

Environmental Studies Capstone Seminar ENVST-UA 900

“Protecting Nature Through Sustainable Finance”

Fall Semester 2019

Mondays 6:00-8:30pm

12 Waverly Place, Room L111

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Office hours: Mondays 1-3pm, Room 714, 1 Washington Place

Meeting Room: Building:

Capstone Focus – Applying Conservation Finance Principles

The role of finance in conservation: Our capstone experience will examine the intricate connection between finance, business, and the conservation of nature. Our work as conservationists is principally focused on measures to ensure that development projects minimize, avoid, or offset any adverse impacts to the integrity of critically important ecosystems, and sustain and enhance habitat connectivity, reduce risks from exotic and invasive species, maintain hydrologic function, and ensure overall ecosystem resilience on public and private lands and waters. At the same time, we need to ensure that the business world supports these same values. We also need to guarantee that sufficient funding is permanently in place to finance the conservation programs that can help achieve all of these goals. As a result, the principles of **conservation finance** have now become an integral part of the work of every conservation practitioner. Conservation finance is a rapidly evolving interdisciplinary field using a variety of innovative tools to raise funds and other resources needed, and works with governments, NGOs, and businesses to create local and international economies that support nature conservation.

Conservation finance efforts seek to engage the business and finance community in the work of nature conservation in a wide variety of ways, including:

- Within the public policy context, by allocating sufficient public resources and creating national government support for regulatory mandates that level and/or clarify the playing field;
- Within the financial sector, by creating commitments to banking, lending, and investment standards that work towards no net loss for biodiversity and ecosystems (NNL) and potentially net positive impacts (NPI).
- Within the capital markets, by driving financial gain and leverage to the corporate players who account for and avoid, minimize, or mitigate impacts to biodiversity, ecosystems, and scarce natural resources.
- On the ground, by creating incentives for individual producers in agriculture, forestry, tourism and related locate enterprises to adopt more sustainable practices; and,
- Within the supply chain, by reshaping the terms of demand and setting new standards for entire sectors of production.

The outcome from these new financial incentives, investments, and policies can result in a diverse, and potentially large source of funds for conservation programs. They can also reshape entire economies to be more sustainable and ecologically resilient. Our work in the 2019 Fall capstone experience will examine how these finance tools can be used to develop a specific conservation finance strategy for key biodiversity resources in a highly threatened natural area. In the course of our capstone project you will examine the principles, tools, and practice of conservation finance, and you will work as part of a team to develop a conservation finance proposal for a real world nature conservation project being implemented by Innovations in Conservation LLC (www.icons-group.com).

You are contributing to ICONS Sustainable Finance Initiative (SFI) – Innovating Conservation LLC (ICONS) is collaborating with several partner organizations, including The Ocean Foundation, Chemonics International, and the International Union for the Conservation of Nature (IUCN) to (a) engage governments, banks, impact investors, and businesses to adopt and apply safeguards in the financing and development of emerging environmental markets, and (b) develop integrated conservation finance programs with governments and civil society. The ICONS SFI also contributes to the policy changes necessary to motivate these sustainable investments, and the science required to support it. Your work in the 2019 capstone experience will produce a critical analysis of conservation finance practices being developed in one specific ecological context in order to establish lessons learned to guide the ICONS SFI. The students in the capstone experience will work together as a cohesive team to select one ecological context and then carry out the research necessary to describe the

characteristics of a sustainable finance program for the country or region in which their research is focused.

Your Project Site

The collaborative student team will collectively select **one project** from the following three options:

1. Develop a finance strategy to support the marine conservation work being carried out by the province of Yucatán, México – your work will support The Ocean Foundation’s Caribbean Marine Research and Conservation Program - <https://www.carimar.org/>) (*this focus will require the capacity to review some research materials in Spanish*)
2. Develop a finance strategy to support key marine protected areas of western Cuba, with a particular focus on managing impacts from tourism, and artisanal and commercial fisheries. your work will support The Ocean Foundation’s Caribbean Marine Research and Conservation Program - <https://www.carimar.org/>) (*this focus will require the capacity to review some research materials in Spanish*)
3. Develop a finance strategy to support a new trust fund designed to strengthen local livelihoods, biodiversity conservation, and sustainable infrastructure development in the Okavango river basin in Angola-Namibia-Botswana. – your work will support the OKACOM-Resilient Waters-ICONS trust fund program (<http://www.okacom.org/okacom-commission> and <https://www.chemonics.com/projects/clean-water-resource-conservation-angola-botswana-namibia/>)

Thus, the full group of students enrolled in the capstone seminar will collectively select **one** of these project areas and then carry out the research and planning work necessary to prepare a proposal for a conservation finance project to support the on-going ICONS work in that site. Your proposal may include recommendations to strengthen lending and investment practices; leverage funding from traditional corporate developments; stimulate “green” businesses; or other innovative methods to increase the amount of funding available to meet the nature conservation goals of the larger ICONS work in the area.

The Work You Will Produce

Students in the capstone will divide into three teams, with each team taking on the tasks to research, document, and report on one of the following topics:

- 1.0 *The Business Case team* – The members of this team will develop a business case for the proposed conservation finance strategy. This work will include describing the social, cultural, institutional/legal, and economic context in which the proposed conservation strategy will be developed. What are the principle threats and challenges to biodiversity in the area of the project, and how do these social, cultural, institutional/legal and economic factors either drive these threats, or represent an opportunity to mitigate them?
- 2.0 *The Finance Strategy team* – The members of this team will develop the instruments that will raise funds to support the conservation work, and encourage sustainable business practices in the project area. What sources of funding currently exist to support the proposed conservation actions, and what is the gap in funding that must be filled to ensure permanent conservation of cultural and biological resources? What new funding sources can be developed and accessed to eliminate existing financial gaps and ensure the permanent conservation of cultural and biological resources? How can sustainable banking and investing standards make a difference for nature? What measures can be used to leverage funding for conservation from extractive and other mainstream businesses? What innovative or “green” businesses are taking hold in the affected area, and what measures can be put in place to further expand and strengthen these sustainable business ventures? What role can philanthropy, donations, loans, and other development funds play in this process? What should be the role and place of government in these financial strategies? What lessons can be learned from microfinance, smallholder finance, investment banking, and other entrepreneurial efforts to incubate “green businesses”?
- 3.0 *The Communications, Marketing, and Education team* – The members of this team will outline the program and tools to be used to inform and engage stakeholders and the general public, the business community, and other potential partners and collaborators in the finance strategy. Your team will describe the materials to be developed to build dialogue and support for the conservation finance strategy being proposed.

In sum, you are writing a proposal for a conservation finance project that will enhance the work being carried out by ICONS and its partners in the project area. The three teams will work collaboratively to propose a finance strategy that can fill the financial gap, encourage sustainable business practices, and create a sustainable conservation initiative. The finance strategy will identify and prioritize the most promising conservation finance tools that can ensure that sufficient funding is available to support the nature conservation goals in the project area over the immediate and long term.

You must send me an email prior to our first class on September 16 with your preference for the project area focus and for the team on which you want to work. I will then tally the preferences and we will confirm the choices at the beginning of our meeting on September 16. Please include a second option for your preferred team to help in this selection process.

LEARNING GOALS:

The capstone experience will allow students to:

- Develop familiarity with social and natural science literature on biological diversity, nature conservation, sustainable natural resource uses, environmental economics, and conservation finance.
- Develop familiarity with social and environment standards used by international and local banks to manage impacts to biodiversity and natural resources, including the Performance Standards of the International Finance Corporation, the Equator Principles, and green credit policies of selected national governments.
- Develop familiarity with trade agreements used to manage impacts to biodiversity and natural resources.
- Define the components of a conservation finance strategy and evaluate market-based alternatives to generate revenues to support conservation programs.
- Identify and evaluate biological and social indicators that can be used to determine the effectiveness of sustainable finance policies and practices.
- Articulate solutions to conservation problems using marketplace tools.

Class Outputs: Each group will produce a final project assessment that includes a written report; visual summary of the key points included in the report (using PowerPoint); and a formal presentation of project results to an audience of your peers. The format for the written report will be elaborated in class during weeks one and two. The PowerPoint formal presentation will be delivered during the final week of the semester to an audience including other ES capstone students; representatives from the organizations engaged in the ICONS SFI program; NYU faculty, and interested community members. The presentation will be approximately 25 minutes in duration, including time allocated for questions and dialogue.

Intended Client: The results from this project will contribute to one of the on-going projects being implemented by ICONS and its global partners, including international and local NGOs, governments, development finance institution. The project will provide a model for conservation finance that can be shared with banks, impact

investors, businesses, and private landowners to understand ecosystem and natural resource-based income opportunities from traditional and emerging markets.

Statement of interest: Students interested in participating in the project should have completed coursework in environmental science, conservation biology, and economics, with a demonstrated interest in the use of business and market tools to advance conservation.

Class Structure and Content

We will meet for at least 10 sessions during the course of the semester (thus we will not necessarily meet every week.) Our meetings will be divided into a 1.5 hour discussion and topic exploration period, followed by a 30 minute project work session in which each team will have time to consult and advance their respective research topics, and work on the final collaborative presentation.

The first 60 minutes of each weekly meeting will be led by me and devoted to a concise overview of a specific conservation finance topic that may offer tools or technical support to the finance proposal you will develop over the course of your capstone experience. Each topic covered represents a key instrument or element in the practice of conservation finance. You will be assigned selected reference materials to help you prepare for each week's topic, and the reference materials will be made available in a topic folder in the "Resources" tab on our NYU Class page. You are strongly encouraged to study these references before arriving to our class work session.

Starting with our 2nd class meeting, the second 45 minutes of the class will be led by a student in the capstone seminar. The student leading this session will prepare a short activity designed to engage fellow students in a practical analysis of the week's topic, and include at least 3 questions that can guide a deeper dialogue on the topic. A sign-up sheet will be provided during the September 16 class in which students will select a topic and the week in which they want to lead the class in this discussion. The student leading this session should submit their proposed activity and 3 questions to me at least 48 hours before the class begins.

The final 45 minutes of each class will be devoted to work by each team on their respective sustainable finance research tasks. The teams will use this time to explore ways to incorporate some of the ideas from the class sessions to develop research questions and strategy; review achievements; identify and mitigate obstacles and challenges to your research; and communicate with other teams to ensure that each team project will fit seamlessly into the final presentation and report.

Preparing for Classes: Selected reference materials for each class topic are available under the topic heading in the “Resources” section of our NYU class page, and students are encouraged to study these before each class meeting. *Each student is expected to provide everyone in the seminar with a list of any additional readings or other materials that they feel are necessary to support the class sessions they will lead. Any supplemental materials must be distributed to everyone in the capstone at least 2 days before our class meeting.*

Project update reports: Each team will prepare and deliver to the instructor a 1-page status report on work accomplished, and present a concise status summary to the full team at the beginning of the 4th and 9th class meetings. The status report will summarize accomplishments, obstacles and challenges, and a proposed strategy to complete the project work. The class will then offer collaborative advice to individual groups to help them mitigate obstacles and challenges, and we will use these reporting sessions to ensure that each team project is continuing to fulfill the overall class objectives.

Getting the Message Across: We will dedicate our final meeting of the semester to consolidating and finalizing the content of your group’s assessment, and preparing oral and visual presentation materials to communicate a concise, but thorough synopsis of your findings. We will work with public speaking and communications skills to strengthen your ability to communicate technical information in a public setting.

A great deal of self-directed, independent work is expected in this course. You should anticipate and allocate time for meetings with your team outside of our formal class meeting times. These supplemental meetings will be essential to keep pace with the work needed to advance the team project.

Assignments/Products – Formats – Grading - Policies

Your final grade for the capstone experience will be determined through an assessment of five factors:

1. Class Preparation / Attendance / Participation / Effort – 20% of final grade

Preparation and attendance are expected for all class meetings. Your participation will be evaluated according to substance and regularity of contribution to in-class discussion, respect for classmates, and support for project team members’ needs. Your effort will also be evaluated by receptivity to new skills and ideas, responsiveness to the needs of the client, collaboration within groups, and a demonstration of your understanding of the subject matter expertise over the course of the term.

Team update reports (10-minute oral presentation) are considered as part of your class participation grade and are due on during classes 4 and 9.

2. Work Plan – 5% of final grade

In week one we will outline the focus and tasks for the semester project and form 3 teams to respond to the specific themes within the project. Each team will then work collaboratively to produce a concise work plan for the topic your Project Team seeks to address. This plan will include an introductory summary that explains the purpose of your team’s initiative; how it will fit into the overall semester project; and a description of the research strategy you will follow. The plan will also include a table showing your proposed work schedule, with dates, milestones, and individuals responsible for each milestone. The Work Plan serves four primary functions:

- It will provide context and background for the research work your group is doing;
- It will define the outputs you will produce from your work (e.g., the “deliverables”);
- It will provide a map or blueprint for how you plan to achieve the outputs and results your team will produce; And,
- It will describe each person’s specific role and responsibilities – in other words, what each person in the group will do achieve your team’s results. Your personal work plan should sync with and support the proposed outcomes for your team, and for the cumulative class project report.

The team Work Plan is due at the beginning of Class 3.

3. Class Discussion – 5% of final grade

Each student will sign up to lead 1 class session during the semester. Each session must include at least three questions that will help us deepen our understanding of the week’s selected topic. The student leading the discussion session must also identify and distribute 3 additional resources (readings, videos, etc.) on the topic of the day prior to the team meeting. The additional resources must be different from those assigned, and must be sent to everyone in the capstone at least 24 hours prior to our team meeting time. The student leading this discussion session can, if they wish, also choose to include an activity that engages the entire class in a way that will further enhance our understanding of the topic. Examples of activities could include short exams; hands-on construction, drawing, or writing projects; games; role-plays, or on-line research. Activities can be assigned individually, in small groups, or to the entire group. Each

student-led discussion will be graded on organization, presentation, and engagement of the class.

4. Interim Written Project Status Reports – 10% of final grade

Each student team will submit a written status report on the work their team has completed towards the final presentation and the final report. The status report will include a summary and analysis of the following factors:

- A summary of the work completed to date by each student on the team
- An analysis of the information and results found to date.
- A summary of obstacles, constraints, or limitations encountered in completing the research work to date, and a description of actions to be taken to overcome or mitigate these constraints.
- Proposed next steps to complete the research and prepare for the final presentation and final report.
- A list of references, resources, or individuals contacted to support the research to date.

The first interim project status report is due at the beginning of the 4th class (October 7). The second interim project status report is due at the beginning of the 9th class (November 18).

5. Final Presentation – 25% of final grade

A formal presentation will be delivered at the end of the capstone to an audience including representatives from the client NGOs, stakeholder groups, other project participants, ES and other faculty, and interested community members. The final presentation will be made by the entire class. Thus all 3 teams must collaboratively develop a unified presentation summarizing each group's results. The unified presentation should provide a summary of findings and recommendations that can help advance the semester project. The presentation will include a 25-minute oral summary supported by PowerPoint or other visual media, as appropriate. The PowerPoint will serve as a concise visual summary of the content of your final report. It should include a maximum of 25 slides. The presentation will be graded on the quality, appearance and content of presentation; preparation and delivery of materials; ability to work as a team; and responses to audience questions, objections, and concerns.

6. Final Project Report – 30% of final grade

Each group will contribute to the production of one coherent, synchronized final project

report. *The final report will be structured as a proposal that can be submitted to funders or potential project partners in order to obtain financial or other resources, or institutional support for a specific conservation finance project.* The final report should describe the specific work carried out; the results derived; lessons learned from your experience; and recommendations for follow-on actions that can be carried out to further develop the work that you have started. The team report can be organized and structured in any fashion that the class chooses. However, the report can only be a maximum of 25 pages in length and should include, at a minimum, the following information:

Executive Summary – a 1-2 page summary of the key points included in the report

The Business Case – The business case answers the question, “what results can we expect from investments in our proposal?” It explains how you have evaluated the best revenue opportunities; the most viable alternatives for achieving these opportunities; and the resources you will need to make it happen. The business case will also include a clear and thorough description of the context of your proposed project – the ecology and biodiversity at stake; social and cultural conditions; livelihoods and economy; and institutional, legal and policy framework. It will also include a description of the key conservation risks, threats, and opportunities in the selected project area. The description of the context for your project will be essential in order to understand the impacts you hope to make, and to show how your project will make a positive difference, and demonstrate why it will succeed. It has many uses, including convincing potential funders, project partners, or other stakeholders that developing a business plan and financial strategy is worth the effort. It will also show where you have gaps that are likely to slow or impede your efforts. There is a great deal of information on line to guide you to prepare a business case, if you are unfamiliar with the process, but the key steps are to (a) make certain you have identified and prioritized income opportunities that are truly achievable; (b) analyzed all possible alternatives to accomplish your opportunities; (c) provided evidence to support your decision to pursue one or a couple of opportunities; and (d) outlined an implementation strategy that will get you there.

The Finance Strategy – In this section of the report you will describe the specific activities your project will carry out and show how they will increase the opportunities for conservation success by either creating new funds to pay for conservation work, or strengthening the sustainability of local economies and livelihood opportunities. This is the heart of your proposal, and it should help your audience understand the following:

- What are the ecological threats, challenges, needs, and opportunities in your

project area? What technical, institutional, and financial resources presently exist to support these needs and opportunities? What financial gaps exist that may constrain the achievement of these needs and opportunities?

- What responsible banking, investment, and other conservation finance measures are already in place in your project area, and how can these be strengthened or further developed? What other financial mechanisms can be used to achieve the conservation goals? What evidence is available to help prioritize these finance opportunities, and estimate the potential return that could be realized?
- What will your proposal cost to develop and implement, and what are the specific benefits you expect to see after implementing your proposed strategy? What are the critical factors we must monitor to demonstrate success?

Be certain to show any changes needed to achieve these recommended next steps – institutionally, socially, and financially.

Communications, Marketing, and Education Program – In this section, you will describe the methods and measures you will use to inform funders, institutional partners, and potential beneficiaries of the details of your proposal. This strategy includes the methods you will use to attract investors and funders to support your strategy; and to get people in the project area to participate and take advantage of the opportunities you are creating. Your strategy should include samples to demonstrate the type of communication, marketing, or education campaigns you will use to create interest and support for your project.

Conclusions and Recommendations – A summary of the Business Case, Finance Strategy, and Communications program. (*recommendation: 2-4 pages*)

References

Individuals contacted (if appropriate)

Appendices – include here charts, graphs, survey instruments, or other materials that are supplemental to, but supportive of the main body of the proposal. This information is not counted towards the total length of the document.

7. Self Assessment - Your Lessons Learned (5% of final grade)

At the end of the capstone experience each student will submit a 1-page summary outlining the contributions they made to the collaborative final project, and summarizing your personal lessons learned from the challenges and successes of your

capstone work. Your Self-Assessment should also include your determination of how you anticipate using or including your lessons learned in your future studies, work, or life investigations.

The Final Proposal, PowerPoint and 1-page Self-Assessment summary is due by noon on December 13, 2019.

Formats: All written materials will be submitted on standard letter-sized paper format, using Times-Roman 12-point font, with 1.5 spacing and 1 inch margins. Citations from peer-reviewed or published materials are essential and must be formatted as endnotes. Citation style will be MLA format. Citation pages do not count against maximum page limits for written products.

Visual presentation material will be in Microsoft Office PowerPoint format.

Attendance and Other Class Policies

Attendance will be taken for all classes, and students are expected to attend all classes on time. You must notify the instructor ahead of time if you will miss a class for any reason, and you are still expected to complete any assignments for each class. Because coursework will be cumulative, any material missed due to absences must be made up for the following week. More than one unexcused absence will result in a loss of one grade level.

As the culminating experience in your Environmental Studies major, the performance expectations for the Capstone Seminar are very high. Successful performance in the class requires a significant amount of self-initiated research, synthesis of research across multiple disciplines, and clear communication of complex, applied topics. As such, you are expected to read all of the reading closely, actively discuss it in class, and apply the practical and analytical skills learned during your undergraduate career.

Plagiarism Policy - Plagiarism results in failure of the class. It includes: copying sentences or fragments from any source without quotes or references; not citing every source used in your papers; citing internet information without proper citation; presenting someone else's work as your own; or inadvertently copying verbatim from any source.

Other Policies – There are no “extra credit” assignments available. You are expected to be considerate of everyone else in the class, and any chatting, texting or web-surfing

will result in you being asked to leave the class.

Contacting the Instructor

Email is the preferred option to contact me (jat10@nyu.edu or jtolisano@gmail.com). I will do all I can to get back to you as soon as possible.

Other Class Guidance

Effective Presentations - We will assign short readings and include at least one class session to support best practices in creating PowerPoints, designing visual aids, and providing effective public speaking skills, or other aspects of a successful presentation.

Methods for Pursuing Environmental Research - The instructor will recommend written and other resources on basic referencing, statistical analysis, research methods and analysis. It will be your responsibility to work with these resources and seek guidance through consultation with the instructor or other experts for areas in which you have questions or want to further develop your skills.

Resources for Group Collaboration - The NYU Classes discussion board will be used as a tool to stimulate class discussion and require active participation.

Weekly Session Topics:

Team Meeting 1 (Sept 16) – An introduction to conservation finance concepts, proposal writing, and an overview of class objectives and responsibilities – In our first class meeting we will explore an overview of how economics, finance, and business management decisions affect the work of nature conservation. We will establish what we mean by “conservation finance” and look at the options available to governments, non-governmental organizations (NGOs), banks, investors, donors, philanthropists, and other institutions to pay the costs of biodiversity and natural resource conservation. We will confirm the project area that you have selected as the focus for your semester project. We will then review the basic context and issues facing your selected project area, and establish the format, content, and structure for the proposal you will produce at the completion of your capstone experience. Each student will then confirm the research team they want to join, the class meeting they want to lead, and make certain they fully understand the overall semester requirements.

Class Preparation Materials:

Fink, Carly and Tensie Whelan, 2016. The Sustainability Business Case for the 21st Century Corporation. NYU Stern Center for Sustainable Business, October 2016. 30 pp.

Credit Suisse/World Wildlife Fund, 2014. Conservation Finance - Moving beyond donor funding toward an investor-driven approach. Gland, Switzerland, 32 p.

Cranford, M., Leggett, M., Oakes, N., Parker, C. ed., 2012. The Little Biodiversity Finance Book, Global Canopy Programme; Oxford. *For our first class read pages 15-109*

World Wildlife Fund, 2009. Guide to Conservation Finance, 54 pp.

Nebiu, Besim, 2002. Project Proposal Writing. The Regional Environmental Center for Central and Eastern Europe, 38 pp.

“How to Write a Business Case”, 3pp.

Team Meeting 2 (Sep 23) – Conservation Finance Tools – Trust Funds –

We will review how conservation trust fund mechanisms are set up, funded, and operated, and examine case studies of trust funds that have been created in the U.S. and worldwide to ensure long term protection of nature and natural resources.

Class Preparation Materials:

Adams, John S. and Ray Victorine, 2011. Permanent Conservation Trusts – A Study of the Long-Term Benefits of Conservation Endowments. 14 pp.

____, 2011. Environmental Trust Funds. In Managing Marine Protected Areas: A toolkit for the Western Indian Ocean, 2pp.

Tolisano, Jim, Katy Mathias, and Ray Victorine, 2013. Developing a Conservation Trust Fund for the Western Indian Ocean Coastal Challenge. Indian Ocean Commission internal report. Read pp. 13-47.

http://www.abcg.org/action/document/show?document_id=678

Bladon, Annabelle, Essam Yassin Mohammed, and E. J. Milner-Gulland. 2014. A Review of Conservation Trust Funds for Sustainable Marine Resources Management: Conditions for Success. IIED Working Paper. IIED, London. 42 pp.

<http://pubs.iied.org/16574IIED>

Spergel, Barry and Kathleen Mikitin, 2015. Practice Standards for Conservation Trust Funds. Conservation Finance Alliance.

Global Environment Facility, 1998. Evaluation of Experience with Conservation Trust Funds. GEF Secretariat, Monitoring and Evaluation Team, 79 pp. Downloaded from:

<https://www.cbd.int/financial/trustfunds/g-gefevaluation.pdf>.

Team Meeting 3 (Sep 30) – Conservation Finance Tools – Offsets and Compensation Agreements –

We will review how governments or lending institutions (banks, equity investors) can require developers to pay for conservation measures that will offset irreversible environmental impacts. We will examine the

regulatory or policy changes that will need to occur for such offset and compensation plans to make a difference on the ground.

Class Preparation Materials:

The Biodiversity Consultancy, 2015. "Biodiversity Offsets".

<http://www.thebiodiversityconsultancy.com/approaches/biodiversity-offsets/>. Read through the "Services", "Sectors", "Approaches", and "Projects" pages on this website.

Martine Maron, Ascelin Gordon, Brendan G. Mackey, Hugh P. Possingham and James E. M. Watson, 2015. Conservation: Stop the misuse of biodiversity offsets. *Nature*, Vol. 523, Issue 7561. <http://www.nature.com/news/conservation-stop-misuse-of-biodiversity-offsets-1.18010#auth-4>.

Susan Walker, Ann L. Brower, R.T. Theo Stephens, and William G. Lee, 2009. Why bartering biodiversity fails. *Conservation Letters* 2 (2009) 149–157

Forest Trends, 2010. Business and Biodiversity Offsets Program. 2pp.

BBOP, 2012. Standard on Biodiversity Offsets. Read pp. 6-21.

New Forests, 2010. Mitigation and Conservation Banking in the United States. 3pp.

Bovarnick A, Knight C & Stephenson J., 2010. Habitat Banking in Latin America and Caribbean: A Feasibility Assessment . United Nations Development Programme. Read pp. 1-30.

Team Meeting 4 (Oct 7) Getting the Message Across – Communication, Marketing, Outreach We will use our final class meeting to review methods to deliver formal presentations and communicate conservation to non-science audiences. We will also prepare and rehearse the content for the formal presentation the class will deliver in the final week of the semester.

Class Preparation Materials:

Markowitz, Ezra, Caroline Hodge, and Gabriel Harp, 2014. *A Guide to Effective Climate Change Communication*. Earth Institute, Columbia University. 76 pp. (although the focus is on building awareness and understanding of climate change, the approach they use is relevant for any environment issue).

Curtis, D. J., N. Reid, and G. Ballard. 2012. Communicating ecology through art: what scientists think. *Ecology and Society* 17(2): 3

U.S. Environmental Protection Agency, 2010. *Communication Strategies*, 6 pp.

_____, 2011. *Key Steps to Building a Communications Strategy*, 3 pp.

Pearson, Victoria and Carolyne Culver, 2016. *Writing a Communications Strategy*. University of Oxford, 28 pp.

Monroe, Martha, 2016. "Introduction to Environmental Communication". <https://www.youtube.com/watch?v=2MLCGQIAdb4> (the sound on this video is terrible, but her slides are a good summary).

Oct 14 – no formal class meeting (Indigenous Peoples Day). Individual research teams should make plans to meet independently during the week and advance their work towards the final presentation and report.

Team Meeting 5 (Oct 21) - An introduction to sustainable banking principles – Banks and other financial institutions are increasingly responding to conservation threats by requiring borrowers to achieve specific environment-social-governance (ESG) standards, and governments and businesses are developing the capacity to abide by them. The development and use of such standards in the lending and investment sector can also be a critical ingredient in the shift to a more "green economy". We will look at international and local safeguards being used by banks and lenders to ensure that borrowers apply best practices and standards in infrastructure and natural resource development projects. We will use the International Monetary Corporation's Performance Standards, and the Equator Principles as models that can inform national and local banks in the U.S. and internationally.

Class Preparation Materials:

Equator Principles - <http://www.equator-principles.com/index.php/about-ep>.

Equator Principles, 2013. Equator Principles III. 24 pp.

IFC Performance Standards - <https://firstforsustainability.org/risk-management/implementing-ifc-environmental-and-social-requirements/establish-and-maintain-an-esms/ifc-environmental-and-social-performance-requirements/ifc-performance-standards/>

BSR/Oxfam, 2014. Fair Bank Guide: A Feasibility Study for South East Asia, read pages 13-17.

Jan Willem van Gelder, 2006. The Dos and Don'ts of Sustainable Banking. BankTrac Manual, 21pp.

United Nations Environment Program, 2011. UNEP FI Guide to Banking and Sustainability, pp. 18-27

Imeson, Michael and Alastair Sim, 2010. Sustainable Banking - Why helping communities and saving the planet is good for business, 21 pp.

Team Meeting 6 (Oct 28) – An introduction to impact investing We will examine the potentials, risks, and constraints to using investments made into companies, organizations, or funds with the specific intent to create beneficial social and environmental impacts and an acceptable financial return. We will look at case studies of impact investments and try to determine the reach and impact these investments appear to have in terms of increased environmental conservation. *Research work plan due from each team.*

Class Preparation Materials:

Leytes, Marina, 2015. "Financing the Sustainable Development Goals with 'Blended Capital'", ImpactAlpha, September 25, 2015 <http://impactalpha.com/financing-the-sustainable-development-goals-with-blended-capital/>.

Calvert Foundation, 2012. Gateways to Impact: Industry Survey of Financial Advisors on Sustainable and Impact Investing. 18 pp.

<http://www.calvertfoundation.org/storage/documents/Gateways-to-Impact.pdf>.

Tyson, Judith, Stephany Griffith-Jones and Dirk Willem te Velde, 2014. Post crisis trends in private capital flows to developing countries. ODI Technical Report, 18pp.

<http://www.stephanygj.net/papers/PostCrisisTrendsPrivateCapitalFlowsToDevelopingCountries2014.pdf>

Global Impact Investing Network (GIIN), . The Landscape for Impact Investing in South Asia. Read: “Executive Summary” (Overview and Current State of the Market), and “Introduction”. <https://thegiin.org/knowledge/publication/the-landscape-for-impact-investing-in-south-asia>.

NatureVest/EKO Asset Managers, 2014. Investing in Conservation – A Landscape Assessment of an Emerging Market, 12 pp.

NatureVest Overview and 2015 Outlook (PPT presentation)

J.P. Morgan, 2010. Impact Investments – An Emerging Asset Class. Read pp. 5-29

Team Meeting 7 (Nov 4) – Conservation Finance Tools – taxes, fees, easements, and transfer of development rights - In this class we will review how government regulated taxes, fees, fines, and the transfer of development rights can be used to generate the finances need by agencies and NGOs to carry out conservation work. We will also examine the constraints and limitations of using taxes and fees for conservation.

Class Preparation Materials:

Pennsylvania Land Trust Association, 2015. “Transfer of Development Rights”. <http://conservationtools.org/guides/12-transfer-of-development-rights>.

University of Wisconsin Extension Service, 2005. Transfer of Development Rights, 4pp.

Higgins, Noelle, 2001. Transfer Development Rights. 2pp.

Tax Policy Center, 2015. Taxes and the Environment: What Are Green Taxes?
<http://www.taxpolicycenter.org/briefing-book/key-elements/environment/what-is.cfm>.

Sollund, Stig, 2007. Environmental Taxes. Ministry of Finance, Government of Norway, 9pp.

Dinan, Terry, et al., 2013. Effects of a Carbon Tax on the Economy and the Environment, U.S. Congressional Budget Office, 23 pp.

Stavins, Robert N., and Bradley W. Whitehead. "Greening of America's Taxes: Pollution Charges and Environmental Protection." Discussion Paper 92-03, Kennedy School of Government, Harvard University, March 1992. – read the Executive Summary, Chapter 1, and the Appendix (page 36) – *this publication is early 30 years old, but still very relevant to current needs and opportunities. Rob Stavins works way ahead of his time.*

Team Meeting 8 (Nov 11) – Conservation Finance Tools – Payments for Ecosystem Services – We will review the various options for private landowners to receive payments to protect the ecosystem values on their properties. We will specifically look at payments for carbon sequestration, water and watershed conservation, tourism, and species protection, and we will examine case studies of payment systems operating in the U.S. and worldwide.

Class Preparation Materials:

Ecosystem Marketplace, 2012. Payments for Ecosystem Services Matrix Chart, 1pp.
(study this summary of the existing markets)

Asquith, Nigel and Sven Wunder, 2008. Payments for Watershed Services – The Bellagio Conversations. 32 pp.

Asquith, Nigel M., Maria Teresa Vargas, Sven Wunder, 2008. Selling two environmental

services: In-kind payments for bird habitat and watershed protection in Los Negros, Bolivia. *Ecological Economics* 65 (2008) pp. 675-684.

Ranganathan, Janet, Fances Irwin, and Cecilia Procope Repinski, 2009. *Banking on Nature's Assets - How Multilateral Development Banks Can Strengthen Development by Using Ecosystem Services*. World Resources Institute, pp. 1-18.

Bhaskar Vira & William M. Adams, 2009. Ecosystem services and conservation strategy: beware the silver bullet. *Conservation Letters* 2 (2009) 158–162.

Jaeger, W.K., 2011. *Ecosystem Services and the Potential Role for Markets*. Oregon State University Extension Services, 30p.

Team Meeting 9 (Nov 18) Conservation Finance Tools – Green/Blue Bonds and Debt Relief An increasingly important tool in conservation finance is the use of debt instruments and debt relief to finance conservation programs. We will look at how standard bonds can be structured to fund projects that have beneficial social and environmental results, and how national debt can be restructured to achieve conservation targets.

Class Preparation Materials:

Ivory, Abby, Paul F. Brown, and David Chen, 2016. *How Green Bonds Will Become Mainstream*. *Stanford Social Innovation Review*, July 18, 2016.

World Bank, 2015. *What are Green Bonds?* 32 pp.

Richardson, Paul, 2016. *Seychelles Plans Blue Bonds to Develop Sustainable Fisheries*. *Bloomberg News*, January 24, 2016. 4pp.

KPMG, 2015. *Gearing up for Green Bonds*. 16pp.

International Capital Market Association, 2016. *Green Bond Principles*. 7pp.

Jacewicz, Natalie, 2016. *Green Bonds Grow in California*. *San Jose Mercury News*, February 16 2016, 2pp.

Cranford, M., Henderson, I. R., Mitchell, A. W., Kidney, S. and Kanak, D. P. 2011. Unlocking Forest Bonds: A High-Level Workshop on Innovative Finance for Tropical Forests. Workshop Report. WWF Forest & Climate Initiative, Global Canopy Programme and Climate Bonds Initiative. 28 pp.

UNDP, 2017. Debt for Nature Swaps. 4 pp.

Gockel, Catherine Kilbane and Leslie C. Gray, 2011. Debt-for-Nature Swaps in Action: Two Case Studies in Peru. *Ecology and Society* 16(3): 13.
<http://www.ecologyandsociety.org/vol16/iss3/art13/>.

At the end of class each team will provide a 5-10 minute report on research results achieved thus far.

The Interim Project Status Report is due at the end of this class.

Team Meeting 10 (Nov 25) – Conservation Finance Tools – Creating standards and metrics for sustainable businesses and a “Green Economy” – This class will bring us back to biology. Government policies and laws, and banking and corporate standards will only be effective if we understand how to measure and verify success. What do we measure and why? What metrics and methods do we need to be able to apply the mitigation hierarchy, IFC performance standards, or equator bank principles? What do we need to know, and what do we do with this information when we have it? We will also review certification standards and other measures being used to encourage the use of good practices in the production, distribution and marketing of agriculture, forestry, and mining products. We will look at supply chain dynamics and examine how lending and investment practices can affect each element in the supply chain. We will also explore how improved standards can help rural landowners improve their business while also increasing their attractiveness as potential clients in financial sectors.

Class Preparation Materials:

Bishop, J., Kapila, S., Hicks, F., Mitchell, P. and Vorhies, F. 2008. *Building Biodiversity Business*. Shell International Limited and the International Union for Conservation of Nature: London, UK, and Gland, Switzerland. Read Chapters 3 and 4, pp. 24-101.

Nelson, Fred and Alasdair Harris, 2016. Five Ways to Advance Conservation Entrepreneurship. *Stanford Social Innovation Review*, 7 pp.
http://ssir.org/articles/entry/five_ways_to_advance_conservation_entrepreneurship_1/

World Resources Institute (WRI) in collaboration with United Nations Development Programme, United Nations Environment Programme, and World Bank. 2008. *Roots of Resilience—Growing the Wealth of the Poor*. Washington, DC: WRI. Read Chapter 1, pp. 1-19.

Robins, Nick and Simon Zadek, 2014. Welcoming a New Generation of Green Financial Policy Innovation. <http://www.theguardian.com/sustainable-business/green-financial-policy-new-generation>.

Stem, Caroline, et.al. 2005. Monitoring and Evaluation in Conservation. *Conservation Biology*, Vol 19, No. 2, April 2005, pp. 295-309.

Gullison, R.E., J. Hardner, S. Anstee, M. Meyer. 2015. Good Practices for the Collection of Biodiversity Baseline Data. Prepared for the Multilateral Financing Institutions Biodiversity Working Group & Cross-Sector Biodiversity Initiative. Read pp. 5-62.

Network for Business Sustainability, 2011. *Metrics for Valuing Business Sustainability*. 11pp.

Slaper, Timothy F., 2015. *Triple Bottom Line: What Is It and How Does It Work?* 8pp.

RedLAC, 2008. *Measuring the Impact of Environmental Funds on Biodiversity*. Pp. 13-27.

National Community Investment Fund, *Collaborating to Harmonize Standardized Metrics for Impact Investors*. Read pp. 1-9.

Team Meeting 11 (Dec 2) Putting It All Together – Creating an Integrated Sustainable Finance Strategy for Local and Regional Conservation

Initiatives - We will look at some case studies of integrated sustainable finance strategies, and use this class time to review the work you have completed, and to rehearse your final presentation. You will need to arrive with a draft of your PowerPoint presentation, and a plan for how you will deliver the presentation and field questions and responses.

Final Presentation (Dec 9, 5pm)

Dec 13, 2019 Submit final report