

Guidelines for Designing and Selecting Conservation Strategies¹

Developing strategies involves deciding what outcomes need to be achieved, and where in the system to intervene and what specific actions to take at that point to achieve the desired outcomes. High leverage strategies are those that achieve the most impact for the least amount of investment. Every project is challenged to develop specific strategies including both objectives and actions and to describe why these specific strategies were selected.

A project typically has a range of conservation actions and tools it can use to achieve its goals, each having different effectiveness in different situations. Because resources available to invest in conservation action are limited, project teams need to identify and implement actions that will most efficiently achieve desired outcomes given the circumstances they are working within. However, there will always be some uncertainty about the potential effectiveness of any action in a given situation. Taking action in the face of such uncertainty requires a clear statement of the intended outcome for each action in which the project team invests, and an explicit mechanism for measuring the effectiveness of actions at achieving their intended outcomes. In this way, project teams can determine if the return on investment is acceptable, and adapt the project as necessary—identify effective actions for continued investment, ineffective actions for divestment, and possible new actions in which to start investing. Clearly linking actions to outcomes enables the effectiveness of conservation action to be measured, assumptions to be tested, and the project to adapt and learn.

If successfully implemented, the project's conservation strategies should collectively result in accomplishing the project goal. Defining the project goal is not formally part of developing conservation strategy (Box 1), but the goal provides a foundation to ensure strategies are of sufficient scope and scale to achieve the goal.

BOX 1: Project Goal

A goal is a general summary of the desired state that a project is working to achieve. In basic conservation projects, developing a goal is a relatively simple exercise since the goal will almost always be stated in terms of conserving the biodiversity of the project area. In more complex integrated conservation and development projects, however, developing a goal requires negotiation among the project partners, particularly if some members of the project team are ultimately interested in improving human welfare and not in biodiversity conservation per se.

A good goal meets the following criteria:

- *Visionary* – Inspirational in outlining the desired state of biodiversity in the conservation area.
- *Relatively General* – Broadly defined to encompass the sum of all project activities.
- *Brief* – Simple and succinct so that all project participants can remember it.
- *Measurable* – Defined in terms of the sum of the desired key attributes of all focal targets.

¹ These guidelines represent an update to Chapter 9 (Strategies) in *The Five-S Framework for Site Conservation: A Practitioner's Handbook for Site Conservation Planning and Measuring Conservation Success, Volume I, Second Edition, June 2000*. They are designed to be used with the Excel-based Conservation Project Management Workbook, Version 4 (release expected in Summer 2003).

Components of Conservation Strategy

A *conservation strategy* is a broad course of *action* intended to achieve a specific *objective* (i.e. outcome) that abates a threat or enhances the viability of a conservation target.

There are three fundamental components to conservation strategies: *Objectives*, *Strategic Actions*, and *Action Steps* (see Box 2 for examples).

Objectives

An objective is a specific statement detailing the desired accomplishment or outcome of a particular set of strategic actions within a project. Objectives can be stated in terms of reducing the status of a critical threat, enhancing or maintaining the status of a key ecological attribute, or both. A typical project will have multiple objectives. Ideally, realization of all the project's objectives should lead to fulfillment of the project goal.

It is important to set good objectives—they are the foundation for selecting strategic actions in which to invest and for determining the effectiveness of those actions. A good objective meets the criteria of being:

- *Impact Oriented* – represents changes in key ecological attributes or critical threat factors that are necessary to achieve the project goal.
- *Measurable* – definable in relation to some standard scale (e.g., numeric, percentage, fractions, or all/nothing states).
- *Time-Limited* – achievable within a specified period of time.
- *Specific* – clearly defined so that all people involved in the project have the same understanding of what the terms mean.
- *Practical* – achievable and appropriate within the context of the project.
- *Credible* – representing best scientific judgement as to what is necessary for conservation success.

Strategic Actions

A strategic action is a broad or general course of action undertaken by a project team to reach one or more of the project's objectives. A good strategic action meets the criteria of being:

- *Linked* – directly related to a specific objective(s).
- *Strategic* – maximizes leverage and efficiency.
- *Focused* – outlines specific steps for implementing the action.
- *Feasible* – accomplishable in light of the project's resources and constraints.
- *Appropriate* – acceptable to and fitting within project-specific cultural, social, and ecological norms.

Action Steps

These are the principal steps or activities necessary for implementing the strategic actions.

BOX 2: Examples of Objectives, Strategic Actions, and Action Steps:

Focused on threat abatement

Objective: By 2010, reduce the percent cover of invasive species A to less than 5%, throughout the mixed grassland habitat in Conservation Area X.

Strategic Action: Implement a volunteer-based program to manually control invasive species A.

Action Step: Organize a volunteer training event to recruit and instruct volunteers on invasive species removal techniques.

Focused on enhancing target viability

Objective: By 2010, increase the population size of juvenile chinook salmon to more than 1,000 individuals, within in the lower floodplain habitat of Conservation Area Y.

Strategic Action: Improve juvenile salmon recruitment by changing watershed practices that cause a high degree of embedded sediments from excessive erosion.

Action Step: Review all public agency management plans to evaluate the likely contribution of logging, road building, and grazing plans on excessive erosion within the watershed.

Focused on threat abatement and enhancing target viability

Objective: By 2015, restore the fire regime to achieve a fire return interval of 5-10 years over at least 5,000 acres of grassland habitat at Conservation Area Z (in this case, fire suppression efforts were identified as a key threat limiting the key ecological process of periodic burning).

Strategic Action: Establish a partnership with the Bureau of Land Management fire crew to conduct annual prescribed burns.

Action Step: Establish a Memorandum of Understanding with the local Bureau of Land Management office to enable partnership prescribed burns to occur.

Designing and Prioritizing Conservation Strategies

The process of developing effective conservation strategies involves six main steps:

1. Review the project goal;
2. Define objectives for abating the critical threats and/or for restoring the viability of focal conservation targets (i.e., threat objectives and viability objectives);
3. Deeply probe the contextual situation;
4. Brainstorm potential actions that might accomplish each objective, or multiple objectives;
5. Select priority actions based on benefits, feasibility and costs.
6. Determine key next steps for taking action

Review the Project Goal

The project goal defines overall project success, and provides the touchstone to ensure that objectives and actions are of sufficient scope and scale to achieve the goal.

Define Measurable Objectives

Generally stated, conservation project objectives are to abate threats and to restore or maintain the viability of focal conservation targets. But there may not be the need, nor may a project

have the resources, to take action on all threats and focal targets. To provide focus for the strategic actions, a project team must define specific, measurable objectives for critical threats and significantly degraded key ecological attributes—outcomes that must be accomplished in order to achieve the project goal.

Review the list of critical threats and degraded key ecological attributes, as well as the underlying causal factors for each as identified in the situation assessment. Critical threats are those sources of stress with an Overall Threat Rank of Very High or High. Degraded key ecological attributes are those that have a current rating of Fair or Poor. Describe the desired outcome that you believe will reduce the Overall Threat Rank of the associated critical threat to Medium or increase the Current Status of the associated key attribute to Good. Make sure the description of the desired outcome meets the criteria for a good objective.

Objectives provide focus for conservation actions. Generally, an objective should be set for each of the critical threats, because threat abatement typically is accomplished through direct conservation action. On the other hand, some degraded key ecological attributes may be restored through the abatement of critical threats and not need direct action. Thus, when setting objectives with respect to key ecological attributes, focus on those attributes that will need direct conservation action (e.g., ecological restoration).

Deeply Probe the Situation

Critical threats and degraded key ecological attributes typically result from incompatible economic activities and management of natural resources. Understanding the cultural, political, and economic contexts that represent both the driving forces behind the critical threats and degraded viability as well as the opportunities for abating the threats and restoring viability is essential for developing effective actions. Thus, before brainstorming and selecting actions, project teams must first probe deeply into the critical threats, their potential underlying causes, and the linkages to focal conservation targets and other threats.

Such probing should build upon the existing situation assessment, and should focus on those critical threats and key ecological attributes for which objectives have been set. Some project teams use conceptual models (e.g., situation diagrams) to discover and represent the linkages. Others use probing questions looking at potential causes, the scale at which the threats and systems operate, the key constituencies that are harmed by the threat or might benefit from its abatement, etc. Using probing questions to discover underlying causes in combination with conceptual models to visually represent threat factors and their linkages is a particularly effective approach.

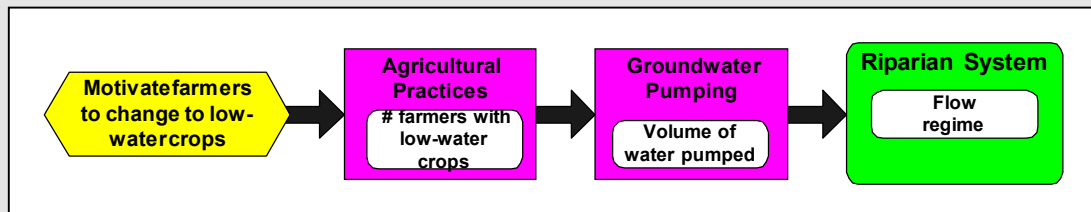
Brainstorm Potential Actions

Based on your focused probing of the situation, consider the array of strategic actions that collectively might accomplish the objectives. Some strategic actions will apply to a single objective; others will be relevant to multiple objectives. Your understanding of each critical threat and degraded key attribute and their underlying causes should help you identify the appropriate strategic actions and points of intervention to achieve the objectives. The most appropriate point of intervention may be at the key ecological attribute (e.g. restoration), at the critical threat, or at a causal factor more distal in the chain of causation (Box 3).

BOX 3: Setting Objectives and Selecting Strategic Actions

An objective should focus on either a critical threat or a degraded key ecological attribute of a focal conservation target. The point of intervention of strategic actions to accomplish the objective may be directly at the critical threat or at other factors further back in the causal chain.

For example, consider a riparian system target that is stressed by low river flow in mid-summer; low flow results in elevated water temperature and increased fish mortality. The low river flow is directly caused by groundwater pumping, which in turn is caused by incompatible agricultural practices. The project team has set a threat abatement objective focused on the critical threat of groundwater pumping: “By 2008, reduce the average monthly volume of water pumped from the floodplain to less than xxx gallons in Conservation Area Y”. The strategic action to accomplish the objective is to convince farmers to switch to crops that require less water through incentives or legislative mandates. In this case, the point of intervention is at the causal factor (agricultural practices), not directly at the critical threat (groundwater pumping). The diagram shows the presumed linkages between the strategic action, causal factor, direct threat, and conservation target.



Select Priority Strategic Actions

The potential strategic actions identified through the brainstorming exercise should be evaluated to select those actions that, if implemented, will most effectively and efficiently accomplish the objectives. We recommend that potential strategic actions be evaluated and rated using three criteria: *Benefits*, *Feasibility*, and *Cost*.

Benefits

The benefits of a given strategic action derive from directly achieving threat and viability objectives (direct benefit) as well as from enabling or catalyzing the implementation of another strategic action (indirect benefit or leverage).

To assess the potential benefits of a strategic action, consider three factors:

- *Scope and Scale of Outcome*
The degree to which the proposed strategic action, if successfully implemented, is likely to secure the desired objective(s) at a scope and scale—degree of intensity and/or spatial scale—sufficient to reduce critical threat ranks to one or more focal conservation targets to a “Medium” rank and/or to increase a key ecological attribute to a “Good” rank for one or more focal conservation targets.

- *Duration of Outcome*
The degree to which the proposed strategic action, if successfully implemented, is likely to secure a long-lasting outcome. Strategic actions likely to achieve enduring, long-lasting outcomes are most desirable; those with short duration less desirable, all other things being equal.
- *Leverage*
The degree to which the proposed strategic action, if successfully implemented, will enable or catalyze the implementation of other strategic actions (and thus achieve other important objectives), either within the immediate conservation project, or elsewhere.

Feasibility

Overall feasibility of a strategic action is based on three factors:

- *Lead Individual & Institution*
The availability of a lead individual with sufficient time, proven talent, relevant experience, and good institutional support to implement the strategic action.
- *Ability to Motivate Key Constituencies*
The degree to which key constituencies (e.g., landowners, public officials, interest groups) whose involvement is necessary to implementing the strategic action and their motives are understood and the action appeals.
- *Ease of Implementation*
Strategic actions that are less complex, have been successfully implemented previously, fit within the core competencies of the lead institution, and for which funding is accessible have a higher likelihood of success than other actions.

Cost

Strategic action costs should be estimated for the time horizon of the strategy, but no longer than 10 years. Cost estimates should focus on the use of discretionary or unrestricted dollars (or other appropriate currency). Overall cost of a strategic action is based on four factors:

- *One Time Cost*
The amount of any direct, one-time costs.
- *Annual Costs*
Other direct costs, excluding staff time, that will be accrued annually.
- *Staff Time*
The average number of staff (FTE) required to implement the strategic action.
- *Number of Years*
The number of years the strategic action will require staff time and annual costs for implementation.

The overall rank for each strategic action, based upon Benefits, Feasibility, and Cost, should serve as a guide for selecting the strategic actions to implement. The scoring system is designed to reward strategic actions that produce very high benefits for reasonable cost. It also identifies strategic actions that are “low-hanging fruit”, i.e., lower cost actions with medium benefits that are very feasible to implement.

These rankings are not intended to provide a “perfect” evaluation, but rather to provide you with a relative assessment of an array of potential strategic actions. Your project team will still need to use its good judgement and experience to decide on which potential strategic actions to implement.

The attached Conservation Strategy Development Tool provides a one-page crib sheet for identifying and prioritizing conservation strategies. Ranking guidelines (i.e., what constitutes a rank of Very High, High, etc.) for each of the strategic action ranking factors is also attached.

Determine Key Action Steps

For each strategic action that is selected for implementation, list the key steps necessary for its implementation. This should be limited to principal activities, not a detailed listing of all tasks. Sometimes only the first step will be known.

BOX 4: Fostering a Planning Environment Conducive to Developing Strategies

Developing effective conservation strategies typically requires a more creative approach than the more analytical process of assessing conservation targets and threats. Thus, it is important to create an environment that fosters creativity, innovation, and “out of the box” thinking. While there is no exact recipe for creativity, bringing together people with the right set of skills and competencies into a nurturing environment should facilitate the process. Here are some key ingredients to consider:

Skills, Competencies, and Personalities

- Knowledge of project area:
 - Ecology and Conservation Targets
 - Socio-economics
 - Politics
 - Culture
- Creative thinking
- Analytical thinking
- Conceptual thinking (to bring the process/outputs into comprehensible and unified form)
- Facilitation (to keep the process on track and moving forward)
- Subject maven (to bring knowledge from outside the specific arena, e.g., literature)
- External perspective
- Influence and respect (internal to TNC as well as external)
- Responsibility for implementation

Creating the Right Environment

- Importance of place (e.g., inspiring location, comfortable meeting room)
- Good set up (clear expectations and compelling agenda for meeting/process)
 - Build in down time – this is when innovative thinking and synthesis often occurs
 - Field trips to see targets, threats, situation
- Right mix of skills, competencies, and personalities (see above)
- Provocation (depending on culture)
- Iterations – a single planning meeting may not be sufficient to design good strategies; often, inspiration and creativity are the product of cumulative and increasingly more informed assessments of the conservation situation.

Conservation Strategy Development Tool

<p>What are the critical threats? “Very High” or “High” rank</p>	<p>What targets require active restoration? Key attributes with “Fair” or “Poor” rank</p>
<p><i>Describe the objective that would abate the threat to a “Medium” rank</i></p>	<p><i>Describe the objective that would improve the attribute to a “Good” rank</i></p>

Probe -- the target, threat, context, scale, causes & possible solutions

Scope & Scale

- At what scale must the threat be addressed to abate it *e.g. acres, sq. miles, kilometers*
- Is a legal protection interest required: if so, what degree *e.g. fee, easement, lease, mgmt agreement*
- Is ecological management required: if so, what degree of application *e.g. removal of feral animals; fence key boundary; biannual fire*
- How many landowners are involved; how many of these are public or large landowners; what are their %s of the total ownership

Underlying Factors

- Is there an underlying factor(s) that serves as a critical “driver” of the threat? *e.g. need for cash or jobs, market demand, cultural values*
- Can the threat be directly abated at the project without addressing the driver?
- Can the driver feasibly be addressed, or does it represent too strong a force or hurdle? *If true, then reassess engagement*
- Are there other indirect factors that strongly influence the threat *e.g. risk, customary practices*

Key Decision Makers

- Who is the key decision maker(s) or decision-making body that will/could determine or influence the outcome
- What legal standing, authority or other influence do they have

Motivations

What motivates the land-owners, decision-maker or key constituencies

e.g. \$\$\$, ease, peers, fear, recognition, advancement

Key Constituencies

Are there key landowners or other constituencies who must be influenced to achieve success:

- *Who stands to lose* from the threat? Can they meaningfully influence the decision-maker?
- *Who stands to gain* from the threat? Can they be neutralized?

Brainstorm Potential Strategic Actions

- Direct protection or ecological management
- “Pressure point”: Influencing a key decision-maker or decision-making body
- Addressing a key underlying factor -- e.g. providing an alternative
- Consider a full array of options -- “big bets”, pilot trials, and no-regret moves

Evaluate Potential Strategic Actions -- Benefits, Feasibility & Costs

- Benefits: sufficiency; scale of outcome; duration of outcome; leverage
- Feasibility: lead individual & institution; ability to motivate key constituencies; ease
- Costs: staffing level & time; one-time direct; recurring direct

Describe the Strategic Actions & Action Steps to Achieve the Objective

Strategic Action Evaluation Criteria

Benefits

Threat Abatement – *For the Objective(s) which the Strategic Action will address, how many threats to Targets would be reduced one or more levels (e.g. from High to Medium) if the strategy is successfully implemented*

Very High	3 or more High or Very High threats reduced
High	2 High, or 1 Very High threat reduced
Medium	1 High, or 3 or more Medium threats reduced
Low	No threats would be reduced by the strategic action (or fewer than 3 Medium threats)

Viability Enhancement – *For the Objective(s) which the Strategic Action will address, how many key ecological attributes of Targets would be improved one or more levels (e.g. from Fair to Good) if the strategy is successfully implemented*

Very High	3 or more Fair or Poor key ecological attributes improved
High	2 Fair, or 1 Poor key ecological attribute improved
Medium	1 Fair, or 3 or more Good key ecological attributes improved
Low	No key ecological attributes improved (or fewer than 3 Good attributes)

Contribution – *If successfully implemented, to what degree does the Strategic Action contribute to the achievement of the Objective(s) -- looking at the threats and ecological attributes evaluated above*

Very High	The strategic action, <i>in itself</i> , achieves 1 or more Objectives
High	The strategic action <i>makes a substantial contribution</i> towards achieving 1 or more Objectives, but is not by itself sufficient
Medium	The strategic action <i>makes an important contribution</i> towards achieving 1 or more Objectives
Low	The strategic action <i>makes a relatively small contribution</i> towards achieving 1 or more Objectives

Duration of Outcome – *If successfully implemented, to what degree is the Strategic Action likely to secure a long-lasting outcome -- looking at the threats and ecological attributes evaluated above*

Very High	The strategic action is likely to achieve an <i>enduring, long-lasting</i> outcome (e.g. acquisition of fee interest in land; a well-established, ongoing management practice; a very secure public policy)
High	The strategic action is likely to achieve a <i>relatively long duration</i> outcome (e.g. partial interest in land; long-term renewal management agreement; solid but potential vulnerable public policy change)
Medium	The strategic action is likely to achieve a <i>moderate duration</i> outcome (e.g. 3 to 5 year management agreement; agency guidelines)
Low	The strategic action is likely to achieve a <i>short duration</i> outcome (e.g. handshake agreement; 1 year management plan; stop-gap policy)

Leverage – *If successfully implemented, to what degree does this Strategic Action produce leverage towards the accomplishment of other conservation strategies – either at the project area or elsewhere*

Very High	The strategic action <i>clearly and tangibly sets the stage</i> for successful implementation of another high-impact conservation strategy, or is <i>likely to be replicated at many other projects</i>
High	The strategic action <i>helps set the stage</i> for successful implementation of another high-impact conservation strategy, or is <i>likely to be replicated at other projects</i>
Medium	The strategic action <i>could help set the stage</i> for the successful implementation of another high-impact conservation strategy, or <i>could be replicated at other projects</i>
Low	The strategic action is important at the project area, but does not provide leverage for other conservation strategies

Overall Benefits Scoring: see scoring tables

Feasibility

Lead Individual / Institution – *The availability of a lead individual with sufficient time, proven talent, relevant experience, and good institutional support to implement the strategic action*

Very High	A lead individual (“champion”) with sufficient time, proven talent, substantial relevant experience and institutional support is reasonably available and committed to lead implementation of the strategy
High	An individual with sufficient time, <i>promising</i> talent, <i>some</i> relevant experience and institutional support is reasonably available and committed
Medium	An individual with sufficient time and promising talent is reasonably available, <i>but lacks</i> relevant experience or institutional support
Low	No lead individual currently available

Ability to Motivate Key Constituencies – *To what degree are the key constituencies (e.g. landowners, public officials, interest groups) whose involvement is critical to implementing the Strategic Action well understood, and the Strategic Action is likely to appeal to their key motives*

Very High	The key constituencies and their motives are <i>well understood</i> and the strategic action <i>is likely to</i> appeal to their key motives
High	The key constituencies are <i>well understood</i> and the strategic action <i>may</i> appeal to their key motives
Medium	The key constituencies are <i>somewhat understood</i> and the strategic action <i>may</i> appeal to their key motives
Low	The key constituencies <i>are not well</i> understood and it is uncertain whether the strategic action will appeal to their key motives

Ease of Implementation

Very High	Implementing the strategy is <i>very straightforward</i> ; this type of strategy has been done <i>often</i> before
High	Implementing the strategy is <i>relatively straightforward</i> , but not certain; this type of strategy has been done before
Medium	Implementing the strategy involves a <i>fair number of complexities</i> , hurdles and/or uncertainties; this type of strategy has <i>rarely</i> been done before
Low	Implementing the strategy involves <i>many complexities</i> , hurdles and/or uncertainties; this type of strategy has never been done before

Overall Feasibility Scoring: see scoring tables

Costs

Cost in Discretionary Dollars – Estimate the total cost of implementing the Strategic Action, including staff time, in unrestricted or discretionary dollars that are available to the project (over the time horizon of the strategy – e.g. 10 years)

Very High	Total cost is \$1,000,000 or more
High	Total cost is \$100,000 or more
Medium	Total cost is \$10,000 or more
Low	Total cost is less than \$10,000

Overall Cost Scoring: The score above. Note: the above benchmarks are based on U.S. dollars; need for users to be able to supply the benchmarks and currency.