we make good decisions that enhance the quality of life in our watershed.
4) Promote a resilient and adaptive watershed
   - Climate change resiliency will be an integral part of our work across goals. By creating and providing tools to decision makers, the Friends of Conte can help communities

prepare for changes in climate that are already impacting the Watershed and the wellbeing of our human and natural communities.

History

The Friends of Conte and the Silvio O. Conte National Fish and Wildlife Refuge trace their origins back to 1991 and the then Republican Representative Silvio O. Conte from Massachusetts' 1st District. Born in Pittsfield, Massachusetts, Silvio O. Conte represented his home state as a Member of Congress for 32 years. He was an avid outdoor sportsman and strongly supported environmental causes. In 1991, he introduced federal legislation - H.R.794, Silvio O. Conte National Fish and Wildlife Refuge Act - ensuring the protection of the Connecticut River Watershed.

After being passed by Congress, The Refuge was established in 1997 with the first acquisition of protected land, creating what is now known as the Silvio O. Conte National Fish and Wildlife Refuge. In 2005, a small group of committed partners formed the Friends of Silvio O. Conte National Fish and Wildlife Refuge to assist the Refuge. For the past 18 years, the Friends have worked cooperatively with the Conte Refuge and local communities on land, water, and trail projects under their shared goal of strengthening the health of the Connecticut River Watershed and the communities that are served by it.

Today, the Conte Refuge, together with the Friends of Conte and partner organizations, has protected over 42,000 acres across the four Watershed States of New Hampshire, Vermont, Massachusetts, and Connecticut. Now, with President Biden's ambitious "America the Beautiful" Initiative, calling for 30% of US lands and waters to be conserved by 2030, and the passing of The Inflation Reduction Act in 2022, substantial opportunities and funding have been made available for the Friends of Conte to facilitate the acquisition of land, river, and wetland restoration projects, and to work with communities to ensure that conserved land is accessible well into the future.

H.R.794 - Silvio O. Conte National Fish and Wildlife Refuge Act - Legislative Purposes

1) To conserve, protect, and enhance the Connecticut River valley populations of Atlantic Salmon, American shad, river herring, short nosed sturgeon, bald eagles, peregrine falcons, osprey, black ducks, and other native species of plants, fish, and wildlife;

2) to conserve, protect, and enhance the natural diversity and abundance of plant, fish, and wildlife species and the ecosystem upon which these species depend within the refuge;

3) to protect species listed as endangered or threatened, or identified as candidates for listing, pursuant to Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.);

4) to restore and maintain the chemical, physical, and biological integrity of wetlands and other waters within the refuge;

5) to fulfill the international treaty obligations of the United States relating to fish and wildlife and wetlands; and

6) to provide opportunities for scientific research, environmental education, and fish and wildlife-oriented recreation and access to the extent compatible with other purposes stated in this section.

Organization and Structure

Friends of Conte is governed by an Executive Committee comprised of local, state, and regional organizations based in each of the Watershed States, as well as a Steering Committee which includes all organizational members of the Friends of Conte in addition to those on the Executive Committee. The Friends is open to membership from any organization that supports their mission, with formal approval by the Steering Committee. Additionally, the Friends can establish and maintain Task Committees to execute their work. These committees could include advocacy/government relations, strategic planning, and recreation or education programs.

Currently, there are four members of the Executive Committee representing organizations based in the Watershed, more than 70 member organizations, three Committee Chairs, and one full-time, paid staff that is tasked with following and implementing the policies of the Friends of Conte guided by the Executive Committee and Steering Committee. Mass Audubon, a current member, also serves as the Fiscal Agent for the Friends.

Where - The Silvio O. Conte National Fish and Wildlife Refuge

Stretching from the Canadian border to Long island Sound through the States of New Hampshire, Vermont, Massachusetts, Connecticut, and a tiny sliver of Maine, The Silvio O. Conte National Fish and Wildlife Refuge is the only congressionally legislated watershed-based refuge in the National Wildlife Refuge System.

Within it's 7.2-million-acre boundary, The Refuge is home to thousands of species of flora and fauna and more than 1.5 million acres of conservation land (approximately 22 percent of total area), with the Conte Refuge alone protecting over 42,000 acres across all four watershed states (shown in Map 1). It represents a wide variety of unique habitats such as: northern forests valuable as nesting habitat for migrant thrushes, warblers, and other birds; rivers and streams used by shad, salmon, herring and other migratory fishes; and an internationally significant complex of high-quality tidal fresh, brackish and salt marshes.

The Watershed supports 396 communities where about 2.4 million people reside; roughly half of this population is in designated urban areas. This fact makes the Conte Refuge not only one of the most forested watersheds, but also one of the most urbanized. Its proximity to urban spaces makes it crucial for providing access to the outdoors for underserved communities. It is estimated that approximately 4.75 million acres of the Watershed are undeveloped and under private ownership – providing ample opportunity to work with private landowners to achieve conservation goals for their properties.

There are many opportunities for outdoor recreation throughout the Watershed. Visitors can hike a section of the 215-mile New England National Scenic Trail; bike on the Pondicherry Rail Trail in northern New Hampshire; paddle and camp on the Connecticut River Paddlers' Trail; or section hike portions of the Appalachian Trail Corridor.

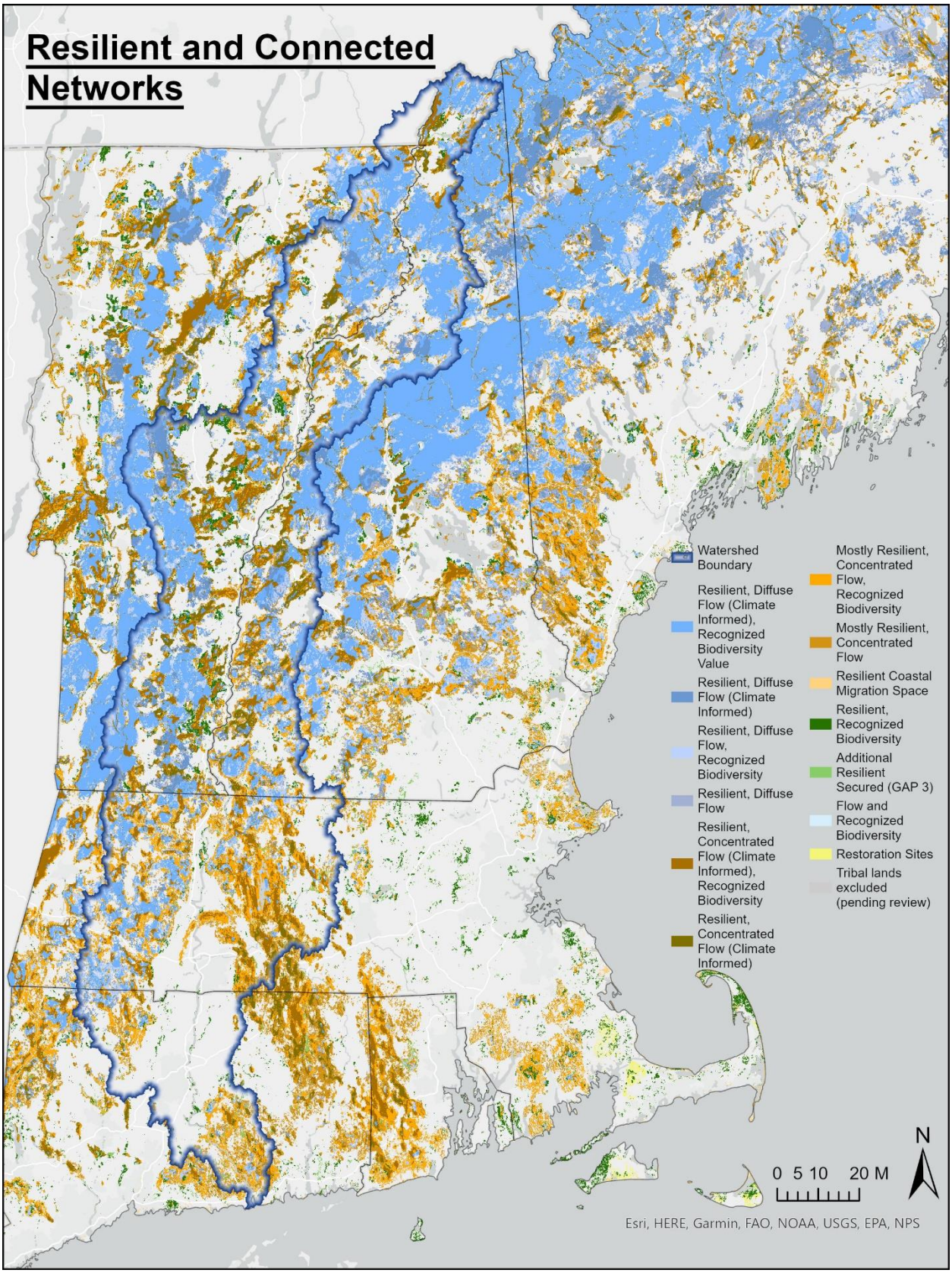
Why Should We Protect the Watershed?

With the growing threat of climate change and the impact that the Watershed has on local economies, it is imperative that we ensure a resilient and thriving Watershed for the future. There are 2.3 million people who rely on the Connecticut River for drinking water, and an additional 2.5 million people who get their drinking water from reservoirs filled by the Connecticut River.

New England's outdoor recreation industry contributes a combined $17 billion and 195,000 jobs across the four watershed states. On average, wildlife refuges nationwide return $4.87 to local economies for every $1 Congress provides in federal funding.

The Conte Refuge is in one of the major climate corridors of the Northeast and plays an essential role in creating both resilient human and natural communities. By conserving floodplains, forests, and wetlands, the Friends of Conte are reducing the vulnerability of local cities and towns to flooding, supporting groundwater recharge, and maintaining some of the largest stores of carbon in New England. Much of the Refuge overlaps with The Nature Conservancy's Resilient and Connected landscapes - natural highways and neighborhoods which, if conserved, offer a chance of sustaining biological diversity into the future while helping species move and adapt to a changing climate (seen in Map 2, below).

More than 2.4 million people live within the Refuge's boundary, and over 70 million people live within a day's drive of the Refuge, providing critical access to nature. This offers a unique opportunity for the Refuge and the Friends of Conte to improve access for underserved communities. A study by Harvard Forest found that 39% of census tracts in the Conte Refuge have Social Justice Characteristics (defined as census tracts in the lowest quartile of median household income, highest quartile of percent of people of color, or highest quartile of percent language isolated in New England). Investment in the refuge could be part of a strategy to improve environmental justice from urban to rural communities.


Resilient and Connected Networks
Watershed Boundary
Resilient, Diffuse Flow (Climate Informed), Recognized Biodiversity Value
Resilient, Diffuse Flow (Climate Informed)
Resilient, Diffuse Flow, Recognized Biodiversity
Resilient, Diffuse Flow
Resilient, Concentrated Flow (Climate Informed), Recognized Biodiversity
Resilient, Concentrated Flow (Climate Informed)
Mostly Resilient, Concentrated Flow, Recognized Biodiversity
Mostly Resilient, Concentrated Flow
Resilient Coastal Migration Space
Resilient, Recognized Biodiversity
Additional Resilient Secured (GAP 3)
Flow and Recognized Biodiversity
Restoration Sites
Tribal lands excluded (pending review)
N
0 5 10 20 M
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS

How We Fulfill Our Roles

The work of the Friends is done through short-term working groups, focused on specific timebound initiatives and through the work of standing committees:

Conte Urban Partnership (CUP) Committee

The CUP work is focused on enhancing the presence of the Friends and the Refuge in urban areas in the Connecticut River Watershed. CUP promotes land conservation, restoration, education, trail and other project opportunities particularly in and around Springfield, MA and Hartford, CT. They seek to remedy inequities in access to nature and to enhance transportation options for residents of cities in the Watershed.

Advocacy Committee

Members make annual trips to Washington D.C. and host local field trips to inform and educate congressional representatives about the importance of the Connecticut River Watershed. They prepare an annual Look Book highlighting critical land conservation, restoration, trail and stewardship project opportunities in all four watershed states. The Advocacy committee is also responsible for tracking legislation important to the Watershed and ensuring that members are aware of federal funding opportunities. They are also working to increase state funding for open space and trails in underserved communities.

Recreation and Education Committee

Members are working on making the river accessible for all and bringing Watershed resources to Watershed communities. They have made great progress on the Connecticut River Paddlers' Trail by establishing several new campsites in Massachusetts and Connecticut. They are also working to establish additional Conte Corners (information areas) at local museums.

Legislative Working Group

The Friends are currently working to advance the Connecticut River Watershed Partnership Act (CRWPA). This legislation will create a dedicated funding stream to leverage state, local, and private investments in nonregulatory conservation, restoration, education, and recreation efforts in the Watershed. The CRWPA is modeled on successful partnerships enabled by federal legislation via the Chesapeake WILD Act (2020), and the Delaware River Basin Conservation Act (2015). It will enhance coordination among federal agencies and state, regional, tribal, and local public and private partners. The legislation is supported by a broad coalition of public and private organizations throughout New England who seek to diversify the organizations and sources of funding for programming within the Watershed. This collaborative effort will help promote access to the Watershed's public spaces, particularly for excluded and marginalized communities.

Comprehensive Conservation Plans (CCP)

In addition to the above committees and working group, members of the Friends of Conte played an instrumental role in developing the Silvio O. Conte National Fish and Wildlife Refuge Comprehensive Conservation Plan. The CCP provides long-term guidance for management decisions on the Refuge and sets forth goals, objectives, and strategies needed to accomplish refuge purposes. These plans are primarily for strategic planning and program prioritization purposes.

Look Book: Fiscal Years 2024 and 2025 Appropriations Request

Every year the Friends of Conte releases a Look Book, which summarizes their collective vision for protection and restoration investment in the Connecticut River Watershed in the Fiscal year. A summary of the Friend's Look book for fiscal years 2024 and 2025 is shown in Figures 1 and 2 below. Over $27 million for Land Water Conservation, and $11.5 million across 48 river connectivity and restoration projects like dam removals and floodplain restorations have been identified.

Land and Water Conservation Fund Request			
State	Number of Projects	Acres	Dollars
Conneticut	17	1,114	$6,260,500
Massachusetts	15	1,270	$5,760,000
New Hampshire	13	6,012	$11, 232,967
Vermont	6	1,494	$3,940,000
FY 24/25 Totals	**51**	**9,890**	**$27,193,467**

fig 1

River Connectvity and Restoration Opportunities	
Project	Total Amount Needed
Dam Removal	$4,965,000
Culvert Replacement	$3,560,700
Foodplain Restoration	$2,225,000
Strategic Wood Additions	$225,000
Trail Restoration	$290,000
Riparian Buffer Plantings	$125,000
Wood Turtle Habitat Work	$100,000
Annual Water Chestnut Control	$75,000
FY 24/25 Totals	**$11,565,700**

fig 2

Accomplishments

While serving as a network that links the private and public conservation organizations withing the Watershed, the Friends of Conte has accumulated a broad list of accomplishments over the years.

1) Secured $32.2 million dollars in funds for key projects throughout the watershed, including the addition of more than 12,735 acres to the Refuge and more than 350,00
2) Obtained designation of the Connecticut River as the first National Blueway in the nation
3) Advocated for authorization and full funding of Land Water and Conservation Fund
4) Enhanced access to stateside LWCF grant funds through multistate webinars and cross-state coordination
5) Enhanced access to federal LWCF via facilitating partnerships between Conte/USFWS and land trusts
6) In FY22 secured $12.2M in earmarks for the Conte Refuge in VT and NH; plus, an additional $5M from president's budget for all 4 states
7) Worked with the Refuge to establish 'Conte Corners' in area museums (Springfield Museums, Montshire, Cabela's in East Hartford, Fairbanks Museum, etc.)
8) Developed 7 new primitive campsites on the Connecticut River Paddlers Trail, completing the MA section
9) Advocated for $100M in Long Island Sound funding over the next five years through the Infrastructure bill
10) Mapped environmental justice communities and overlap with Conte CFAs through partnership with Harvard Forest.

What's Next - The Friends of Conte Atlas

The Friends of Conte is a regional network of partnerships that emphasizes collaboration across the public and private sectors within a specifically defined, yet significant, geographic area. With this in mind it lacks its own strong foundation in Geographic Information Systems (GIS) and reliable access to spatial data. Many of the smaller partner organizations face a similar issue.

As a conduit for various conservation organizations in the Connecticut River Watershed, the Friends is in a unique position to serve as a hub of spatial data to assist partners and advance the goals of the Silvio O. Conte Wildlife refuge. The need for authoritative spatial data and the infrastructure to disperse that data to partners has led to the development of The Friends of Conte Atlas.

The development of the Atlas will follow this general workflow:

1) Establish a well-organized foundation for GIS at Friends of Conte.
2) Tap into the Friends' network to establish a point of contact with our partner's GIS departments.
3) Exchange spatial data and workflows to collect, manage, and analyze regional spatial data for the Watershed by working with partners.
4) Process, style, and display data using ESRI web apps made public for our partners (i.e., Dashboards, Storymaps, ArcGIS Experience).
5) Create an online directory of shapefiles to share authoritative data to our partners for their own analysis (Possible through ArcGIS Hub).

Data

Figure 4 below lists examples of spatial data that have already been collected and processed for the purpose of the Friends of Conte Atlas. Although this is not an exhaustive list, it does provide some context as to what kind of data could be used by partners for use in suitability models, advocacy, or education.

Spatial Data	
Protected Land	FWS Land Accquistions
Areas of Unprotected Biological Importance	Richness fo Imperiled Species
Resilient and Connected Networks	Fair Market Value Land Cost
Enviromental Justice Focus Areas	Farmland Classification
Index of Deep Disadvatage	Per capita Public Acess
Tribal Land	Land Ownership by Acre
Combined Sewer Overflow	State Water Revolving Funds
Impervious Surfaces Without Tree Cover	Climate Risk and Resilience

Figure 4

ArcGIS Hub

ArcGIS Hub is a powerful tool for this project in that it taps into the collective effort that characterizes the Friends of Conte. It works to maximize engagement and collaboration across organizations. Essentially, we can host data on Hub, and it make it public for download by our partners to be able to work with on their own.

ArcGIS Hub is extremely versatile, data can be downloaded as shapefiles, CSV, KML, and more. As an open data portal, Hub can allow the Friends to provide data for organizations that don't have the funding for ESRI products and must rely on open-source software such as QGIS or even Google Maps.

Conclusion

There is no denying that protecting the Connecticut River Watershed is not only valuable to local and bordering communities, but essential to ensure the health and well-being of communities facing climate change impacts. The Friends of Conte provides a necessary network of public and private partners that allows for the collaboration necessary to achieve this goal.

Through the use of GIS and collaborative tools, the Friends of Conte can both advocate for and educate communities on the importance of the Watershed. Most people in New England do not identify with their Watershed, even with the direct impact that its health has on their lives. Through the open sharing of spatial data and use of maps, the Friends of Conte can provide a forum and framework to help shift this paradigm in people's minds to understand that their watershed is important and directly related to their well-being.

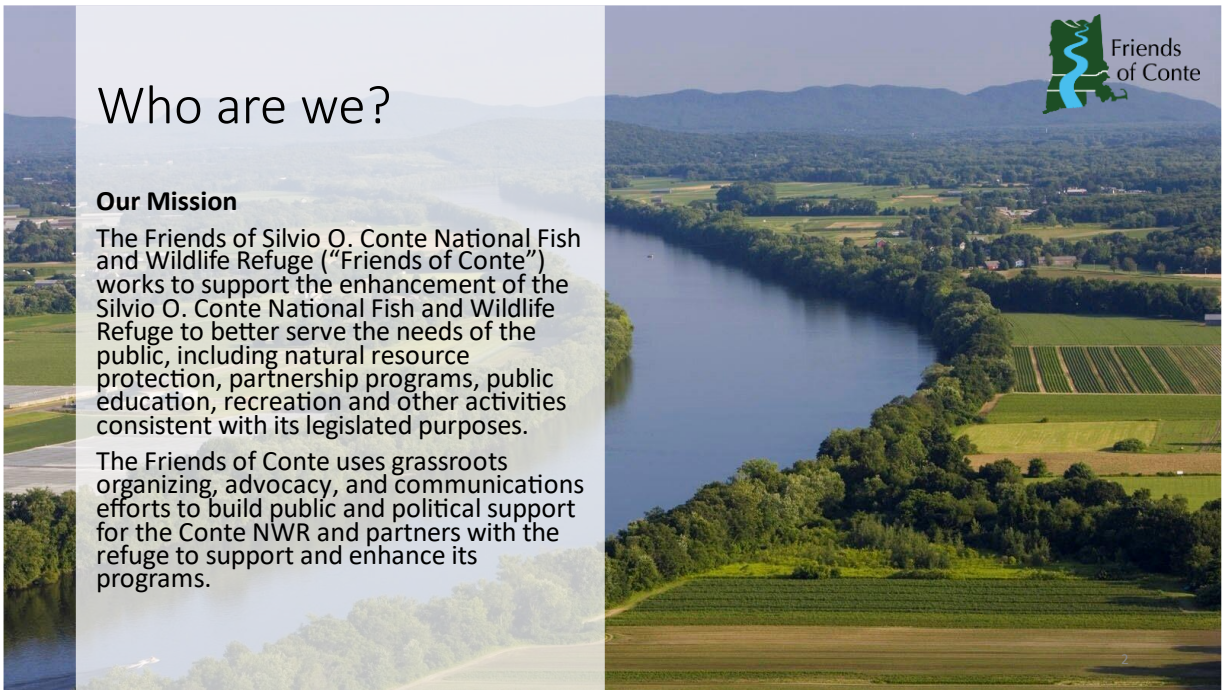
SLIDE PACK PRESENTED BY KOSTAS GOUZIAS TO THE ILCN SUMMER INSTITUTE, JULY 2023

Friends of the Silvio O. Conte National Fish and Wildlife Refuge

Friends of Conte

Konstantinos Gouzias

Slide #1



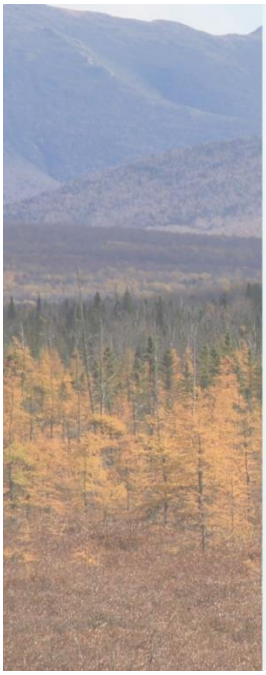
Slide #2

Executive Committee	• **Chair** – Kristin DeBoer, Kestrel Land Trust • **Vice Chair** – *vacant* • **Treasurer** – Alisha Milardo, Connecticut Audubon Society • **Secretary** – Mary Pelletier, Park Watershed
Committee Chairs	• **Advocacy** – *vacant* • **Recreation and Education** – Dan Augustino, Springfield Museums • **Conte Urban Partnership** - Mary Pelletier, Park Watershed
State Representatives	• **Vermont** – Chris Campany, Windham Regional Commission • **New Hampshire** – David Govatski, Friends of Pondicherry, Friends of Nulhegan • **Connecticut** - Kirsten Martin, University of Saint Joseph
Staff	• **Director** - Markelle Smith, Mass Audubon
Fiscal Agent	• Mass Audubon

Friends of Conte is governed by an Executive Committee comprised of local, state and regional organizations based in each of the watershed states. We provide a forum, foundation and framework to forge partnerships that benefit wildlife, people and environmental quality in the Connecticut River watershed.

The Friends of Conte is made up of more than seventy groups representing land trusts, watershed associations, outdoor educators and recreation interests in the five-state watershed.

Slide # 3



Friends of the Silvio O. Conte Refuge, Membership

Those in bold are Friends of Conte leadership

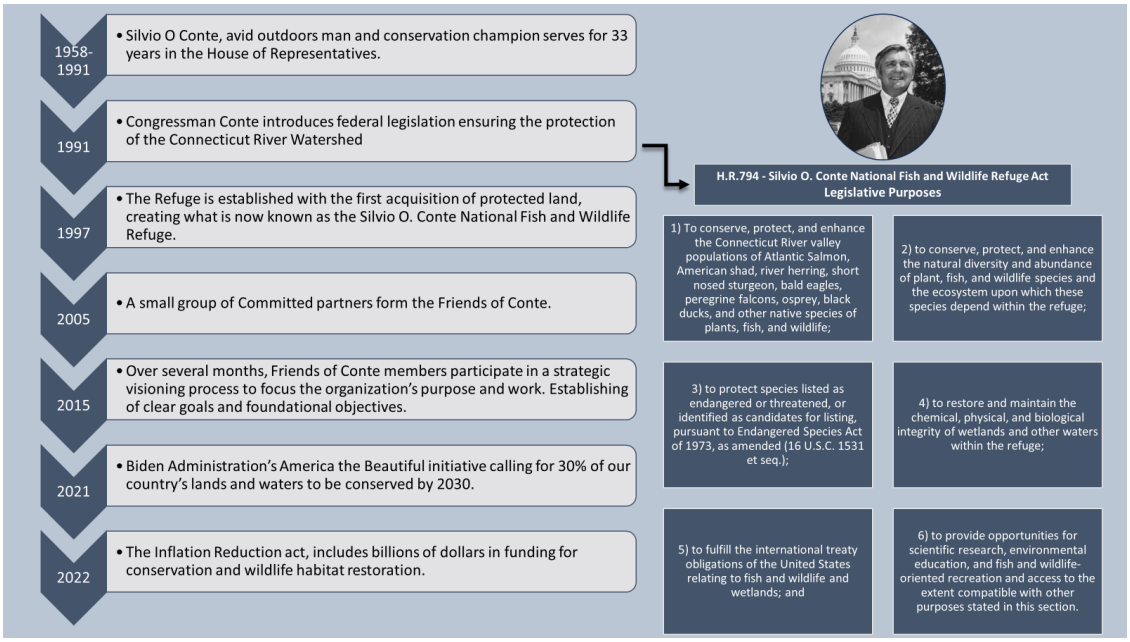
American Farmland Trust
American Rivers
Appalachian Mountain Club
Appalachian Trail Conservancy
Audubon Society of New Hampshire
Audubon Vermont
Cabela's Common Ground
Connecticut Audubon Society
Connecticut Forest & Park Association
Connecticut Ornithological Association
Connecticut River Conservancy
Connecticut River Joint Commissions
Connecticut Science Museum
Farmington River Watershed Association
Franklin Land Trust
Friends of Connecticut River Paddlers Trail
Friends of Fannie Stebbins
Friends of Fort River
Friends of Great Falls Discovery Center
Friends of Nulhegan Basin
Friends of Peterson
Friends of Pondicherry
Friends of Salmon River
Great Falls Discovery Center
Highstead
Hilltown Land Trust

Kestrel Land Trust (FOC Vice Chair)
LandVest, Inc.
Lincoln Institute of Land Policy
Lower CT River Valley Council of Governments
Massachusetts Audubon
Massachusetts Audubon (FOC Director)
Middlesex Land Trust
Mount Grace Land Conservation Trust
National Audubon Society
National Park Service, New England Scenic Trail
National Wildlife Refuge Association
New Haven Bird Club
North Quabbin Regional Landscape Partnership
Northeast Waterfowl Festival
Northern Forest Alliance
Northern Forest Canoe Trail
Northwoods Stewardship Center
Nulhegan Gateway Association
Park Watershed
Pioneer Valley Planning Commission
Putney Mountain Association
Rails to Trails Conservancy
Rivers Alliance of Connecticut
Save the Sound
Siskin Ecological Adventures

Society for the Protection of New Hampshire Forests
Springfield Science Museum
Trout Unlimited Trust for Public Land
The Conservation Fund
The Nature Conservancy
The Nature Museum
The Trustees
University of Saint Joseph
US Environmental Protection Agency
US Fish and Wildlife Service
US Department of Agriculture, Natural Resources Conservation Service
US Forest Service, White Mountain National Forest
US Geological Survey, Connecticut Water Science Center
Vermont Institute of Natural Science
Vermont Land Trust
Vermont River Conservancy
Westfield River Watershed Association
Westfield River Wild and Scenic Committee
Wilderness Society
Windham Regional Commission
Windows on our Waters

Friends of Conte

Slide # 4



Slide # 5

What Are Our Goals?

Mission

- To cultivate and sustain a healthy Connecticut River watershed for all.

Goals

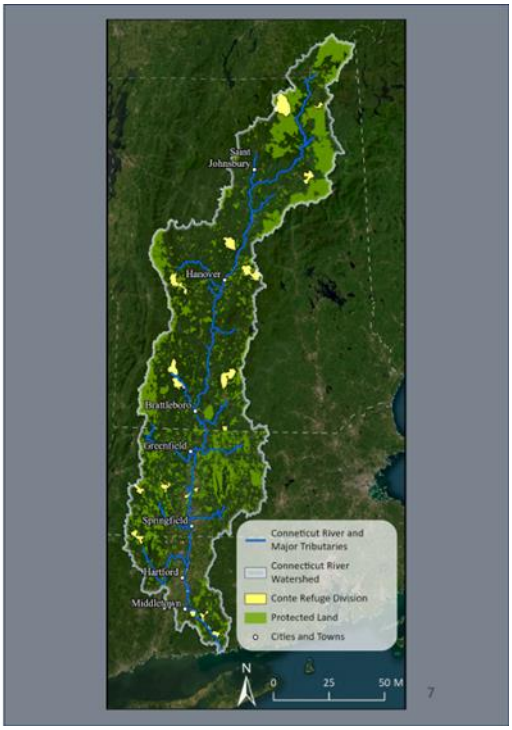
- Conserve, restore, and steward our lands and waters
- Ensure Access and Recreation
- Engage and Inspire the Watershed Community to Work Together
- Promote a Resilient and Adaptive Watershed

6

Slide # 6

The Silvio O. Conte National Fish and Wildlife Refuge

- The Refuge is the only congressionally legislated watershed refuge in the National Wildlife Refuge System, encompassing the entire 7.2-million-acre Connecticut river Watershed.
- The Conte Refuge is not only one of the most forested watersheds, but also one of the most urbanized.
- The Watershed supports 396 communities where about 2.4 million people reside; roughly half of this population is in designated urban areas.
- The Refuge is home to thousands of species of flora and fauna and more than 1.5 million acres of conservation land (21 percent of total area), with the Conte Refuge protecting over 42,000 acres alone across all four watershed sates.
- 4.75 million acres in the watershed remain undeveloped and under private ownership, providing ample opportunity to work with private landowners to achieve conservation goals for their properties.
- The Connecticut River is the Nations first and only National Blueway.



Slide # 7

How We Fulfill Our Roles

Working Groups & Committees

Conte Urban Partnership (CUP)

- Our CUP work is focused on enhancing the presence of the Friends and the Refuge in urban areas in the Connecticut River Watershed. CUP promotes land conservation, restoration, education, trail and other project opportunities particularly in and around Springfield, MA and Hartford, CT. We seek to remedy inequities in access to nature, enhancing transportation options for residents of cities in our Watershed.

Advocacy

- Our members make annual trips to Washington D.C. and host local field trips to inform and educate our congressional representatives about the importance of the Connecticut River Watershed. We prepare an annual Look Book highlighting critical land conservation, restoration, trail and stewardship project opportunities in all four watershed states. The Advocacy committee is also responsible for tracking legislation important to the watershed and ensuring the membership is aware of federal funding opportunities. In addition to federal funding opportunities, we are also working to increase state funding for open space and trails in underserved communities.

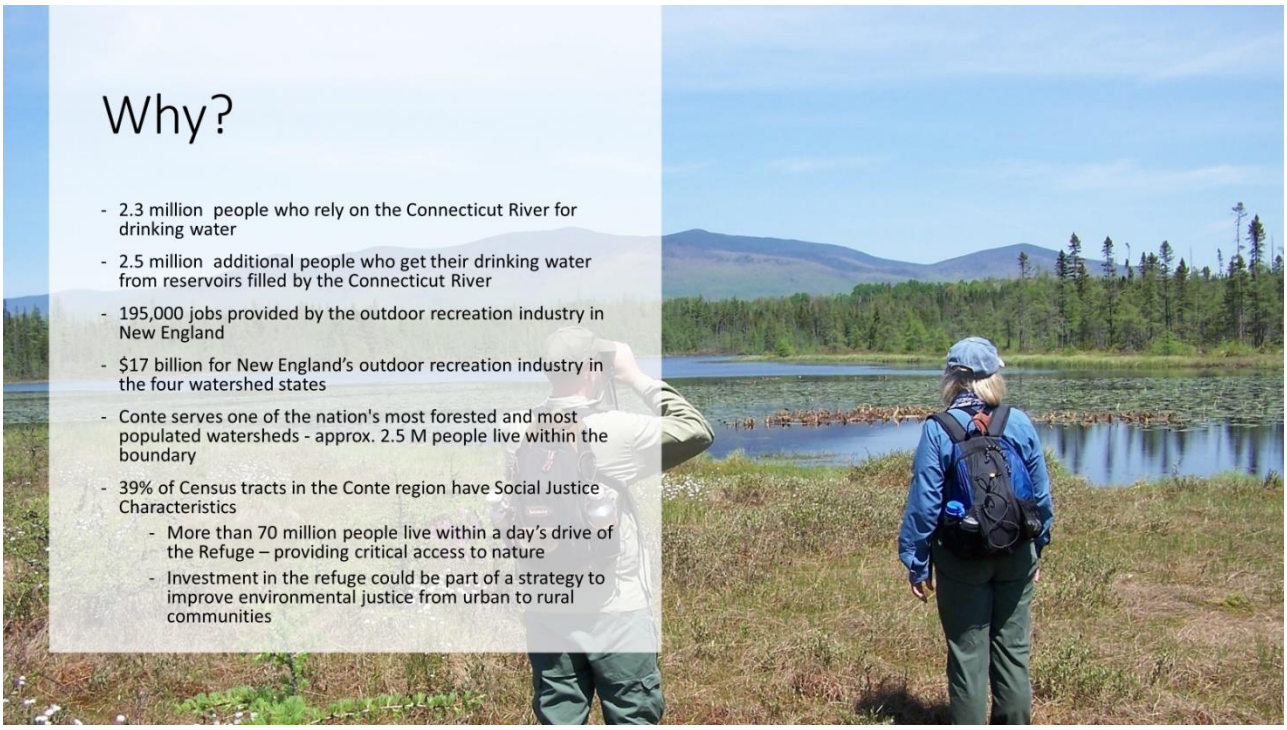
Recreation and Education

- Our members are working on making the river accessible for all and bringing Watershed resources to Watershed communities. We have made great progress on the Connecticut River Paddlers' Trail by establishing several new campsites in Massachusetts and Connecticut. We are also working to establish additional Conte Corners at area museums.

Look Books → Annual and Quartey Meetings → Comprehensive Conservation Plans

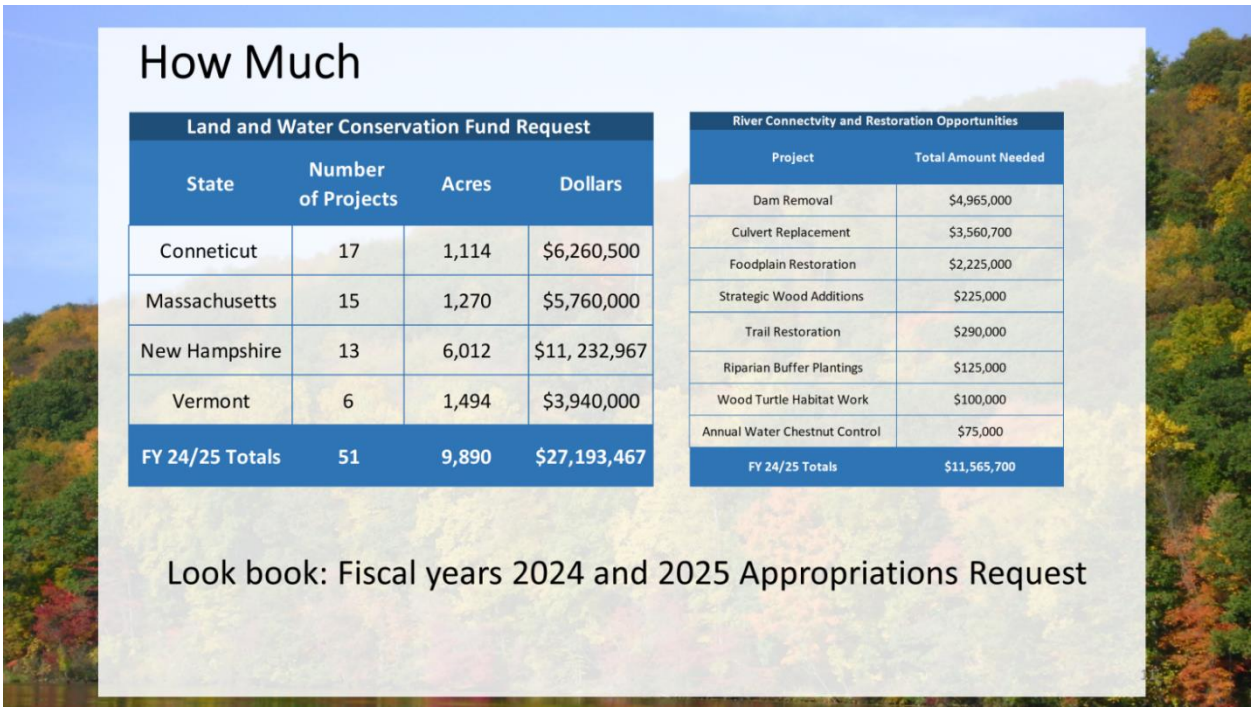
8

Slide # 8



Slide # 9

Slide # 10



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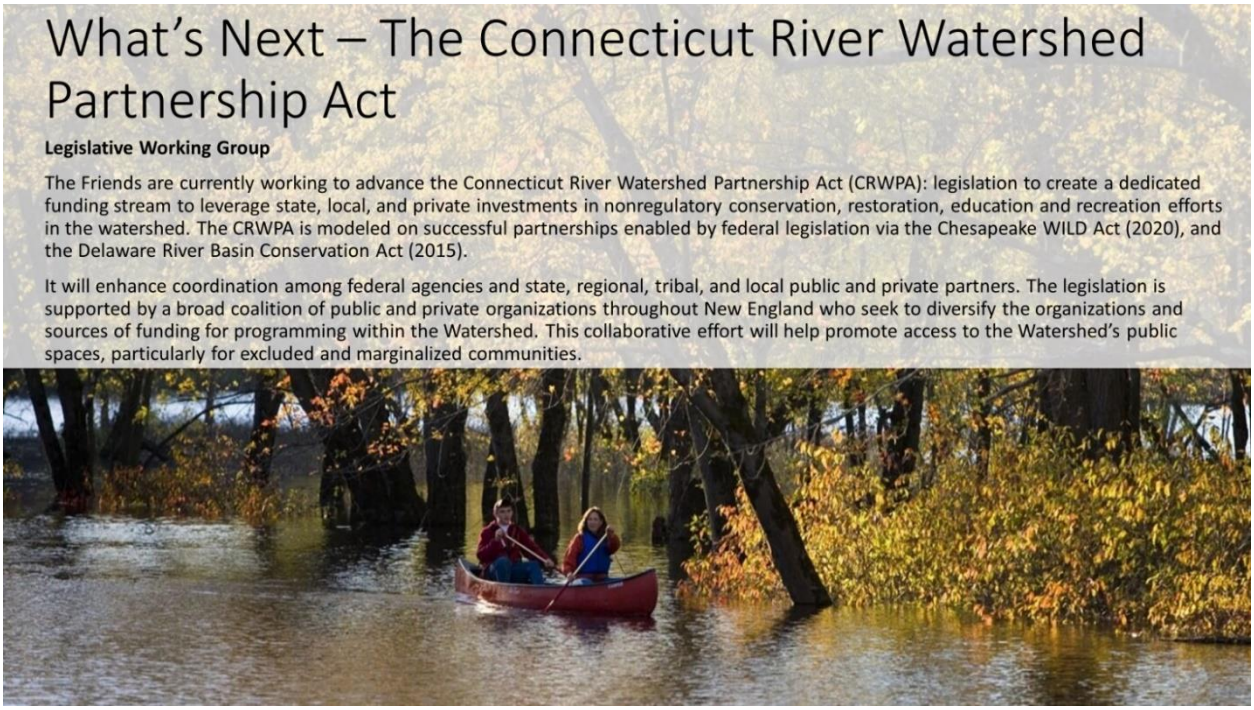

Slide # 12

What's Next – The Friends of Conte Atlas

Friends of Conte lacks its own strong foundation in GIS and reliable access to spatial data. Many of our smaller partner organizations face a similar problem.

As a conduit for various conservation organizations in the Connecticut River Watershed, the Friends is in a unique position to serve as a hub of spatial data to assist partners and advance the goals of the Silvio O. Conte Wildlife refuge.

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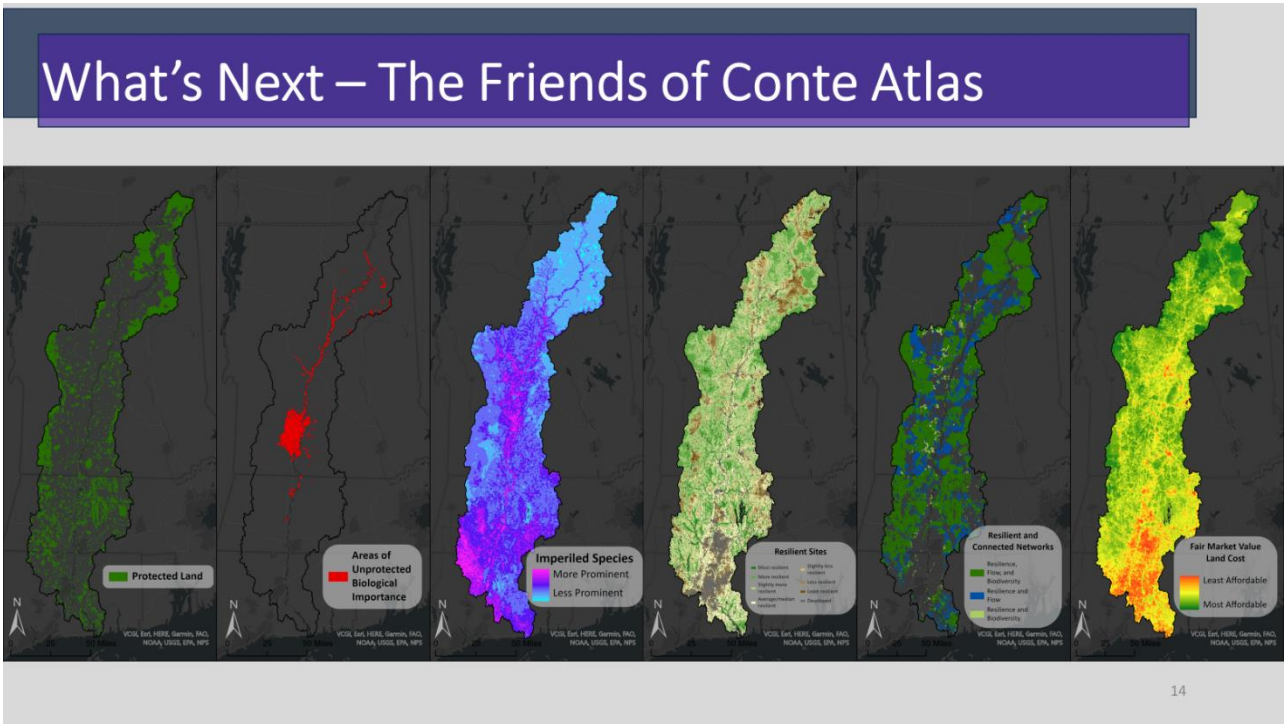
- Establish a well-organized foundation for GIS at Friends of Conte.
- Tap into the Friends' network to establish a point of contact with our partner's GIS departments.
  - Center for Geospatial Solutions, Mass Audubon, Fish and Wildlife Service, etc.
- Exchange spatial data and work flows to collect, manage, and analyze regional spatial data for the Watershed by working with partners.
- Process, style, and display data using ESRI web apps made public for our partners.
  - Dashboards, Storymaps, ArcGIS Experience
- Create an online directory of shapefiles to share authoritative data to our partners for their own analysis
  - Possible through ArcGIS Hub.

ArcGIS Hub

13

Slide # 13



Slide #14

Is Friends of Conte a Landmark Conservation Innovation?

Novel and creative in conception?

Strategically significant?

Measurably effective?

Model transferable to other contexts?

Enduring?

15

Slide # 15