

Supporting Information

Methods

DATABASE INFORMATION

Interview Protocol

BASIC INFORMATION

Project name
Those interviewed
Organization of interviewees
Date of interview
Main project contact
Project location
Project ecoregion
Start date
Expected project length
Project category (ES versus BD)
Interview type (in person versus by phone)

RATIONALE

What are the major threats to the project area?
What are the project goals?
What Ecosystem services are targeted or have been incorporated?
What are the species and habitat targets/goals?
Socioeconomic goals?

PROJECT INFRASTRUCTURE

Who are the major project partners (federal, state, local, education, non-profit, corporate)?
What are the major goals for each partner?

FUNDING DETAILS

Who are the major funders and what funds has the project secured?

Funder type	Number	Amount	Form
Corporate			
Federal			
State			
Local			
Education			
Non Profit			

Amount Categories

- 1) \$1000-\$10000
- 2) \$10,000-\$100,000
- 3) \$100,000 – \$ 1 million
- 4) \$ 1million – 10 million
- 5) 10 million – 100 million
- 6) 100 million – 1 billion
- 7) 1 billion – 10 billion

What are the funders motivations?

LANDSCAPE DETAILS

What is the project implementation scale (local, regional, global)?

Impact scale?

Who are the main landowners in the area?

Pre project?

Target?

What is the land cover of the area?

Original?

Pre-project?

Target?

What is the land use?

Pre project?

Target?

ENABLING TOOLS

What are the major finance tools in use?

If easements are used, what type of easement?

What are the major institutional/legal tools in use?

Does the project try to engage the community?

If yes, using what mechanisms?

How do they communicate project goals?

ON-THE-GROUND IMPLEMENTATION

In order to achieve project goals/targets what are the major conservation actions/on the ground activities occurring in the project area?

Who is implementing these activities?

What activities are or are not allowed by humans in the project area?

In terms of ecosystem services, who are the major recipients of the services?

Who pays for the service?

Who receives payment for the service?

VALUATION/ANALYSIS

Was an economic valuation of services done for the project? If yes, when (pre, post, during)?

How was the valuation used?

What type of valuation was done?

What services were valued?

Was a policy analysis done for the project? In other words, did the project assess what was needed politically/legally in order to be able to institute project actions?

If yes, when?

How was the policy analysis used?

Was an ecological analysis done? Was original vegetation surveyed? Was there some assessment of current ecological/biological conditions?

COMPLIANCE MONITORING

Is compliance monitoring done? For What?

Biodiversity?

Ecosystem services?

Socioeconomic?

In each case, what is being monitored?

How is it being monitored?

In how many locations is the monitoring occurring?

With what frequency?

When did this start?

Who (what organization) is collecting data?

Who analyzes data?

Samples?

Data analysis?

What is the end date for monitoring?

Who is paying?

For sample collection?

For sample analysis?

For data analysis?

PERFORMANCE MONITORING

Is performance monitoring done? For What?

Biodiversity?

Ecosystem services?

Socioeconomic?

In each case, what is being monitored?

How is it being monitored?

In how many locations is the monitoring occurring?

With what frequency?

When did this start?

Who (what organization) is collecting data?

Who analyzes data?

Samples?

Data analysis?

What is the end date for monitoring?

Who is paying?

For sample collection?

For sample analysis?

For data analysis?

CHALLENGES/LESSONS

What institutional challenges were faced in setting up the project?

Were there challenges communicating the project's purpose and goals to the public/community?

What were the key challenges in creating the project? The project process?

What other data is/was needed for this project?

Are/were there any economic challenges? Funding? Valuation?

What are/were the political challenges?

Are/were there any scientific shortcomings in the project? Science that is needed to make the project better?

Lessons Learned?

Checkbox Definitions

BROAD THREATS

Habitat conversion – any threat that risks altering current/original land cover such as agricultural expansion, logging, fire, fragmentation, development, roads, dams, shipping lanes, watershed alteration

Over-harvest – the over extraction of wild populations such as fishing, hunting

Pollution – any form of pollution from exotic and/or excess materials not part of the natural system. This can include household waste, urban waste, industrial and military effluents, agricultural and forestry effluents, and garbage and solid waste

Climate Change

Invasive Species

Other

MAIN THREATS (IUCN)

– **Classified by grouping with Broad Threats (above)**

Habitat conversion

- 1) Housing and Urban → any kind of residential or city development can include non-housing development but integrated with is such as schools, churches, etc
- 2) Commercial and industrial → development that is not homes or home-integrated such as industry or stand alone shopping centers
- 3) Tourism and Recreation → ski, golf, tourism sites that have a substantial impact on the surrounding habitat
- 4) Non-timber crops → commodity, specialty, subsistence farming – food, fodder, fuel crops
- 5) Ranching – domestic, terrestrial animals
- 6) Wood and pulp plantations – forest plantations, forests managed for production; outside of natural forests
- 7) Marine and freshwater aquaculture
- 8) Energy production and mining → includes oil and gas exploration, mining, and renewable energy exploration
- 9) Recreational activities (off-road vehicles, motorboats, motorcycles, etc) → traveling in nature outside established transportation corridors
- 10) War, civil unrest, and military → actions by military without a permanent footprint
- 11) Fire and Fire suppression → either the suppression or enhancement of fire outside of its natural range of variation
- 12) Dam and water management → changing water flow patterns deliberately through dams or dikes or other means
- 13) Fragmentation; degradation - Any stress that affects the community or ecosystem and causes conversion
- 14) Species stresses - Stresses that affect species such as causing mortality or disturbances (direct or indirect)
- 15) Roads and service corridors → disturbance to ecosystems from building and use of roads that lead to mortality.

- 16) Shipping lanes → transportation in freshwater and ocean waterways that affect ecosystems (dredging, canals, shipping lanes, crashing into animals)
- 17) Ecosystem degradation/fragmentation → Any stress to that affects the community or ecosystem and causes conversion

Over-harvest

- 18) Hunting
- 19) NTFPs – non-timber forest product collection which are then often marketed or used for spiritual or cultural or economic purposes
- 20) Logging – primary forest clearing for timber, fuel, or fiber
- 21) Fishing – for any purpose – commercial, recreational, subsistence, cultural

Invasive species

- 22) Invasive species - threats from non-native plants or animal species outcompeting natives – harmful effects on biodiversity

Pollution

- 23) Point pollution
- 24) Non-point pollution

Climate Change

- 25) Climate change - habitat shifting and alteration, droughts, temperature extremes, storms and flooding

GOAL PARTNER/FUNDER

- 1) Political Will – commanded from above – change in policy or other that requires the institution to participate in the project
- 2) Efficiency of operation – investing in the project because the resource that is provided will help the operation of the institution (e.g. need clean water in order for a hydropower industry to function)
- 3) Conservation – believe in species or habitat or community conservation
- 4) Market access – investing to be able to have access to a special/niche market
- 5) Communication – using the project to draw in stakeholders or to pass along information
- 6) Employment – investing in the project to create jobs for people
- 7) Education – usually a University or research institution that is part of the project doing research
- 8) Mitigation – participating to mitigate against legislation or regulation either current or potential.
- 9) Development – human welfare issues – primary concern is for human welfare and development related goals
- 10) Recreation – interested in enhancing recreation opportunities
- 11) Test methodology – new idea that want to make broader scale so testing a method or an approach in the field
- 12) Other

SCALE

Implementation scale – Level at which project actions occur

- 1) Local – one community
- 2) Regional – more than one community
- 3) Global – everyone

Impact scale – Level at which projects actions make an affect

- 1) Local – one community
- 2) Regional – more than one community
- 3) Global - everyone

LANDOWNER

- 1) Federal – any type of government land, i.e. land title is held by the national government
- 2) State – owned by state jurisdiction
- 3) Local – county, municipal, city government owned
- 4) Corporate – private landowner but company level
- 5) Private nonprofit – NGO owned or other non profit
- 6) Native American – highly US based – tribal land
- 7) Individual private – different from a corporation in that it is a single person or single family ownership
- 8) Indigenous – non-Native American but people who have cultural and historical attachments to land
- 9) Other – could include communal lands

LAND COVER

Grassland – Prairie, savanna, herbaceous

- 1) Native grassland – native species, original land cover
- 2) Non-native grassland – includes the same as above but not natives
- 3) Mixed grassland – mix of native and non-native species; same as above

Forest – Riparian, treed land

- 4) Native forest – native trees – hardwoods, firs, pines, any and all tree species
- 5) Non-native forest – forest area but all non-native species
- 6) Mixed forest – mix of natives and non-natives

Wetlands

- 7) Wetland – marsh, lagoon, wetlands

Scrub/Shrub – tundra, glade, bush

- 8) Native scrub/shrub – native bushes and shrubby ecosystem
- 9) Non-native scrub/shrub – same only not native
- 10) Mixed scrub/shrub – mix of native and non-native species

Intertidal

- 11) Intertidal – mangroves, sea grasses

Subtidal

- 12) Subtidal – reefs, kelp beds

Converted

- 13) Converted – agriculture, ranching, development, any change due to human use
- 14) Other

LAND USE

- 1) Primary forest clearing - industrial timber harvest or unsustainable timber harvest
- 2) Selective logging – smaller scale logging of selected logs but not sustainable
- 3) Sustainable timber harvest – selective, sustainable logging practices
- 4) Sustainable agroforestry – crops interspersed with patches of trees. Crops are harvested sustainably
- 5) Unsustainable agroforestry – similar matrix landscape but crops unsustainably harvested
- 6) Commodity crops – any crop that could possibly qualify for commodity support payments under the US USDA farm bill commodity programs. Large-scale commercial crops
- 7) Specialty crops – non-commodity crops – those that don't qualify for farm bill subsidies but still are large-scale commercial harvesting
- 8) Subsistence farming – crop growing for the purposes of feeding family rather than harvesting for commercial value
- 9) Sustainable agriculture – any type of agriculture/cropping system that is done sustainably using sustainable technology or practices
- 10) Other crops – any other cropping system not included above including plantation forestry
- 11) Nature Reserve – limited use system that is managed for conservation
- 12) Aquaculture – fish farming
- 13) Unsustainable Grazing - ranching of the land, probably in grasses to support livestock but at unsustainable levels and with unsustainable practices (using herbicides, pesticides, over feeding, etc)
- 14) Sustainable grazing – ranching for livestock in a sustainable fashion (e.g. organic or natural beef)
- 15) Industrial development – development of industry and factories
- 16) Commercial development – development for shopping centers and shops and non-housing associated infrastructure
- 17) Residential development – home development
- 18) Recreational open space – areas for recreation – can have use such as fishing or hunting or can be limited access but it is zoned or managed for recreation rather than building infrastructure
- 19) Abandoned – Land formerly used or could be used for a variety of things but has been vacated and left unattended prior to project
- 20) Other use – any other use not included above

CONSERVATION FINANCE TOOLS (Note italics are broad categories of tools)

Rights transfer

- 1) Fee acquisition – purchasing of property
- 2) Easement – purchasing of certain rights

Markets

- 3) Niche market – selling of a value added product – fitting into a niche market such as organic, NTFPs, shade coffee, certified products
- 4) Banking markets – revolving fund markets where money is received through a conservation action such as sustainable timber harvest and reinvested in further conservation
- 5) Wetland mitigation markets – wetland mitigation banks
- 6) Habitat banking markets – same as wetlands but for other types of habitats
- 7) Carbon market – sale or credits of carbon offsets
- 8) Water quality market – sale of clean water
- 9) TDR – tradable development rights

Taxes – applies to public goods – a person may or may not benefit from the product of the tax

- 10) Redistribution of taxes
- 11) New taxes (e.g. carbon tax)

Fees – Private consumption – always enjoy the benefit

- 12) User fee/access fee – common in ecotourism where there is a fee to use

Subsidy

- 13) New subsidy – money actually coming from a new pool of money
- 14) Redistribution of subsidy – the money already existed for a particular outcome/goal
- 15) Donation – The landowner or user agrees to donate the land to conservation

Other

INSTITUTIONAL TOOLS – Note: with institutional tools an actual regulation or policy is being created to cause some kind of change

- 1) New tax → the project is working to create or has led to the creation of a new tax
- 2) Redistribute tax → a tax already exists but the collection process has been altered
- 3) New subsidy → project creates a new subsidy
- 4) Redistribute subsidy → subsidy already exists but the project aims to have it distributed differently – new stakeholders, etc. and changes policy accordingly
- 5) New fee – fee is created
- 6) Redistribute fee → a fee exists for use or access for example but the fee is now being put towards new and different conservation actions
- 7) Other policy change
- 8) Cap – maximum amount placed on something
- 9) Ownership rights – change in ownership of a particular good within the landscape – for example change in ownership of water rights or property or timber (often happens with easements) – could be individual, community, or wildlife
- 10) Development rights – change in the rights to develop; deals with change in zoning
- 11) Administration rights – who is in charge of administering or managing the land area changes

SOCIAL TOOLS

- 1) Education and outreach – programs designed to educate and reach out to the community often through those in grade school
- 2) Community forums – open forums for all members of a community to inform them or seek participation for projects
- 3) Volunteers – Community actually engages in the project process
- 4) Stakeholder engagement – refers to a single person that the project tries to engage in a long term manner
- 5) Training – part of the way they engage the community is to train them to manage and protect the area or enhance the project process
- 6) Workshops – more involved forums that have a product
- 7) Meetings – similar to forums but restricts members and invitees and is just information – no products
- 8) Committee formation – getting a group of stakeholders together in a larger, long term engagement
- 9) Publications – spreading of word through publications such as brochures, handouts, papers, etc

CONSERVATION ACTIVITIES (*Italics are, again, the broader definition categories*)

Best Management Practices

- 1) BMP forestry – certification, selective timber harvest, etc
- 2) BMP agriculture – contour farming, no-till, conservation till, buffers, integrated pest management, organic, etc
- 3) BMP ranching – rotational grazing
- 4) BMP fishery/aquaculture – sustainable harvest
- 5) Fencing (this can also be Restoration or Preservation) – it is a BMP if involved with keeping out cattle but restoration if it's to allow an area to regrow and preservation if it's keeping an area untouched

Research

- 6) Biodiversity assessment – this is a rapid assessment – this assesses species and habitat quality – could be looking at richness and abundance surveys
- 7) Ecosystem service assessment – same type of assessment only for the provision of services
- 8) Mapping – a more specific kind of assessment that yields a “map” of service flows or species in the area
- 9) Research – long term assessment - the primary activity on the landscape, or one of them, is conducting research into what is happening in the area, the conditions, etc
- 10) Pilot/demonstration - the project is using this site and a particular methodology as a mechanism for demonstrating the potential of scaling this project out....

Restoration

- 11) Outplantings – active restoration due to the loss of seed bank and this involves the planting of saplings or seedlings to restore the area – can be trees or other
- 12) Reseeding – active restoration due to loss of seed bank – replanting of seeds – can be trees or other
- 13) Regeneration – passive regrowth of native vegetation – trees or otherwise
- 14) Infrastructure – (can also be preservation) using some kind of built mechanism be it a fence or a dyke or a damn or whatever as an action - restoration if it's to restore an area and preservation if it's to keep it pristine or to secure it.
- 15) Removing invasive species – active monitoring and control of invasive species
- 16) Restoring channel flow – this is the removal or decommissioning or management (e.g. restoring in stream flows to particular levels) of water constricting infrastructure such as a dam, dykes, and levees. This is any action that is working to undo past constrictions of a waterway.
- 17) Flood plain restoration – this is a more board level restoration process of actually trying to restore a flood plain. This could be done naturally by simply no longer pumping water out or may involve decommissioning infrastructure. This is more than just restoring channel flow because it actually means restoring spillover flow.
- 18) Creating seed source (nursery) – using the land to have a source of native seeds for regeneration or for other restoration projects
- 19) Restoring riparian zone – this is more than just building riparian buffers which would be a BMP but actual restoration of the zone for biodiversity and other benefits.
- 20) Midstory removal – particularly important in forest restoration – way to diminish fireload and restore native stands.

Preservation

- 21) Park Guards
- 22) Fire management – (this can be restoration too) - this is Restoration when active fire management has to be done because the landscapes has been so altered that natural fire regimes are no longer helpful and maybe even be detrimental or may no longer occur frequently enough. It's preservation if the natural fire regime is being maintained.
- 23) Legal protection – This is where the status quo is being maintained or enhanced, but there is protection of something occurring on the ground – this may happen through a number of different mechanisms

Other

- 24) Tourism infrastructure – tourist areas and booths and bathrooms
- 25) Trail building

ALLOWABLE USE

- 1) No take recreation – hiking, birding, horseback riding, etc.
- 2) Sustainable take recreation – hunting
- 3) Ranching
- 4) Managed forestry – some logging but selective

- 5) Subsurface extractions – oil and mineral and sub surface products can be extracted
- 6) Natural product extraction – non-timber forest products, natural medicines, above ground products
- 7) Agriculture
- 8) Other
- 9) None

PROJECT IMPLEMENTATION – who is implementing the project – who is actually running and organizing the activities

Managing organization – TNC or WWF

Partner organization – Other partner

TARGETED ECOSYSTEM SERVICE RECIPIENTS

- 1) Urban domestic – city domestic – living in towns, cities, and non-rural environments
- 2) Rural domestic – farmers, ranchers – non highly developed area as a whole
- 3) Hydropower
- 4) Agriculture – irrigation and agricultural production
- 5) Paper mill
- 6) Bottling plant
- 7) All water users – recreation, agriculture, ranching
- 8) Recreation users – only using area for recreation – hiking, swimming, canoeing
- 9) All
- 10) Other
- 11) Floodplain occupants – particularly those living in riparian area
- 12) None

WHO PAYS/WHO RECEIVES PAYMENT (*Italics are, again, the broader definition categories*)

Private Landowner → individual or family owning a portion of land; can also be someone who has occupied the land and used it for generations even if land title is not explicit (often true in South America)

- 1) Forester – landowner doing forestry on his land, any and all kinds of timber harvesting whether small scale or large scale
- 2) Agriculture – any agricultural landowners growing any kinds of crops
- 3) Rancher – anyone with pasture creating activities grazing any kind of ungulate
- 4) Private landowners/users – the catch all category for landowners/users that do not fit within the above but who are still living on the land individually or as a family unit
- 5) Urban domestic – only urban residents pay or get payment for the service
- 6) Rural domestic
- 7) Recreation users – only those using an area recreationally pay

Industrial/Corporate → also private but owned by a company

- 8) Hydropower – any industry creating hydroelectric power at any scale

- 9) Bottling plant
- 10) Paper Mill
- 11) Energy company – any gas, electric, oil company including car gas companies and others
- 12) Other corporate – catch all for those specific industries not listed previously.

Tax Payer/Government (really depends on if it's giving or receiving the payment)

13) Federal tax payer – often times this will involve a federal tax or subsidy or regulation that is paying or receiving taxes based on conservation – it goes to everyone in the nation or is charged to everyone in the nation

14) State tax payers – this is the same as above only limited to a particular state within the US or abroad

15) Municipality – same idea as state and federal only here it's dealing with local taxes and local fees and regulations

16) International tax payers

Community/Committee → A particular committee or group of stakeholders either receives or gives money

18) Committee of stakeholders – special situations where it is actually a group of stakeholders that comes together to manage funds.

Non-profit

19) Implementing NGO – NGO that is managing the project. Is not always TNC or WWF but rather whoever is managing the on the ground conservation activities

20) Other NGO

USE OF ECONOMIC VALUATION

1) Set fees – Used to actually define how much the ecosystem service is worth

2) Motivate legislation – Using the valuation to motivate the legislation

3) Change industry practice – indicate to industry the advantage of providing services

4) Change land user practice – indicate to landowners the advantage of changing different land use practices

5) Redirect money to conservation – show how much money can be saved or how much more money can be gained through investing in conservation

6) Leverage partnerships – get landowner and other organization partnerships

USE OF POLICY ANALYSIS

1) Motivate legislation – trying to change or alter or design policy

2) Stakeholder buy-in – get others to engage in the project

3) ID policy to target – figure out what needs to happen at policy level

4) Reveal need for policy change – Demonstrate that a policy change has to happen

Fill-in box Definitions

Main project contact – person who would have information about the project – best to contact for details

Start date – main date for implementation – actually starting to design the project and look into funding sources

Project goals – goals and the reasons why TNC participates in the project – the importance of the project in the broad sense

ES target comments – specifics about the types of services – e.g. for water quality if it's water for a particular purpose (irrigation, consumption, etc). Also, any other details about the types of services included.

Socioeconomic targets – anything to do with human welfare and equity and maintaining quality of life

Landowner transition comments – details of landowner transitions such as issues surrounding establishing land title or use of easements rather than fee transfer. Also multiple transitions of one type can occur and this box would include details about all the transactions.

Land cover transition comments – details about the type of land cover. Check box sets are very general categories so this box includes details more specific information on vegetation type (e.g. prairie versus savanna versus hardwoods, etc)

Land use transition comments – Types of crops or ranching that is done or what types of products from aquaculture or types of recreation. If the land use change is particular to a riparian region or any other specific details will be in this box.

Conservation finance tools comment – details about finance tool use such as who is buying the easement or fee acquisition or how TNC or other NGO might be brokering a deal or leveraging a partnership using a particular tool. If “Habitat market” is selected this is where to define that more clearly.

Role of Institutional tools – details about the institutional tool such as type of ownership rights being exchanged or how and why development rights are being sold. Give details of “other policy changes” – basically capture what is happening in words.

Role of social tools – Details about whatever is checked in the box such as level of education being influenced or who is being asked to be on a particular committee or what the workshop was trying to target. Or if there is something else going on with how the project partners are reaching out to the community that is not captured (such as via the radio) the details will be in this box. This basically includes all the details about how communities are being involved in the process: who and how.

Conservation activities comments – more detailed information about the activities taking place such as the exact number of outplantings or what best management practices are occurring or who is engaging in what activities, etc.

Monitoring – In these sections, the main boxes are fairly detailed so the comment box is to capture the general picture of assessment if specifics either are not occurring or are not readily available.

Supporting Results

Figure 5. Use of finance and institutional tools by project type within the US and outside the US. Within the US, 100% of both ES and BD projects use a finance tool, but BD projects use a more narrow range of such tools: 73% of BD projects use either an easement and/or a fee acquisition and 74% of those projects are in the US. In the US, ES projects not only use a broader range of finance tools, but significantly more projects ($\chi^2_1=5.14$; $p=.023$) use some kind of institutional tool: over 70% of US ES projects alter an institutional policy (such as a tax, subsidy, or administration right) while less than 30% of US BD projects evoke a policy change. Outside of the US, BD projects are more likely to initiate an institutional change but significantly less likely to use finance tools. * indicates $p<.05$ and ** $p<.01$

Not only do BD projects transfer land out of private ownership than ES projects, but also, about 50% of all BD projects involve land ownership transfers to a private non-profit while only about 35% of ES projects undergo this type of landowner transition. In sum, 62% of BD projects involved a landowner transition while only 38% of ES projects did ($\chi^2_1=3.20$; $p=.074$).