Measuring the Effectiveness of State Wildlife Grants

FINAL REPORT

TENTH 10 ANNIVERSARY
INVESTING IN WILDLIFE SINCE 2000
STATE WILDLIFE GRANTS

April 2011

Measuring the Effectiveness of State Wildlife Grants: Final Report

A product of the Association of Fish & Wildlife Agencies' Teaming With Wildlife Committee
April 2011

ASSOCIATION of FISH & WILDLIFE AGENCIES

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EXECUTIVE SUMMARY

"Efficiency is doing things right; effectiveness is doing the right things." - Peter Drucker

THE NEED TO MEASURE AND REPORT EFFECTIVENESS OF CONSERVATION ACTIONS

The Association of Fish and Wildlife Agencies' (AFWA) Teaming With Wildlife (TWW) Committee formed the Effectiveness Measures Working Group (Working Group) in September 2009 to develop and test a framework and effectiveness measures for the State and Tribal Wildlife Grants Program (SWG). The Working Group included representatives from state fish and wildlife agencies and key conservation partners. This report recommends a framework that includes an agreed upon set of effectiveness measures that can be used by states to improve performance reporting. The process demonstrated that data on effectiveness measures can be collected in large part by taking advantage of existing datasets, integrated into the project management and reporting cycle currently used, and implemented without burdening states with new and arduous reporting requirements.

The SWG program is the nation's CORE program for preventing endangered species listings and is a principal source of funding to implement and revise congressionally-mandated State Wildlife Action Plans (SWAPs). The development of SWAPs in every state and territory was a historic milestone and the plans are helping state fish and wildlife agencies and their partners target and improve management for the full array of fish and wildlife under their jurisdiction.

It has been an ongoing challenge to assess and communicate the effectiveness of the SWG program and SWAPs. Complex biological and ecological interactions make it difficult to attribute changes in species or habitat status to the effects of any single action and it can take decades for species to recover once conservation work begins. Nevertheless, a 2005 performance review of the US Fish & Wildlife Service's (USFWS) Wildlife and Sport Fish Restoration (WSFR) Program, from which SWG is administered, concluded that "results are not being demonstrated."

Although not directly related to the performance review, in February 2011, the US House of Representatives passed a continuing resolution for FY11 that eliminated funding for the SWG program. This served as a wake-up call for the 6,300-member TWW Coalition which sprang into action to help restore funding for the program. During completion of this report, the US Senate was deliberating its version of a continuing resolution and it is uncertain if there will be funding for the program in FY11. The identification of effectiveness measures for the SWG program is thus needed to not only improve conservation work, but also to help demonstrate to policy makers that the program is leading to the outcomes intended by Congress and therefore is a good investment of public funds.

EXPECTED RESULTS AND BENEFITS OF THE FRAMEWORK IN THIS REPORT

Most state fish and wildlife agencies are facing severe financial challenges. This is affecting the capacity of states to conserve fish and wildlife under their jurisdiction. Development and implementation of an effectiveness measures framework can help agencies in these trying fiscal times in the following ways:

- Provide a means to evaluate conservation actions so that successful activities/programs can be continued and communicated and less successful ones improved or abandoned;
- Establish a standardized and accessible body of project performance data to inform and guide actions by current and future wildlife managers;

- Provide a cost-efficient mechanism for reporting data through regional and national summaries that will help meet congressional reporting expectations and articulate the value of SWG, and potentially SWAPs, to policy makers, conservation partners, and taxpayers.

Recommended Actions

The Working Group recommends that the TWW Committee adopt the following recommendations:

- **Approve the Proposed Effectiveness Measures Framework for SWG.** The framework and effectiveness measures described in this report are the result of more than a thousand hours of labor by the Working Group, state fish and wildlife agency staff, and others during the last 18 months. Initial draft measures were tested by nine pilot states, reviewed by State Wildlife Action Plan Coordinators, and distributed for review to states and partners. Drafts of the measures were also made available for review by the Office of Management and Budget and congressional appropriations staff. The resulting measures represent the best collective thinking on effectiveness measures that should stand the test of time and have applicability beyond SWG.
- **Integrate SWG Effectiveness Measures into the USFWS Wildlife TRACS Reporting and Tracking Tool.** The USFWS began work on a new reporting and data tracking system concurrent with the effectiveness measures project. Wildlife TRACS is being designed to make full use of the effectiveness measures developed by the Working Group and after an evaluation of potential information technology systems, TRACS was deemed the best system available to track and report on effectiveness of SWG as outlined in this report.
- **Explore Options for Integrating Effectiveness Measures into the Grant Application and Reporting Process.** The Wildlife TRACS Project Advisory Group is exploring ways to streamline the grant making and reporting process for SWG. To ensure that the framework can be successfully implemented, it is important that data collection and reporting not add substantially to existing grant making and reporting processes. Consideration should be given as to how best to incorporate effectiveness measures into these processes to ensure the utmost efficiency in data collection and reporting.
- **Form a Working Group to Assess and Recommend Improvements for SWAPs.** To ensure State Wildlife Action Plans remain relevant and effective, a Working Group should be convened in the future to identify best practices and to make recommendations on improving the plans. The Working Group should complete its work prior to the 10 year anniversary of the plans in 2015.

Conclusion

Because of the severe economic constraints that states are currently facing, it may seem like the wrong time to implement an effectiveness measures framework. However, increased scrutiny on budgets and growing expectations by the public require that states be as efficient and effective as possible or risk losing hard fought and much needed funding. This framework will lead to an improved understanding of how the SWG program is on a path to meet expected outcomes, promote adaptive management and provide a tool for the broader conservation community to improve its work. Since the capacity to collect and report data on effectiveness will vary among states, implementation of the framework should be voluntary and as efficient and streamlined as possible so resources are not diverted from doing on-the-ground conservation work. Lastly, although it was not feasible to develop a separate set of effectiveness measures for SWAPs, there is a need to assess the plans to determine if they are meeting their intended purpose and if there is a need for improvements. This assessment should be completed prior to the ten year anniversary of the plans in 2015.

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1. Introduction

1.1 The Need to Track and Report Effectiveness of Conservation Actions

The State and Tribal Wildlife Grants (SWG) program was created by Congress in 2000 to address a longstanding need to plan and implement actions to conserve declining fish and wildlife species before they become threatened or endangered. It is the core federal program for preventing future endangered species listings, and is a principal source of funding to implement and revise congressionally-mandated State Wildlife Action Plans. Each state and territorial fish and wildlife agency receives an apportionment based on a state's human population and its land area. Apportionments average about $1.2 million annually for each state/territory. State Wildlife Action Plans (SWAPs) were completed in 2005 and they identified more than 12,000 Species of Greatest Conservation Need (SGCN), their key habitats, priority threats, and thousands of on-the-ground conservation actions needed to stabilize or reverse declining species populations.

Despite the importance of SWG and SWAPs to the states and their partners, there is a need to better demonstrate effectiveness. In 2005, the U.S. Fish and Wildlife Service's (USFWS) Wildlife and Sport Fish Restoration Program (WSFR) that oversees SWG was assessed using the Office of Management and Budget's (OMB) Performance and Reporting Tool. The program was given a rating of "*Results Not Demonstrated*" because it lacked long-term outcome and annual output-oriented performance goals, lacked regular independent evaluation, and did not have a strong accountability system. In 2007, the US House of Representatives included report language in the bill funding the US Department of Interior that requested the USFWS require regular performance reporting to measure the success of SWAP implementation.

In this era of record-high budget deficits, the Administration has asked federal agencies to develop their 2012 budgets against a backdrop of fiscal austerity. Budget guidance released in a June 8, 2010 memo from OMB instructed federal agencies to "eliminate low-priority programs and activities to free up the resources necessary to continue investments in priority areas." The guidance also directed agencies to "identify the programs accounting for five percent of their discretionary spending that have the lowest impact on agency missions." In February 2011, under growing pressure to reduce the federal deficit, the US House of Representatives passed a Continuing Resolution that cut nearly $60B from the FY11 budget compared to the previous year. In that bill a number of conservation programs including the SWG Program had their funding eliminated. Action in the US Senate is pending.

During the first decade of SWG funding and after five years of SWAP implementation, state fish and wildlife agencies have made enormous strides in implementing conservation actions to conserve our nation's most at-risk fish and wildlife. However, it is an ongoing challenge to assess and communicate the effectiveness of these efforts. Disparate reporting measures, a lack of a robust reporting system and national framework for identifying effectiveness measures makes it difficult for state fish and wildlife agencies individually and the WSFR program nationally to demonstrate the importance and effectiveness of the SWG program. These deficiencies could put the program at-risk, particularly in light of the significant federal budget cuts looming on the horizon. This report recommends a framework that could help address these challenges.

In addition to demonstrating effectiveness of SWG-funded conservation actions to policy makers, there is also a need to help managers learn from and improve upon the conservation actions they implement. The framework proposed in this report can help managers learn from their successes and failures and share this information with their peers, so that they can become even more effective over time.

1.2 Using an Adaptive Management Approach to Measure Effectiveness

There are two principal types of monitoring questions in conservation. *Status monitoring* identifies how populations of species as well as the habitats and natural processes on which they depend are doing over time. *Effectiveness monitoring* determines if conservation actions are having their intended impacts and how they can be improved (see definitions in Figure 1).

State fish and wildlife agencies and their partners have a long history of collecting and reporting on measures that address status questions (e.g., which species are of greatest conservation need; what issues are impacting species of greatest conservation need and their habitats). They have also tracked the *implementation* and *immediate outputs* of conservation actions supported by funding through SWG and other sources (e.g., acres of land purchased, number of dams removed). Given the complexity of ecological and socioeconomic systems, rapidly changing circumstances, and the lengthy timeframes in which conservation actions are generally implemented, it has been much more difficult to bring these two sets of data together to attribute changes in species or habitat status to the effects of any one action. It has been equally difficult to roll up the results of many different actions into meaningful reports within and across state boundaries.

Systematically measuring the effectiveness of conservation actions requires specifying a "theory of change" linking these actions to their ultimate desired impacts (Figure 2) through a five-step process:

1. Define the conservation action;
2. Describe, via a results chain, the theory of change as to how the action will lead to desired impacts;
3. Identify a limited set of effectiveness measures to assess progress at key points throughout the life of the project;
4. Develop and test effectiveness measures to ensure they provide meaningful information within existing human, legal, and financial constraints, and;
5. Collect, analyze, and share data about the effectiveness measures to show whether or not the conservation action achieved the desired impact, why it succeeded or failed, and how implementation of the action can be improved over time under different conditions.

Figure 1. Clarification on Terminology

The following definitions describe key terms used in this report.

Effectiveness measures: Indicators used to assess whether a given conservation action is leading to its desired objectives and ultimate impacts.

Framework: The process and products (definitions of actions, results chains, effectiveness measures, and data questionnaires) that are proposed in this report to assess the effectiveness of each generic conservation action.

Generic (conservation) action: A group of similar actions that follow the same general theory of change (e.g., species restoration, outreach and education).

Objective: A specific, measurable, acheivable, relevent, and time-limited statement that describes the desired short, medium, or long-term outcomes of a conservation action.

Process: The five steps the Working Group used to develop and test results chains, effectiveness measures, and questionnaires.

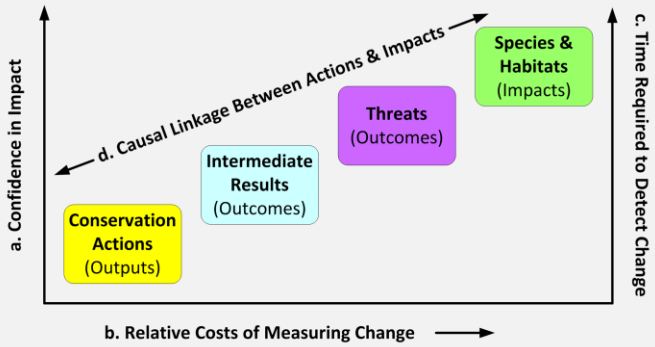
Questionnaire: A survey form that provides a user-friendly way to collect data related to the effectiveness measures.

Results chain: A graphical diagram that links an action to the desired impact through a series of short, medium, and long-term results in an "if-then" fashion. Also called a ***Theory of Change***.

Status measures: Indicators used to assess how species or their habitats are doing over time, without reference to specific conservation actions.

Figure 2. Measuring Effectiveness Requires Linking Conservation Actions to Impacts

Measuring the effectiveness of a conservation action requires more than counting short-term outputs such as dollars spent or the number of pamphlets distributed. But paradoxically, we also cannot rely solely on measures of the ultimate impacts – the status of the species and habitats of interest—to measure effectiveness. This is because as depicted in the diagram, as confidence in our measures increases, the cost of measurement and the time required to detect change also increase. To this end, the best effectiveness measures require defining a *theory of change* or *results chain* that links actions through outcomes to the ultimate impact, and then collecting data at key steps.



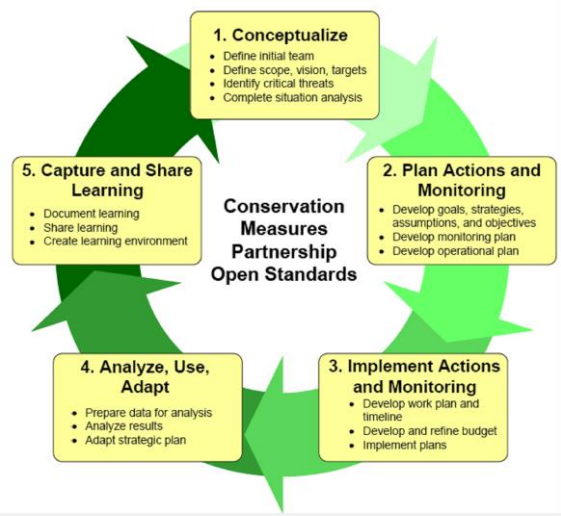
Source: Adapted from CMP 2008

This process of measuring the effectiveness of conservation actions is the key to *adaptive management,* which requires building monitoring efforts into the overall project management cycle (Figure 3). Under an adaptive management approach, project teams state their theory of change behind each action and then collect the information required to evaluate its effectiveness. If the activity provides the expected results, effectiveness measures help communicate that success so others may follow suit. If, on the other hand, the action does not work as hypothesized, then the managers can identify problems and either modify the action, or try alternatives. The key to adaptive management is to learn from successes, informative failures, and useless failures and respond accordingly so programs can become more effective and efficient over time.

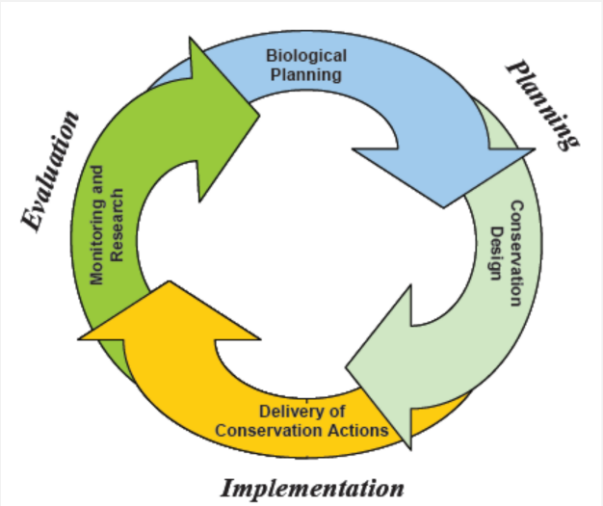
Figure 3. Effectiveness Measures Are Implemented in the Context of the Project Cycle

A key premise behind the framework proposed in this report is that effectiveness monitoring and performance reporting are not additional activities added on top of existing project management responsibilities. Instead, as shown in the following diagrams, they should be integrated into the project management cycle. The diagram on the left shows the adaptive management cycle developed by the Conservation Measures Partnership, a forum of key conservation NGOs, funders, and agencies. The cycle on the right shows the Strategic Habitat Conservation Cycle developed by the US Department of the Interior. Although the two cycles use different terms, the steps of planning, implementation, and monitoring in an iterative cyclical fashion are largely equivalent. These cycles represent two ways of implementing Element 5 in SWAPs which requires states to monitor species, habitats, and the effectiveness of conservation actions, and then adapt conservation actions to respond to new information or changing conditions, or in other words, to practice adaptive management.

Open Standards for the Practice of Conservation



Strategic Habitat Conservation



Source: CMP 2008 & USGS 2006

By developing an appropriate set of effectiveness measures, conservation practitioners will be better able to articulate the value of SWG and potentially SWAPs to policy makers and taxpayers, and ensure positive conservation impacts. This report provides guidance to the states on how to measure the effectiveness of conservation actions funded through SWG and a tool to track and report that effectiveness.

The recommendations provide a cost-efficient mechanism for reporting within states that will also facilitate rolling-up data to regional and national levels. The effectiveness measures could help states meet congressional reporting expectations on the use of SWG and the effectiveness of that program for implementing state-driven conservation. States can proactively demonstrate the benefits of SWG and SWAPs, rather than waiting for Congress and OMB to identify monitoring and reporting standards. The performance measures presented in this framework will facilitate communication about the importance of state fish and wildlife agency work to Congress, partners, and the public who will ultimately decide on continued funding for SWAPs.

1.3 The Effectiveness Measures Working Group

Although state fish and wildlife agencies use adaptive management to assess the effectiveness of the individual actions they implement, in the future, state fish and wildlife agencies may also be required to develop a system that reports on cumulative effectiveness of actions across regions or nationally. The challenge for this project was to develop a framework that can be implemented voluntarily and that minimizes, or potentially even reduces the

reporting burden on states, while at the same time improving the overall effectiveness of conservation work and accountability to policy makers and the public.

With this challenge in mind, in September 2009, the Association of Fish and Wildlife Agencies' (AFWA) Teaming With Wildlife (TWW) Committee formed the Effectiveness Measures Working Group (Working Group) comprised of individuals with expertise in effectiveness measures from both state agencies and conservation partner organizations. Foundations of Success (FOS), a nonprofit organization that specializes in developing effectiveness measures for conservation work, was hired to help facilitate the process. The Working Group's charge was to develop and test an effectiveness measures framework for assessing SWG and potentially the broader implementation of SWAPs. This report concludes with a draft set of recommendations to the TWW Committee for consideration at their meeting in March 2011. These recommendations address the following:

- A framework for evaluating the effectiveness of actions funded under SWG and broader SWAPs;
- Specific application of this framework to produce effectiveness measures for the most common actions funded under SWG;
- The Information Technology system required to implement this framework; and
- Suggestions as to how this framework might best be implemented on a voluntary basis by state agencies.

Razorbill Decoys / USFWS

2. Framework for Assessing Effectiveness of Conservation Actions

2.1 Overview of Assessing Effectiveness of Conservation Actions

State fish and wildlife agencies are implementing thousands of specific conservation actions to address threats that affect more than 12,000 species identified as at-risk. Although each conservation situation is unique, there are patterns in the **theory of change** (or results chain) behind all these actions. For example, an agency in the Northeast may promote awareness in boaters of the need to scrub their boat hulls when moving between waterways to minimize the spread of invasive aquatic weeds. An agency in the Northwest may launch a campaign to persuade homeowners to avoid over-fertilizing of lawns to reduce nutrient runoff into an estuary. Although these two actions take place in different ecosystems, are implemented by different agencies, and are countering different threats, they are analogous and their respective theories of change would look very similar. Both actions involve outreach and education that is designed to raise awareness in a specific public sector with the goal of changing behavior. These two conservation actions could be lumped under a "**generic" conservation action** called *Education*, and standard effectiveness measures could be developed that would allow these measures to be rolled up across ecological and sociopolitical boundaries.

This chapter describes a proposed **framework** that states and their partners can use to assess the effectiveness of conservation actions. This framework includes a list of common or generic conservation actions and a **process** for developing results chains, **effectiveness measures,** and data collection **questionnaires.** If this framework is approved and implemented, then it can be applied to the full suite of generic conservation actions that are shared by all states. This chapter outlines the framework and provides recommendations as how to best apply it.

2.2 Expectations of State Agencies Under this Framework

State wildlife agencies will undoubtedly ask: "What does this proposed framework mean for my agency?" The following chapter describes the core of the framework that could be used by states to assess the effectiveness of their conservation actions. The part of the proposed framework which most states will actively use includes: a list of and definitions for generic conservation actions commonly implemented or funded by SWG (Appendix I), and a set of effectiveness measures for each action and specific questionnaires that provide data about these measures (Appendix II).

To illustrate this concept, consider an example in which state agency staff in Minnesota and Wisconsin work to translocate Greater Prairie Chickens from Minnesota to the Buena Vista Wildlife Area in Wisconsin in an effort to increase populations, as well as genetic diversity. This specific action would be classified more generically as "species restoration," based on the definitions in Appendix I. Reporting on effectiveness under this framework might include:

- **Providing action-specific information during the grant application process.** This might include baseline information about the actual state of the prairie chickens, the expected duration of the translocation effort, and the expected population or recovery outcomes.

- **Providing data on progress of the action over the life of the grant.** For this example, some data that would need to be gathered might include:
  - *Plan for Restoring Species and Project Sites* – Is this project being implemented under an overall plan for restoring the species (i.e., Greater Prairie Chicken)? Does this plan define clear biological objectives for the species and for the sites?
  - *Stakeholder Buy-In* – During the reporting period, were there any formal challenges by stakeholders to prevent the release of the target species into the restoration sites? If yes, was the project team able to mediate these challenges?
  - *Target Units of Species Released* – What percent of initial release work across all restoration sites has been completed? How many units (i.e., individuals, breeding pairs, communities) of the species have been reintroduced?
  - *Species Breeding at Restoration Sites* – Are the introduced populations breeding within the recovery site(s)?
  - *Population Viability* – Has the population goal for the target species within the restoration site(s) been achieved?
- **Contributing to "roll up" reports**. To the extent that states need to report data at a state or regional level, they may want to compare data across the same actions within their state or region and then aggregate and report them in a succinct, visually-appealing and powerful manner that would effectively communicate results to policy makers, stakeholders, and the public. Figure 7 in Section 2.3 provides an example of such a report for species restoration.

2.3 The Process

To develop the framework for assessing the effectiveness of conservation actions described in the previous section, the Working Group followed the five-step process described in Chapter 1.2.

The Working Group used this process to pilot-test standardized measures for four generic conservation actions. This framework could be extended to many other conservation actions whether they are funded through SWG or not. This process would not need to be replicated by individual states, but rather a team of state representatives could implement the process on behalf of the broader community, saving considerable time and expense. To illustrate this process and the resulting products, a generic Species Restoration Example has been used.

Franklin Ground Squirrel / Indiana Division of Fish & Wildlife

Step 1. Define the Generic Conservation Action

The Working Group identified 11 categories of generic conservation actions that are most commonly funded with SWG dollars, as well as 2 additional actions that are common components of other actions. This list was developed by first reviewing State Wildlife Action Plans and SWG performance reports to develop an initial list of commonly-mentioned actions. To provide a standard structure, the group then categorized and synthesized these actions following the IUCN-Conservation Measures Partnership's Standard Classification of Conservation Actions (IUCN-CMP 2008). States and USFWS's WSFR Program provided additional input to further refine the list. The list is **not** meant to be exhaustive but rather represents the most common actions and will likely need to be added to over time. The generic actions include:

1. Direct Management of Natural Resources
2. Species Restoration *
3. Creation of New Habitat
4. Acquisition / Easement / Lease *
5. Conservation Area Designation
6. Environmental Review
7. Management Planning
8. Land Use Planning
9. Training & Technical Assistance
10. Data Collection & Analysis *
11. Education *

The two actions that are not stand-alone, but are components of other actions are:

A. Incentives

B. Stakeholder Involvement

A complete list of the generic conservation actions, their associated definitions, and a list of real-world examples can be found in Appendix I. Four of the generic conservation actions (those marked with an asterisk *) were selected for pilot testing. The framework was then extended to the remaining actions listed above.

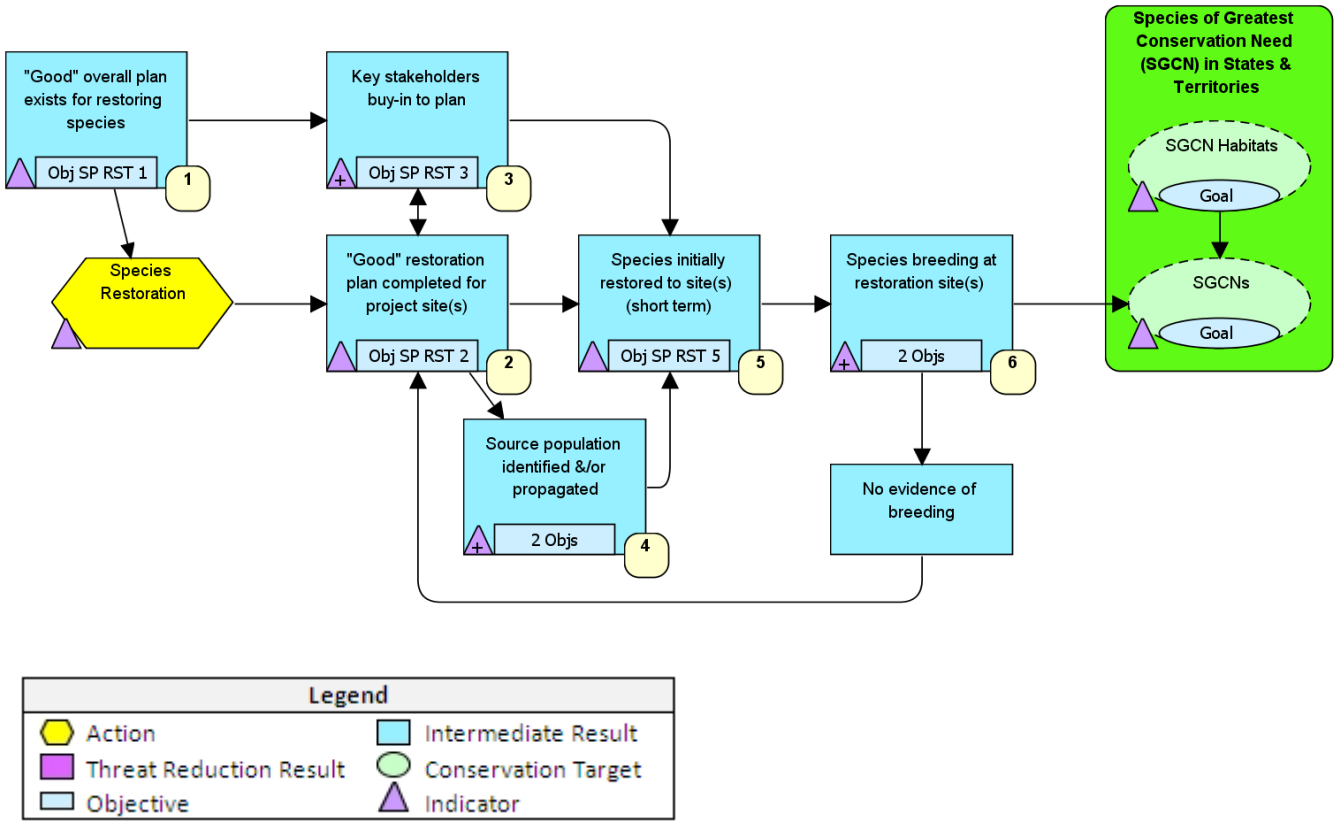
Step 2. Describe Via Results Chains the Theory of Change as to How Each Action Leads to Desired Impacts

Before determining effectiveness measures for any given action, it is first necessary to outline the theory of change behind the action. Results chains are graphical diagrams that map out a series of causal statements that link short, medium, and long-term results between an action and the ultimate desired impact in an if-then fashion. The Working Group evaluated several alternatives for constructing and depicting theories of change and ultimately decided to use Results Chains (FOS 2007) using the Miradi software program (www.Miradi.org). Miradi uses a series of step-by-step interview wizards to guide the development of results chains, associated objectives, and measures to assess the effectiveness of conservation actions.

Figure 4 shows an example of the Species Restoration Results Chain. As outlined on the right-hand side of the results chain, a key precursor for effective Species Restoration involves developing an overall plan for restoring the species (1). The first step involves developing a good restoration plan for the specific project sites (2) and, if needed, assuring that key stakeholders support the plan (3). It is also generally necessary to identify a source population for the restoration effort, either from suitable wild populations or from captive breeding efforts (4). Once the species is restored to the site (5), a key result is that the species is breeding at the restoration sites (6). If there is no evidence that breeding is occurring, then it will be necessary to re-examine the plan and repeat as needed.

The results chain for each generic conservation action went through several iterations, generally starting out in a more detailed and complex form, and then simplified to facilitate understanding and reporting. These generic results chains are included in Appendix II along with a more specific example for each action.

Figure 4. Results Chain for Generic Species Restoration Actions



Step 3. Identify a Limited Set of Effectiveness Measures to Assess Key Points along Each Results Chain and Produce Desired Roll-Up Reports

Once the results chains for each conservation action were developed, the Working Group used the chain and assessments of what data might be realistically available to states to identify effectiveness measures for short- and medium-term results (blue boxes in the results chains). To develop the effectiveness measures, the Working Group found it helpful to first think about *generic objectives* for each result in the chain and then extract the measures from those objectives (**Table 1**).

The following criteria were used in selecting measures:

- **Linked** – tied to key factors in the theory of change laid out in the results chain
- **Measurable** – in either quantitative or qualitative terms
- **Precise** – defined the same way by all agencies
- **Consistent** – unlikely to change over time
- **Sensitive** – changing proportionately in response to actual changes in the condition or item being measured
- **Overarching** – available to be measured at various points throughout the life of a project
- **Achievable** – not onerous for states or their partners to report

Table 1. Objectives, Effectiveness Measures, and Monitoring Questions for Species Restoration Generic Action

Note that labels and results correspond to the results chain in Figure 4

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
SP RST 01	**Generic:** "Good" overall plan exists for restoring the species	Before implementation work starts, a "good" restoration plan exists for the species within a desired region (developing this overall plan will usually not be part of this project).	Presence of plan; Assessment of plan quality against criteria	% of restoration efforts that are based on a "good" plan by taxa and by region	App 1. This project involves: relocation/captive propagation/both. App 2. What species (or other taxonomic units) are expected to benefit from this project? App3. What is the expected duration of the restoration effort in this project? App 4. Is this project being implemented under an overall plan for restoring the species? App 5. Does this overall restoration plan define clear biological objectives required for recovering the species? App 6. Approximately what percentage of the overall species recovery effort is represented by this project? App 7. Does this restoration plan identify: 1) appropriate source(s) of the species, 2) candidate restoration sites, 3) methods for transferring and introducing the species to new sites, 4) monitoring and follow-up methods, and 5) risk assessment and mitigation steps?
SP RST 02	**Generic:** "Good" restoration plan completed for project site(s)	Before implementation work starts, a "good" restoration plan has been developed for the specific project site(s).	Presence of plan; Assessment of plan quality against criteria	None	1. Has the project developed a plan for restoration efforts at the specific project site(s)? 2. Does this restoration plan identify: 1) clear biological objectives, 2) appropriate source(s) of the species, 3) methods for transferring and introducing the species to the sites, 4) monitoring and follow-up methods, 5) a budget and work plan for this work, 6) clear exit criteria for the project (both unsuccessful and successful) , and 7) risk assessment and mitigation steps? 3. What is the "unit" for defining restoration site(s)? 4. How many total site(s) is the project targeting for restoration efforts?

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
SP RST 03	**Generic:** Key stakeholders buy-in to plan	Prior to and following implementation of the plan, all relevant stakeholder groups are either supportive or at least non-hostile towards the restoration.	Actions taken by individuals or organizations that are against the restoration (e.g., formal legal challenges to the plan or hostile acts such as shooting restored animals)	Total number of projects that are being blocked by stakeholders, by taxa and region.	5. During the reporting period, were there any formal challenges by stakeholders to prevent the release of the target species into the restoration sites? 6. If yes, was the project team able to mediate these challenges?
SP RST 04	**Generic:** Source population identified and/or propagated	Prior to implementation of the plan, a suitable source population to meet needs of all restoration sites has been identified. If necessary, before restoration efforts start, sufficient individuals have been propagated to meet needs of all restoration sites.	Evidence of suitable source population being identified. % of total individuals required to meet needs of all sites	% of projects that are able to identify and/or propagate sufficient individuals, by taxa and by region	7. Has the project identified a suitable source of individuals to meet needs of all sites in the restoration effort? 8. If propagating, what percent of total individuals required to meet needs of all sites in the restoration effort have been bred?
SP RST 05	**Generic:** Species initially restored to sites (short-term)	By specified target date, the target number of units* have been introduced to Area(s) YYYY. * Units could be individuals, breeding pairs, communities, pounds of fish fry, or other measures as appropriate.	% of target number of units that are released	% of projects that are able to release sufficient units, by taxa and by region	9. Has the project begun releasing species to restoration site(s)? 10. What percent of initial release work across all restoration sites has been completed? (combines both within site and across sites) 11. What is the "unit" for measuring quantities of species released within restoration site(s)? 12. How many units of the species have been reintroduced?
SP RST 06	**Generic:** Species breeding at restoration sites (medium-term)	Within X years of introduction, the restored population is successfully breeding within the restoration site(s).	% of sites with restored population successfully breeding	% of all projects with restored species successfully breeding, by taxa and by region	13. Are the introduced populations breeding within the recovery site(s)? 14. What is the "unit" for measuring successful reintroduction of the species within restoration site(s)? 15. How many units of the species are present in the recovery sites?
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability.	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	16. Are the introduced populations viable within the recovery site(s)? 17. Has the population goal for the target species within the restoration site(s) been achieved? 18. Has this project contributed to any changes regarding the conservation priority status (SGCN priority, Threatened/Endangered, etc.) of the target species in your state?

Step 4. Develop and Test Data Collection Questionnaires for Each Measure

Once the results chains were developed and measures identified, the Working Group created questionnaires to test and evaluate the proposed effectiveness measures using activities funded through SWG. Figure 5 includes some sample questions developed for species restoration and Figure 6 contains general questions that would be asked for all SWG projects. These questionnaires were then pilot-tested with real-world projects drawn from state members of the Working Group (MN, NY, TX, VA, WI) and four additional states (FL, GA, MO, NE). In the second phase of this work, questionnaires were developed for the remaining actions and then peer-reviewed by key state agency staff. These questionnaires are critical, in that as they are incorporated into grant application and reporting processes, they are the only part of the effectiveness measures system that most users will encounter.

Figure 5. Partial Questionnaire for Species Restoration Action

Source Population Identified and/or Propagated

7. Has the project identified a suitable source of individuals to meet needs of all sites in the restoration effort?

- ○ Source(s) identified to provide all of the individuals needed (100%)
- ○ Source(s) identified to provide some of the individuals needed (approximately _____ %)
- ○ Source(s) not yet identified to provide needed number of individuals
- ○ Captive breeding/propagation required to augment source population

If propagating individuals:

8. What percent of total individuals required to meet needs of all sites in the restoration effort have been bred?

_____ %

Notes: _____

Species Initially Restored to Sites (Short-Term)

9. Has the project begun releasing species to restoration site(s)?

○ Yes ○ No

10. What percent of initial release work across all restoration sites has been completed? (combines both within site and across sites)

_____ % Notes: _____

11. What is the "unit" for measuring quantities of species released within restoration site(s)?

- ○ Individuals
- ○ Breeding pairs or units
- ○ Communities
- ○ Other (e.g., pounds of fish fry)

Please describe if needed: _____

12. How many units of the species have been reintroduced?

_____ total units across all sites Notes: _____

Figure 6. General Questions for All Conservation Actions

The Working Group identified a common set of questions (see below) as critical information to gather on the project level when reporting on a conservation action. These questions are recommended to be consistent across all conservation actions and serve as precursor information that can be captured in the application process of the grant. If this data cannot be captured on the front end due to limitations, then questions should be incorporated as general questions in every report.

Basic Project and Action Info

Project Title *(text field)*

Project Contact *(text field; capture contact information, including position title)*

Project Partners *(text field; capture contact for each partner org)*

Conservation Actions *(pick list of actions)*

General description of project (note: not just the action – max. 1000 characters)

Budget Info

Total Project Budget (grant + match) (*value field)*

Cost of Conservation Action *(value field; one for each action)*

Sources of non-federal match funding (*pick list: Agency general fund, license plate revenue, private funds/NGO contributions, In kind/volunteer work hours, other)*

Basic Result Info

How does the *Conservation Action* address a specific goal/objective within the State Wildlife Action Plan (*pick list of the 8 Elements; descriptor box*)

Threats addressed by this *Conservation Action (pick list – IUCN CMP Taxonomy of threats, level 1 & 2)*

Identify the Primary SGCNs benefitting from this *Conservation Action (pick list of SGCNs within that state: generated from NBII database; include N/A)*

Identify the main habitat types (if any) that this *Conservation Action* addresses *(pick list of habitat types; include N/A*

Step 5. Collect and Analyze Data and Use to Adapt Metrics

When applying the five-step process to any conservation action implemented, after collecting and analyzing monitoring data a project team would then adapt actions and improve the overall effectiveness of its conservation efforts. In the case of the Working Group, there were not specific on-the-ground actions to adapt.

Finally, a key to communicating effectiveness measures is the ability to report the information in a clear, concise, factual, and visually stimulating manner. Policy makers in particular need information that is summarized and can be assimilated and interpreted in as little time as possible. The mock-up report in Figure 7 (enlarged version found in Appendix III) illustrates an example of how the species restoration efforts could be rolled up and communicated to policy makers. The actual data is fictitious, though the group tried to use realistic data and draw on real-world examples. The intent of this mock-up is to provide an example of how state fish and wildlife agencies could communicate results to target audiences such as agency directors, members of Congress or the Office of Management and Budget.

Figure 7. Example of an Effectiveness Report on Species Restoration

Mock-up Example of 2-Page Layout for Reporting on Conservation Actions

Effectiveness of Species Restoration Efforts

What Does This Include?

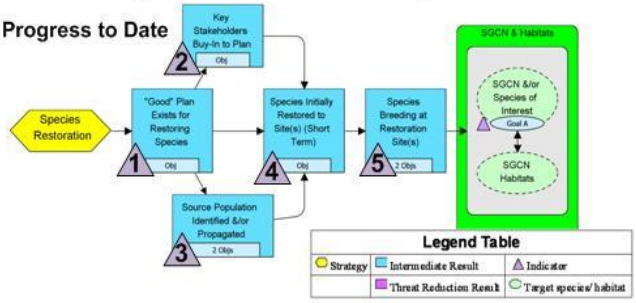
Efforts to reintroduce, relocate, or stock native animals or plants or translocate animals to an area where they are not currently found. Some examples include:

- Translocating/breeding in captivity black-footed ferrets to establish new populations in suitable habitat.
- Restoring mussel assemblages to historically occupied stream stretches

How Do We Measure Effectiveness?

Establishing good effectiveness measures for conservation actions requires being clear about the linkages among conservation actions, changes in threats those actions are designed to address, and the status of the relevant species and habitats. Laying out this "theory of change" isolates and limits the key factors that need to be monitored in order to assess whether our conservation actions are leading to the intended outcomes or changes.

Progress to Date



115 species restoration grants to 28 states were made from 2008-2010. The majority of those led to species breeding at restoration sites.

Effectiveness of Funded Species Restoration Efforts

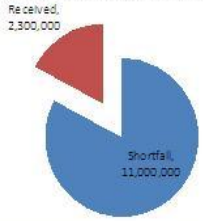
1. 90% of efforts have "good" plans that meet key criteria
2. 70% have stakeholder support to move the efforts forward
3. 81% have identified or propagated sufficient species to meet restoration needs
4. 65% have released sufficient species for initial restoration
5. 47% show restored species are breeding successfully

For more info: www.swgdb.org/species-restoration/

Where Do We Go From Here?

While much has been accomplished with funding for species restoration, the support is currently not adequate to meet conservation goals established by states to protect Species of Greatest Conservation Need and their habitats. Consequently, species restoration efforts are falling short. Specifically, it is estimated that states require an additional $11 million dollars to meet their goals for species restoration activities.

Funding Needs for Species Restoration



Stories from the Field

Washington Department of Fish and Wildlife and partners, with SWG support, are helping conserve and restore western pond turtle populations - a state endangered species that has been impacted by habitat loss and non-native predators like large-mouth bass and bullfrogs which eat young turtles.

As part of their recovery strategy, managers implemented a "head start" program for captive bred and wild hatchlings. The young turtles are raised in captivity until they are too large to be eaten by bass and bullfrogs – at which point, the turtles are released into suitable habitats to augment existing or create new populations.

In 2007, Washington achieved goals for restoring at least four self-sustaining populations in the Columbia Gorge. Although efforts to restore this species to Puget Sound recovery areas continue, meeting the Columbia Gorge recovery goals means it is unlikely this species will be extirpated or require protection under the Federal Endangered Species Act

Photos by Kate and Frank Slavens

Questions to Explore

- How can states better engage stakeholders and explain practical benefits of species restoration to improve support?
- Under what conditions does it make sense to do species restoration versus other less labor and cost intensive, like outreach or economic incentives?

2.4 Analysis of Pilot Testing Measures Framework with States

The pilot test involved determining the feasibility and ease with which state agency staff could identify, track, and report on relevant effectiveness measures for select conservation actions. Nine states completed questionnaires on the four selected actions for the pilot phase. The Working Group used the pilot test results to modify existing results chains, measures, and questionnaires, as well as complete the development of materials for the remaining generic conservation actions that are presented in Appendix II.

All states were able to complete the surveys, although the level of difficulty in doing so varied. Most states reported that they had all or most of the data on hand to answer the questions. This included 71% of states for Outreach, 83% for Species Restoration, 60% for Land Acquisition, and 93% for Information and Data Collection. States gathered the data from existing reports, databases, or field interviews. Most states reported that it required one hour or less to gather the information. In those states where it was more difficult to acquire data, the difficulty stemmed from the need to involve multiple people in the process. Collection of financial data was cited as the greatest challenge.

There was a concern among the respondents that adopting this framework would be especially difficult if reporting requirements increase. In addition, concerns were raised that this project could lead to some duplication in databases and that some states would be resistant to making substantial changes to existing state databases to accommodate reporting of effectiveness measures. Pilot states that were part of the Working Group were more likely to indicate that data collection was relatively easy; those that were not part of the working group had more difficulties. About half of the states felt that some training would be needed on effectiveness measures data collection and reporting to help them successfully implement the framework.

Despite these concerns, pilot testers recognized the need for monitoring and reporting and felt that adoption of the effectiveness measures framework would get easier over time, especially if data collection were built into existing grant application and reporting processes. Most respondents felt that the reporting format was feasible and would be a better way to capture progress and accomplishments than the current system. However, it was noted that narratives that are part of the existing grant reporting process should be retained. One of the most frequently mentioned benefits of the process was the ability to summarize data across states in a consistent and standardized way – an aspect pilot testers felt would greatly improve the efficiency of reporting and make it possible to demonstrate the effectiveness of SWG and SWAPs. Another benefit expressed was that the process would clarify objectives and expectations from the outset. Overall the most relevant findings from the pilot testing include the need for 1) consistent measures across states; 2) clear expectations from the start on the level of effort needed for data collection; 3) training on developing and reporting effectiveness measures; and 4) ensuring that database entry and reporting are not duplicative.

2.5 Using the Framework to Promote Improved Project Management

Although the primary purpose of the Working Group was to develop effectiveness measures for conservation actions funded by SWG or implemented as part of SWAPs, the team also recognized the potential for this approach to generally improve project management with state agencies. If agency projects and programs use the effectiveness measures framework outlined in this report and the broader *Open Standards* on which they are based to define the context in which they are working, lay out their assumptions, and collect specific data to test these assumptions, they should be able to determine whether these actions are working to achieve the desired results. If the actions are not working as predicted, hopefully project managers can determine how to appropriately adapt their strategies. Furthermore, if managers share their results with other project leaders doing

similar work in other states or regions, then these results can be collectively analyzed to determine the conditions under which the action is likely to work.

This kind of adaptive management would require managers to not merely report on the effectiveness measures for their specific actions, but also to take the underlying theories of change and adapt them to their specific circumstances. Getting managers to do this work would likely require additional training and support but could have huge potential payoffs in not just measuring the effectiveness of actions, but actually improving effectiveness over time.

2.6 Recommendations for Assessing the Effectiveness of Conservation Actions

The Effectiveness Measures Working Group offers the following recommendations for assessing the effectiveness of SWG-funded and SWAP-implemented conservation actions. It's understood that it is ultimately the choice of each state to decide whether to adopt these recommendations; they are strictly voluntary.

Recommendations: The Working Group recommends that the Teaming With Wildlife Committee:

- **Adopt the proposed effectiveness measures framework to improve accountability and project management of State Wildlife Grants.** If states want to be able to compare, roll-up, and report on the effectiveness of conservation actions, then states (or a subset of states representing the broader community) will have to 1) agree on specific generic conservation actions, 2) develop specific measures and data collection questionnaires for each action, and 3) collect and share data for all instances of that type of action being implemented. The Working Group believes that the framework and measures presented in this document meet these needs and can both serve accountability functions, and increase the potential for learning and improving conservation actions. We recommend that the Committee adopt this framework for SWG.
- **Integrate the framework into grant application and reporting processes.** State agency staff and resources are already stretched thin. If it is to be successfully implemented, the effectiveness measures framework will have to become part of the routine work of the agencies, replacing rather than adding to existing reporting requirements. Working Group members working in concert with staff from the USFWS Wildlife and Sport Fish Restoration Program and state federal aid staff should examine current grant making and reporting processes and make recommendations as to how these processes could be changed to accommodate the effectiveness measures framework and to streamline the inclusion of effectiveness data in grant making and reporting processes. As outlined in greater detail in Chapter 3, states may need to invest in new or change existing IT systems to collect and share data. Members of the Working Group will continue collaborating with the USFWS and other stakeholders to provide input into the design of the Wildlife TRACS reporting tool and other relevant tools to ensure that they meet the needs articulated in this report.
- **Extend the framework as needed for other generic conservation actions.** The Working Group has developed effectiveness measures for 11 of the most common conservation actions funded by State Wildlife Grants. The process used to develop these measures should be extended as needed for any additional actions for which it is necessary to track effectiveness. This work could be done by one or more teams on behalf of the broader community.

In addition to the above recommendations, the Working Group recommends that only essential data be collected for reporting to minimize the burden on states. Furthermore, the Working Group recommends that reporting occur over the long term to capture results that require longer timeframes. This may require that there be a standardized reporting interval and a mechanism to ensure reporting responsibilities are recognized and maintained as personnel leave or assume different job duties within an agency.

3. Information Technology Needs

3.1 Overview of Information Technology (IT) Needs and Issues

Through report language in SWG appropriations, Congress has specifically instructed the US Fish and Wildlife Service to work with states to adopt common mapping, data, and measurement standards to facilitate national evaluation and reporting. In order to track and report on the effectiveness of SWG-funded conservation actions, appropriate data needs to be collected and aggregated from state and national level databases.

Databases will need to track results from specific management *actions* undertaken as part of individual *projects* and/or *grants*, as well as provide a consistent means for reporting these data at a local, regional, state, or national level in a meaningful way. For example, a state agency may be interested in tracking the effectiveness of its land protection actions to improve the status of SGCN by tracking the number of priority acres placed under easement, while at a national level the USFWS may be interested in learning what percentage of priority acres, in all states, have been protected using State Wildlife Grant funding. If each state were recording both total acres targeted and total acres protected in a similar manner in an accessible database, this information could be 'rolled-up' across states to capture information on SWG effectiveness at regional or national scales. The effectiveness data that should be captured and aggregated will need to include both quantitative indicators (e.g., number of acres protected, population estimates, financial records) as well as more qualitative assessments (e.g., a story or project narrative) that can meet the needs of different audiences.

Federal, state, and tribal agencies as well as national and regional conservation organizations have developed a variety of databases and other related Information Technology (IT) tools that support at least some of the data collection and storage needs for tracking and reporting on the effectiveness of conservation actions. At the start of the Working Group's efforts in late 2009, however, no single database existed that would enable states to meet all of the IT needs to support the framework for measuring the effectiveness of conservation actions outlined in previous sections of this report. To this end, the Working Group reviewed the existing IT tools and provided guidance as to how states might select the tools that would make most sense for their overall IT needs, focusing in particular on databases that can aggregate, store, and manage information about wildlife conservation and management actions. The Working Group established criteria for the ideal database, reviewed how each candidate database performed against these criteria, and then developed recommendations about how states can work both individually and within larger partnerships to develop and deploy the best set of tools for their state's needs.

Over the past year, it has become apparent that the Wildlife TRACS system being developed by the USFWS specifically for SWG is the obvious system to use to support the effectiveness measures being proposed in this report. The USFWS and the Project Advisory Group have been supportive of the Working Group and are looking for its guidance on how to incorporate effectiveness measures into the TRACS system. It will be important for AFWA and members of the Working Group who are involved in the development of TRACS to continue providing that guidance and support during the development of TRACS.

3.2 Evaluation of Existing IT Tools

Three fundamental principles guided our efforts to develop criteria and evaluate existing IT tools:

- There is a core set of data fields and functions that characterize the ideal database for assessing the effectiveness of wildlife conservation and management actions.

- There are many existing databases that already perform some of the required tasks, but none currently meet all the characteristics of a database for tracking the effectiveness of wildlife conservation and management actions.
- The most cost-effective approach for tracking the effectiveness of actions will be to use a suite of tools, taking advantage of their existing strengths, and to cooperate in advancing the interoperability and functionality of these tools to create a robust network that easily shares data and reduces the need for redundant data entry.

Characteristics of the Ideal Database

The Working Group developed criteria for the ideal database through an iterative process. Our starting point was the NEAFWA Performance Monitoring Framework, *Appendix 10: Proposed Data Fields for Strategy Effectiveness Database*. These were then refined based on the needs and priorities that emerged from the Working Group. A full set of the criteria recommended by this working group can be found in Appendix V of this report.

The five types of criteria used to evaluate the existing databases include:

Key data fields that cover the range of information required to report on the effectiveness of wildlife conservation and management actions (e.g., actions, projects, conservation targets, viability, threats/stressors, work plan tools, budget tools, and project status).
Spatial data characteristics that are important for conveying mapped information (e.g., capability for spatial analysis, base maps, spatial import/export capability, and graphical diagrams such as results chains).
System design and administration characteristics (e.g., ease of use, privacy control, user access control, data quality control, and data import/export).
Business model characteristics (e.g., licensing structure, hosting model, and number of states currently using the system).
Use of standard structures and terms common within the conservation community (e.g., standard taxonomies for plants and animals, and standards adopted by the Conservation Measures Partnership).

Existing Data Management Tools

The Working Group reviewed eight existing or emerging data management tools most widely used by states or their conservation partners. This list is a subset of the many tools currently in use. In particular, several state agencies have implemented state-specific data management tools that are not covered here. However, one of the Working Group's desired outcomes is for more states to adopt common tools, or to design their own systems for full interoperability and data sharing. Thus, by highlighting tools in use across multiple states, the Working Group hopes to encourage their future adoption by others, or alternatively, the development of state-specific tools that are explicitly designed to be fully interoperable with multi-state norms.

This section summarizes the purpose of each data management tool and the strengths of each for measuring effectiveness of wildlife conservation and management actions. Additional information about the strengths and weaknesses of each tool relative to the characteristics of the ideal database can be found in Appendix V.

A key way in which data management tools differ is in their units of analysis – what constitutes a record or row in the database. For instance, some are organized around species or ecosystems. Others are organized to track projects, actions, or specific grants. In general, data management tools that focus on projects and actions are the most appropriate for evaluating and reporting on the effectiveness of conservation actions. But tools that have species or habitats as their main unit of information provide an essential link between project databases and the impact of all cumulative actions on the status of the species of greatest conservation need and their habitats.

The data management tools reviewed also represent the trade-offs inherent between power and simplicity. On the one hand, there are tools that are very easy to use. They are designed to be intuitive and useful to the lay person without any training. These tools are particularly suited to being implemented by large numbers of people who may use the system intermittently. But the focus on simplicity does impose constraints on the user's ability to customize the inputs, outputs, and the user interface. Other tools are very powerful, offering the ability to manage complex spatial data sets and relationships between information elements, as well as a high degree of user flexibility for reporting and analysis. The consequence of this complexity is that these tools require users to have more expertise and training, and sometimes even require specialists to operate them, thus limiting the range of people who can have direct access to the source information.

Finally, it is worth noting that this assessment of existing data management tools generally focuses on their current capabilities. Yet all of these are "living systems" that continuously evolve to meet emerging needs in their intended user communities, and all aspire to be useful to state fish and wildlife agencies working to implement their SWAPs. The developers of the Conservation Registry, Miradi, Wildlife TRACS, and Biotics/NatureServe Explorer, in particular, have been deeply engaged with AFWA to keep abreast of state requirements and plan for future enhancements.

Database Systems that Use Projects as the Main Unit of Analysis
(Tools are listed in alphabetical order. Full descriptions of each tool are included in Appendix V.)

- **ConPro** (conpro.tnc.org) – ConPro is an online database originally developed by the Nature Conservancy to track its conservation projects. ConPro is working with the Conservation Measures Partnership and Miradi to open up the system to non-TNC users. This will include the ability for states to create custom portals for tracking conservation projects, as well as the ability to set granular data access controls.
- **Conservation Registry** (www.conservationregistry.org) – The Registry is an online application that states can use to share information and knowledge including text that describes each conservation project, the actions associated with the project, the status of the actions (e.g., "in progress"), and supplement the data with hot links and reference materials. The tool is maintained by Defenders of Wildlife (www.defenders.org), and there are no limitations on who can use the Registry.
- **HabITS** – HabITS is a centrally-hosted, geo-spatial database for the USFWS Partners for Fish and Wildlife and Coastal Programs to track agreements, projects, and sites. HabITS also includes work plan and budgeting tools that track staff days and financial contributions. At this time, access to the system is limited to the Partners for Fish and Wildlife Program with a high level of privacy protection, but some level of public access is being considered for the future. HabITS will likely form a core of the emerging Wildlife TRACS system.
- **Miradi** (www.miradi.org) – Miradi is a project management, desktop software application designed to help program managers organize and track project activity through conceptual models and results chains (for example, all of the results chains diagrams in this report were produced using Miradi). Among all the software evaluated, Miradi has the most highly developed set of tools for documenting and tracking indicators of project performance. It does not include spatial GIS data, but that is a planned enhancement for the future.
- **Wildlife TRACS** (www.fws.ekosystem.us) – Wildlife TRACS is a new, online database under development by the USFWS and piloted by the Washington Department of Fish and Wildlife. Wildlife TRACS is the only data management tool that is explicitly being designed to facilitate WSFR/USFWS tracking and reporting on federal assistance grants, including SWG. The design team includes representatives from state fish and wildlife agencies, AFWA, and many of the organizations that maintain the other data management tools listed here

(Conservation Registry, HabITS, Miradi, Biotics). It's anticipated that there will be some degree of interoperability among these systems.

Other Important Systems

- **Biotics 4** (www.natureserve.org/prodServices/biotics.jsp) – Biotics 4 is a desktop application designed to integrate into the workflow of state natural resource agencies. By using national standards to track changes in the status of conservation targets (species or ecosystems), Biotics fulfills a critical long-term requirement for measuring effectiveness. The system is currently deployed in 46 US states and Puerto Rico, as well as Canada and Latin America. The remaining states all use fully compatible and interoperable systems.
- **DataBasin** (http://databasin.org) – This is an online tool for sharing and visualizing spatial data. DataBasin's larger objective is to create a vibrant, online community of conservation practitioners who self-organize into interest groups that share and improve spatial data. Although DataBasin is not currently set up to deliver data via web services, it should be a valuable source of quality spatial data that states can integrate into their SWAP analyses.
- **NatureServe Explorer Web Service** (http://services.natureserve.org/index.jsp) – This tool provides free and open access to virtually all of the data maintained in the Biotics 4 data system, except for sensitive spatial data. This web service provides direct access to data on the status, distribution, range, taxonomy (including synonyms), habitat preferences, threats, and management needs of over 53,000 species of the United States for incorporation into state-based data systems or other tools such as Wildlife TRACS.

Creating a Robust "IT Ecosystem"

As stated above, no single database currently exists that would enable states to meet all of the IT needs to support the framework for measuring the effectiveness of conservation actions outlined in previous sections of this report. Instead, there is an "IT Ecosystem" in which multiple databases and other tools fill different niches required by diverse agencies and organizations. The key is to ensure that the various components fit and link together to create a robust overall IT Ecosystem. In particular, we need to make sure that these different tools seamlessly hand-off information to one another. For example, projects that are managed locally in Miradi Software might then automatically upload their information to Wildlife TRACS, ConPro, or the Conservation Registry. These databases could then also pull in information about conservation targets from Biotics, and perhaps threat information from a map layer within Data Basin. They could then also export this information to www.grants.gov. There are many social, economic, and logistical issues that will need to be overcome in order to realize this vision and advance the conservation and stewardship of our fish and wildlife heritage, but the vision is technically feasible and will reduce costs and workload in the future.

3.3 Considerations for IT Needs

Effective tracking and reporting of conservation actions will depend on the continued role of states in measuring SWG effectiveness and developing appropriate IT tools as described in this report. The Working Group suggested that the following be considerations be made in the context of IT system development:

- **Use common mapping, data, and measurement standards wherever possible.** Each state has its own unique requirements that drive its information technology needs. However, to facilitate data sharing and roll-up of effectiveness measures as requested by Congress, states with existing IT systems should incorporate standard data structures and terms into their own systems. States needing to develop new systems should consider adopting one or more of the tools described in this report that meet these standards. In particular, states should consider working with and adopting Wildlife TRACS as it becomes available.

- **Work with the US Fish and Wildlife Service to ensure that Wildlife TRACS can collect and share effectiveness measures as outlined in this report.** The fish and wildlife conservation community has a unique opportunity to promote and influence the development of Wildlife TRACS to support effectiveness measures collection, data integration from existing tools, and reporting to meet various audiences' needs. Members of the Working Group should continue to collaborate with the US Fish and Wildlife Service and its contractors to ensure that Wildlife TRACS meets the data collection and sharing needs articulated in this report. In addition, states should directly give input into the design of Wildlife TRACS, and address gaps in compatibility to make their current data systems interoperable with Wildlife TRACS.
- **Participate in development of IT systems that share data via linked networks.** To meet all of the IT requirements for tracking and reporting the effectiveness measures framework outlined in this report while minimizing redundant data entry, state fish and wildlife agencies should:
    - Establish data management practices that encourage participation in data sharing networks,
    - Support active participation of their information managers in groups that promote interoperability such as the Organization of Fish and Wildlife Information Managers (OFWIM), the Conservation Measures Partnership, and the state natural heritage data network, and
    - Collaborate with developers of relevant tools such as Wildlife TRACS, Biotics, Miradi, and the Conservation Registry to ensure that their tools meet state needs.

Longear sunfish/ Scott Wells

4. Extending the Framework to Assess Overall SWAP Effectiveness

4.1 Assessing Overall SWAP Effectiveness

When the State Wildlife Grants program was created, Congress required that eight elements be addressed within each Wildlife Action Plan. States used a variety of tools and techniques in drafting their SWAPs, and the plans represent 56 different approaches to meeting a state's conservation priorities. As 2015 approaches, when all SWAPS must be updated, it seems an opportune time to assess the SWAPs to determine which aspects of the plans have been most effective at preventing species from becoming endangered. Such an effort could provide action plan coordinators and agency personnel with valuable insights. It would also provide Congress and the US Fish and Wildlife Service with data to help ensure these plans continue to be relevant.

As is the case with any evaluation or assessment, the methods that could be used to undertake this work vary in terms of their precision and cost. Depending on the audience and budget, this assessment could be done as a rapid self-assessment by one or more states or USFWS. Alternatively, it could be done as an extensive external third-party evaluation on behalf of one or more of the above groups. In all cases, however, the assessment would require laying out the core theory of change behind SWAPs as well as the indicators that could be used to assess whether this theory holds.

Although it was far beyond the charge of the Working Group to complete or even start such an assessment, the group did lay out the basic theory of change behind SWAPs and present some options for how such an assessment might be done. It will be up to AFWA, the states, and the USFWS to determine if and how these recommendations might be carried forward.

4.2 Proposed Results Chain and Indicators for Assessing SWAP Effectiveness

As outlined in the previous sections of this report, the basic approach for assessing the effectiveness of a given action involves laying out the theory of change in a results chain, and then determining the appropriate effectiveness indicators to monitor. This methodology can be extended to assess SWAP effectiveness by treating the development and implementation of SWAPs as one comprehensive action.

As shown on the right hand side of Figure 8, the ultimate goal of SWAPs is to improve the conservation of wildlife and their habitats in the 56 states and territories. To achieve this ultimate goal, SWAPs are designed to improve the capacity of state wildlife agencies and their partners to take action to restore degraded species populations and habitats and to counter threats to wildlife. One main pathway (Path A) by which the SWAPs lead to better conservation is through increased funding available for conservation work through SWG and other sources of funds. Based solely on this pathway, the net impact of the SWAP program is the "sum of the effectiveness" of these funded actions.

Increased funding is not, however, the sole path by which SWAPs can improve conservation in states. Perhaps the simplest is Path B, which assumes that if states implement SWAPs, they will be able to be more strategic in the actions they take and fund to support wildlife conservation. Under Path C, as they implement their SWAPs, they improve the policy environment which in turn creates more funding for conservation work. Following Path D, SWAPs also enable states to better coordinate the work done by other state agencies and other actors – for example, ensuring that roads built by transportation departments take into account wildlife needs. And finally, following Path E, SWAPs enable the development of more effective coalitions of agencies and organizations, thus enhancing the ability to do better conservation.

Figure 8. Overall Results Chain and Indicators for State Wildlife Action Plan Effectiveness

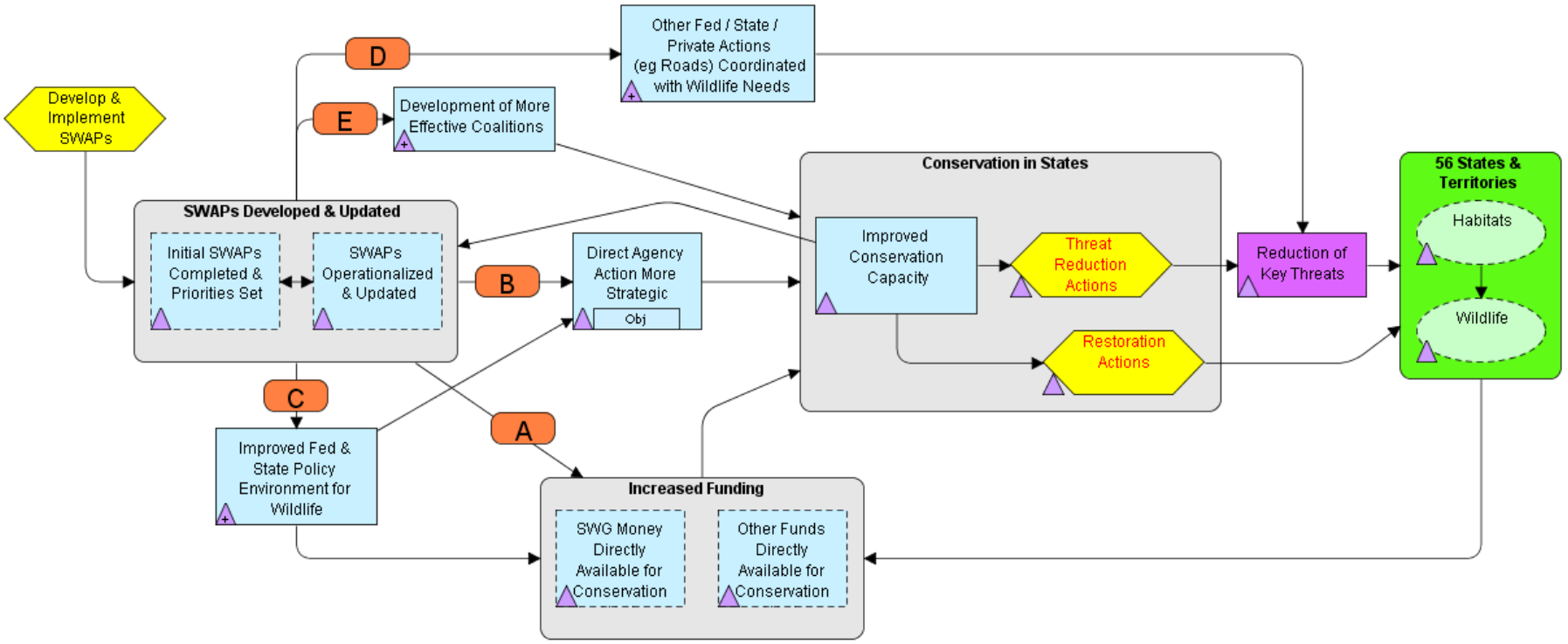


Table 2. Key Indicators for Results Chain in Figure 8

Measure	Objective	Details
1. # "good" plans completed	Initial SWAPs Completed & Priorities Set	Need to define criteria for "good"
2. Evidence that SWAPs are Living Docs	SWAPs Operationalized & Updated	- priorities and "battle plan" (1 = no prioritization; 4 = very clear priorities) - folks refer to it in the state / incorporated into and reported on other plans - measures being collected and used
A1. Amt of SWG $$ (absolute and change)	SWG Money Directly Available for Conservation Work	
A2. $$ Available (total and change)	Other Funds Directly Available for Conservation Work	
B1. Evidence that work plans support SWAP priorities	Direct Agency Action More Strategic	Sample agency and organizational work plans in relation to SWAP priorities.
C1. Evidence of changes in Policies and Procedures and Regulations	Improved Fed & State Policy Environment for Wildlife	
C2. Improved Leadership Buy in	Improved Fed & State Policy Environment for Wildlife	
D1. % of other agency activities that "contravene" SWAP priorities	Other Fed / State / Private Actions Coordinated with Wildlife Needs	- Dept 1 (e.g., Transportation) - Dept 2 (e.g., Urban Planning)
D2. Assessment of "cooperation" by other agencies	Other Fed / State / Private Actions Coordinated with Wildlife Needs	Do agencies at least consult with SWAP before road building? Are SWAPs cited in development plans or EIAs?
E1. #s of new coalitions or coalitions that cite SWAPs	Development of More Effective Coalitions	
E2. Evidence as aggregation device...	Development of More Effective Coalitions	Are SWAPs an aggregation device for NGOs and agencies to work together???
E3. Evidence that SWAPS feeding into NGO work	Development of More Effective Coalitions	
F1. Capacity of Conservation Actors	Improved Conservation Capacity	
F2. # of / $'s Spent on Different Actions	Threat Reduction Actions	
F3. # of / $'s Spent on Different Restoration	Restoration Actions	
F4. Threat Status	Reduction of Key Threats	
F5. Habitat Conservation	Habitats	
F6. Wildlife Conservation	Wildlife	

Based on this chain, there are a number of indicators that could be collected to assess progress. For example, along Path B, an evaluator might assess a sample of state projects to see what percentage conforms to SWAP. Obviously, this work would have to take into account the differing level of investment that states have for their work. Table 2 lists key indicators that could potentially be used to track progress along each of these paths.

4.3 Recommendations for Assessing Overall SWAP Effectiveness

As stated previously, it is beyond the charge of this Working Group to decide whether AFWA, WSFR, or other key players should undertake an evaluation of the effectiveness of SWAPs. However, we do make the following recommendation:

- **Form a Working Group to Assess and Recommend Improvements for SWAPs.** To ensure State Wildlife Action Plans remain relevant and effective, a Working Group should be convened in the future to identify best practices and to make recommendations on improving the plans. The Working Group should complete its work prior to the 10-year anniversary of the plans in 2015.

5. Summary Recommendations and Proposed Next Steps

5.1 Summary of Working Group Recommendations

The Working Group recommends that the TWW Committee adopt the following recommendations:

- **Approve the Proposed Effectiveness Measures Framework for SWG.** The framework and effectiveness measures described in this report are the result of more than a thousand hours of labor by the Working Group, state fish and wildlife agency staff, and others during the last 18 months. Initial draft measures were tested by nine pilot states, reviewed by State Wildlife Action Plan Coordinators, and distributed for review to states and partners. Drafts of the measures were also made available for review by the Office of Management and Budget and congressional appropriations staff. The resulting measures represent the best collective thinking on effectiveness measures that should stand the test of time and have applicability beyond SWG.
- **Integrate SWG Effectiveness Measures into the USFWS Wildlife TRACS Reporting and Tracking Tool.** The USFWS began work on a new reporting and data tracking system concurrent with the effectiveness measures project. Wildlife TRACS is being designed to make full use of the effectiveness measures developed by the Working Group and after an evaluation of potential information technology systems, TRACS was deemed the best system available to track and report on effectiveness of SWG, as outlined in this report.
- **Explore Options for Integrating Effectiveness Measures into the Grant Application and Reporting Process.** The Wildlife TRACS Project Advisory Group is exploring ways to streamline the grant making and reporting process for SWG. To ensure that the framework can be successfully implemented, it is important that data collection and reporting not add substantially to existing grant making and reporting processes. Consideration should be given as to how best to incorporate effectiveness measures into these processes to ensure the utmost efficiency in data collection and reporting.
- **Form a Working Group to Assess and Recommend Improvements for SWAPs.** To ensure State Wildlife Action Plans remain relevant and effective, a Working Group should be convened in the future to identify best practices and to make recommendations on improving the plans. The Working Group should complete its work prior to the 10-year anniversary of the plans in 2015.

5.2 Proposed Next Steps

If the recommendations in this report are approved, then the Working Group proposes the following steps be taken.

- **Continue Coordinating with USFWS on Development of Wildlife TRACS.** Members of the Working Group who are also members of the Wildlife TRACS Project Advisory Group will continue working to develop the Wildlife TRACS reporting tool to ensure the effectiveness measures framework can be integrated into this system. They will also work to make changes to federal grant making processes to facilitate the efficient collection and reporting of effectiveness measures data.
- **Conduct Communication & Outreach Efforts.** Although the Working Group regularly communicated with the TWW Committee, agency directors, action plan coordinators and others, outreach will need to continue throughout the implementation of the framework. Outreach will be conducted principally by AFWA and by the USFWS as part of communication related to Wildlife TRACS.

- **Develop Training Materials and Coaches.** Based on the pilot test, there is a need for training to raise awareness and knowledge about results chains and effectiveness measures as they relate to the overall project cycles. AFWA and its partners should consider potential collaboration with ongoing related training efforts through the National Conservation Training Center and the Conservation Measures Partnership.

APPENDIX I. COMMON GENERIC CONSERVATION ACTIONS FUNDED BY SWG

The following 11 generic conservation actions were identified by the Working Group as most commonly funded by SWG. In addition, the list contains two additional actions that are often taken as components of other actions. This list was developed by first reviewing State Wildlife Action Plans and SWG performance reports to develop an initial list of commonly-mentioned actions. To provide a standard structure, the group then categorized and synthesized these actions following the IUCN-Conservation Measures Partnership's Standard Classification of Conservation Actions (IUCN-CMP 2008). States and USFWS's WSFR Program provided additional input to further refine the list. The list is **not** meant to be exhaustive, but rather represents the most common actions and will likely need to be added to over time.

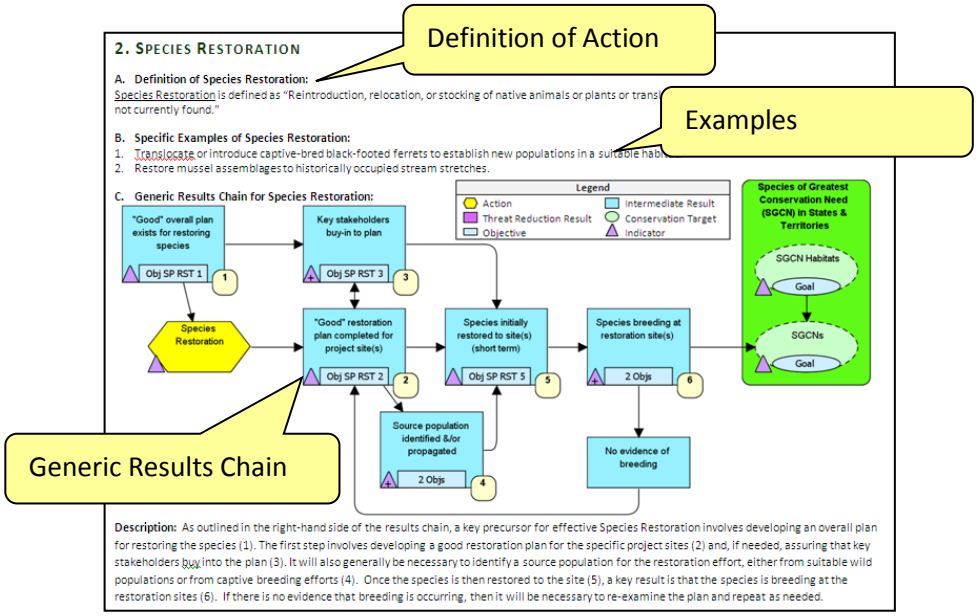
Conservation Action	Draft Definition	Examples
1. Direct management of natural resources	Stewardship of terrestrial and aquatic species, habitats and/or natural processes to maintain populations or restore ecological functions.	• Conduct controlled burns • Manage invasive species • Remove dams and other barriers
2. Species restoration	Reintroduction, relocation, stocking of native animals or plants, or translocation of animals to an area where they are not currently found.	• Translocate/breed in captivity Black-footed Ferrets to establish new populations in suitable habitat • Restore mussel assemblages to historically occupied stream stretches
3. Creation of new habitat	The creation or establishment of *new* habitats, including necessary natural processes, habitat structures, and biotic components to mitigate loss of ecological functions elsewhere.	• Establish prairie communities where crop land currently exists • The creation of new breeding habitat for Gopher Frog reintroduction and due to a climate adaptation strategy and recovery plan
4. Acquisition / Easement / Lease	Protection of land or water real property or rights through fee title acquisition, permanent easement, lease, contract, or a related means.	• Purchase land in a corridor connecting a Wildlife Management Area and a National Wildlife Refuge • A perpetual easement restricting land conversion and development is placed on a remnant tall grass prairie • A 20-year term contract is placed on a privately-owned Pennsylvania wet meadow for protection and recovery of the Bog Turtle
5. Conservation area designation	Designation of a site or landscape as having unique and important value to wildlife with or without legal protections.	• Designate an area as an Important Bird Area • Designate an area as an Important Reptile/Amphibian Area • Add an area to a State Natural Area Registry

Conservation Action	Draft Definition	Examples
6. Environmental review	Review of agency and private sector policies, projects, and plans (primarily related to development and potential adverse impacts to natural resources) to help ensure potential impacts to fish and wildlife are avoided, minimized and/or compensated/mitigated.	• Review of proposed new landfill siting alternatives to recommend which alternative(s) will least impact natural resources immediately (direct) and over time (indirect, cumulative), and where mitigation activities and dollars would be best spent to compensate for unavoidable resource impacts • Review new highway route alternatives and make recommendations for resource protection from planning through implementation • Review of new road salt application policy to ensure timing, periodicity, and intensity to avoid or limit potential impacts to natural resources
7. Management planning	Development of management plans for species, habitats, and natural processes.	• Develop a management plan for migration corridors • Develop a management plan for Longleaf Pine habitat • Develop a management plan for endangered mussels
8. Land use planning	Leading or participating in land use planning for rural, urban, or agricultural lands.	• Develop county-wide zoning plans • Participate in workgroup regarding low impact development siting • Develop city plan for implementing best management practices for stormwater management
9. Training & technical assistance	Training is defined as "Skills development for professionals, key stakeholders, or others to facilitate needed management activities and techniques." It does not include training that is minor or a routine component of implementing another action. It does include certification or apprenticeship models. It is not the same as information delivery (e.g., education or outreach), although training could lead to an education or outreach conservation action for threat reduction. Technical Assistance (TA) is defined as "Tangible, practical support (e.g., skills, knowledge, recommendations) delivered by experts to professionals or key stakeholders for the purpose of helping them implement specific conservation actions."	• Provide training for agency staff in reptile and amphibian assessment techniques • Provide classroom training in elements of prescribed fire qualifications (e.g., planning, tool familiarity, weather) to resource professionals who will eventually take "next steps" to become site-based Fire Operators and leaders (e.g., Crew Leaders, Burn Bosses) • Provide qualified prescribed fire operators with "apprenticeship" in field skills (e.g., leading crews, ignition, fire management, safety and emergency response) leading toward Fire Leader (Burn Boss) certification or qualification • Provide technical assistance in successful techniques to assess (e.g., field surveys, boundary document reading, conservation value rapid assessment), write successful terms and conditions, and monitor (timeframes, techniques, etc.) a conservation easement • Provide technical assistance in the form of one-on-one engineering consultation for dam removal

Conservation Action	Draft Definition	Examples
10. Data collection & analysis	Collecting data about species and habitats and the threats to them to fill information needs; includes compilation, management, synthesis, analysis, and reporting of spatial and nonspatial data.	• Gather data on the Shenandoah salamander to define current distribution, survey methodologies and understand habitat use, and threats • Conduct surveys & genetic assessments of three North American minnow SGCNs to determine baseline population data to assist in the establishment of conservation units
11.Education	Actions or efforts to increase knowledge or understanding and encourage practices in support of SGCN conservation through instruction or distribution of materials or to provide general information in response to inquiries from the public or partners about SGCN conservation programs, actions, or activities. Includes both formal (e.g., classroom) and non-formal education efforts.	• Implement a timber rattlesnake educational program that includes developing educational materials, conducting workshops on conservation efforts, and conducting habitat management demonstration tours to NGO's interested in implementing timber rattlesnake conservation projects • Conduct outreach to landowners to implement land management practices to benefit species • Providing decision makers with data about pollution impacts on at-risk aquatic species to help them set water quality standards for key water bodies
A. Incentives	Development and delivery of economic incentives to private landowners to influence responsible stewardship of land/water and specific species.	• Tax breaks • Stewardship payments to landowners (doing the right thing, continue to do the right thing) • Management infrastructure & practices incentives (e.g., $ to build a fence, infrastructure, delay hayfield) • Restoration incentives (e.g., $ to restore wetland) • Regulatory streamlining • Technical assistance
B. Stakeholder Involvement	Engaging state and federal agencies, tribal entities, the NGO community and other partners to achieve shared objectives and broader coordination across overlapping areas.	• Establish decision-making processes with state agencies • Outreach with tribal governments • Convene an advisory committee to assist with implementation of a State Wildlife Action Plan

APPENDIX II. EFFECTIVENESS MEASURES FOR GENERIC ACTIONS

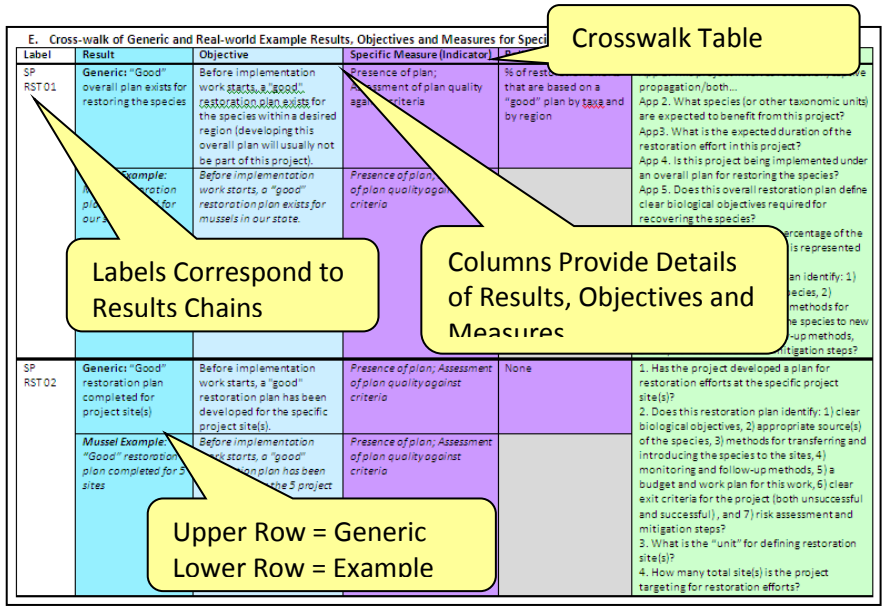
This appendix contains the bulk of the work completed by the Working Group. For each of the 11+2 actions defined in Appendix 1, we provide a ***definition of the action***, one or more ***examples***, "generic" and "example" ***results chains***, a "crosswalk table" that provides details for the ***results***, ***objectives***, and ***measures*** shown in each results chain, and a ***questionnaire*** that translates the measures into survey-type questions that could be integrated in application and reporting forms in Wildlife TRACS and other systems. For a few actions, we also provide ***mockups of graphics for final reports***.



Definition of Action

Examples

Generic Results Chain

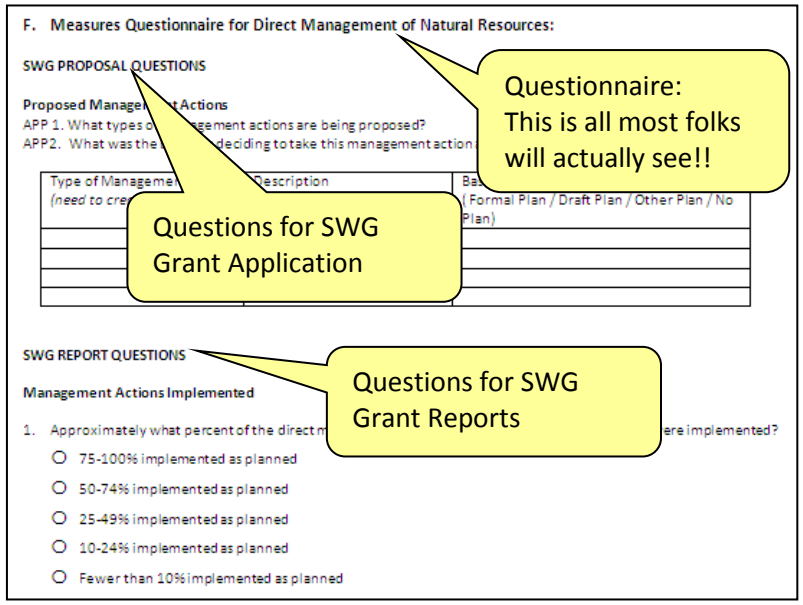


Crosswalk Table

Labels Correspond to Results Chains

Columns Provide Details of Results, Objectives and Measures

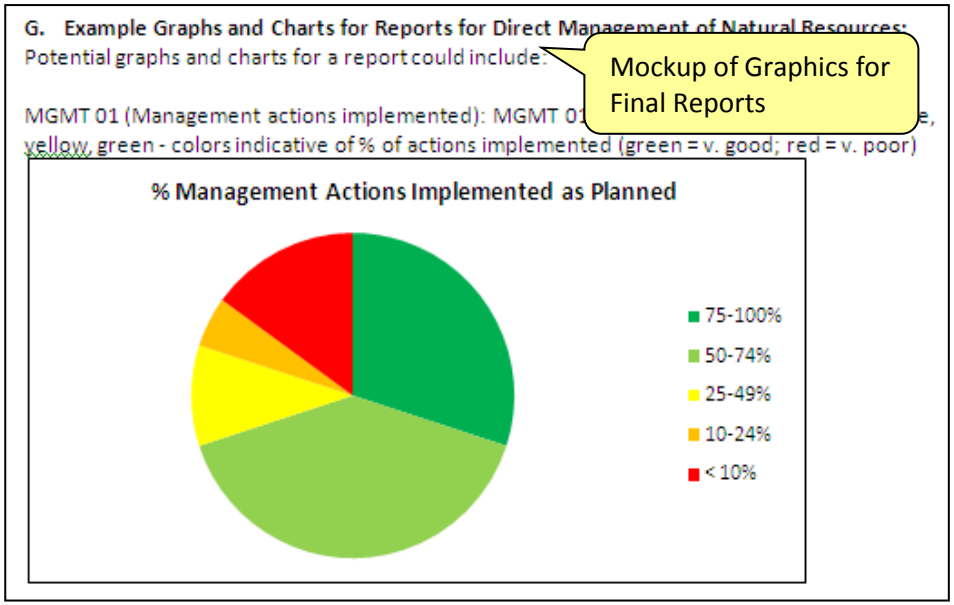
Upper Row = Generic
Lower Row = Example



Questionnaire: This is all most folks will actually see!!

Questions for SWG Grant Application

Questions for SWG Grant Reports



Mockup of Graphics for Final Reports

1. Direct Management of Natural Resources

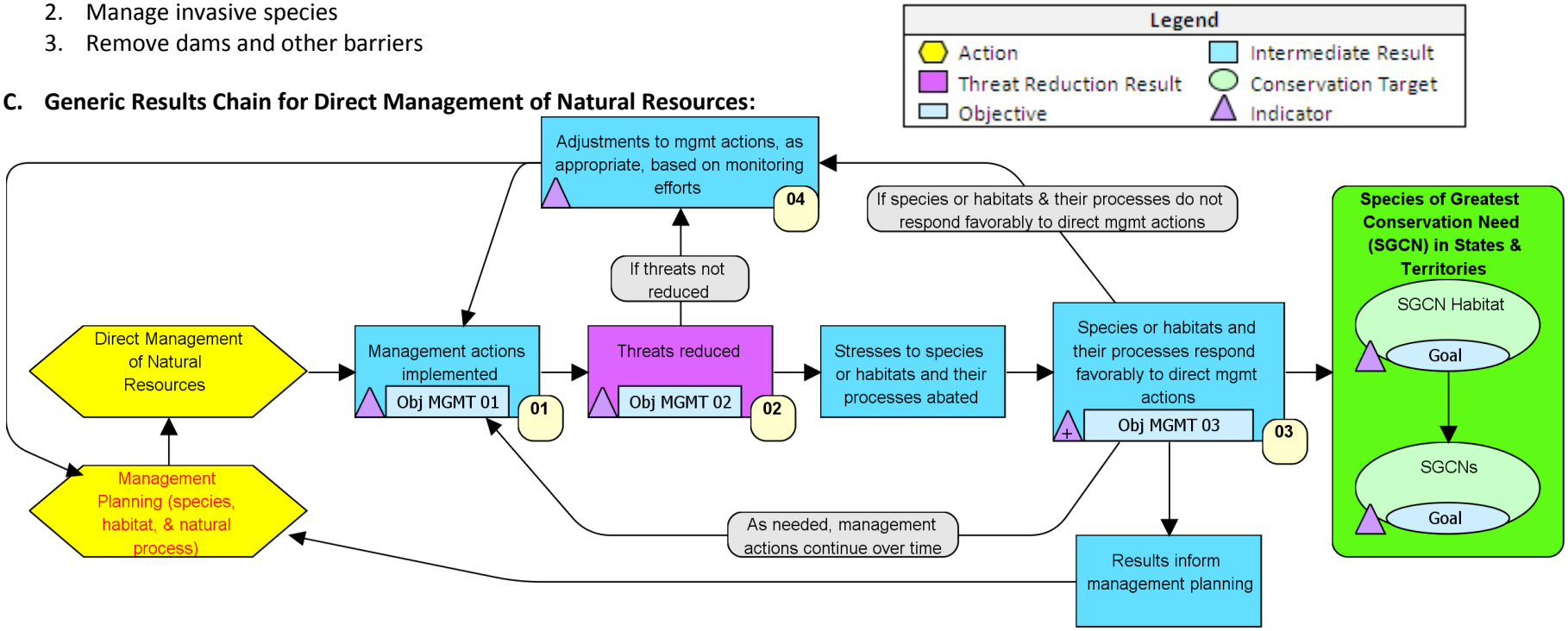
A. Definition of Direct Management of Natural Resources:

Direct Management of Natural Resources is defined as "Stewardship of terrestrial and aquatic species, habitats and/or natural processes to maintain populations or restore ecological functions." *Includes the restoration of degraded species and habitats that are at the site but not the reintroductions of species or creation of new habitat.*

B. Specific Examples of Direct Management of Natural Resources:

1. Conduct controlled burns
2. Manage invasive species
3. Remove dams and other barriers

C. Generic Results Chain for Direct Management of Natural Resources:

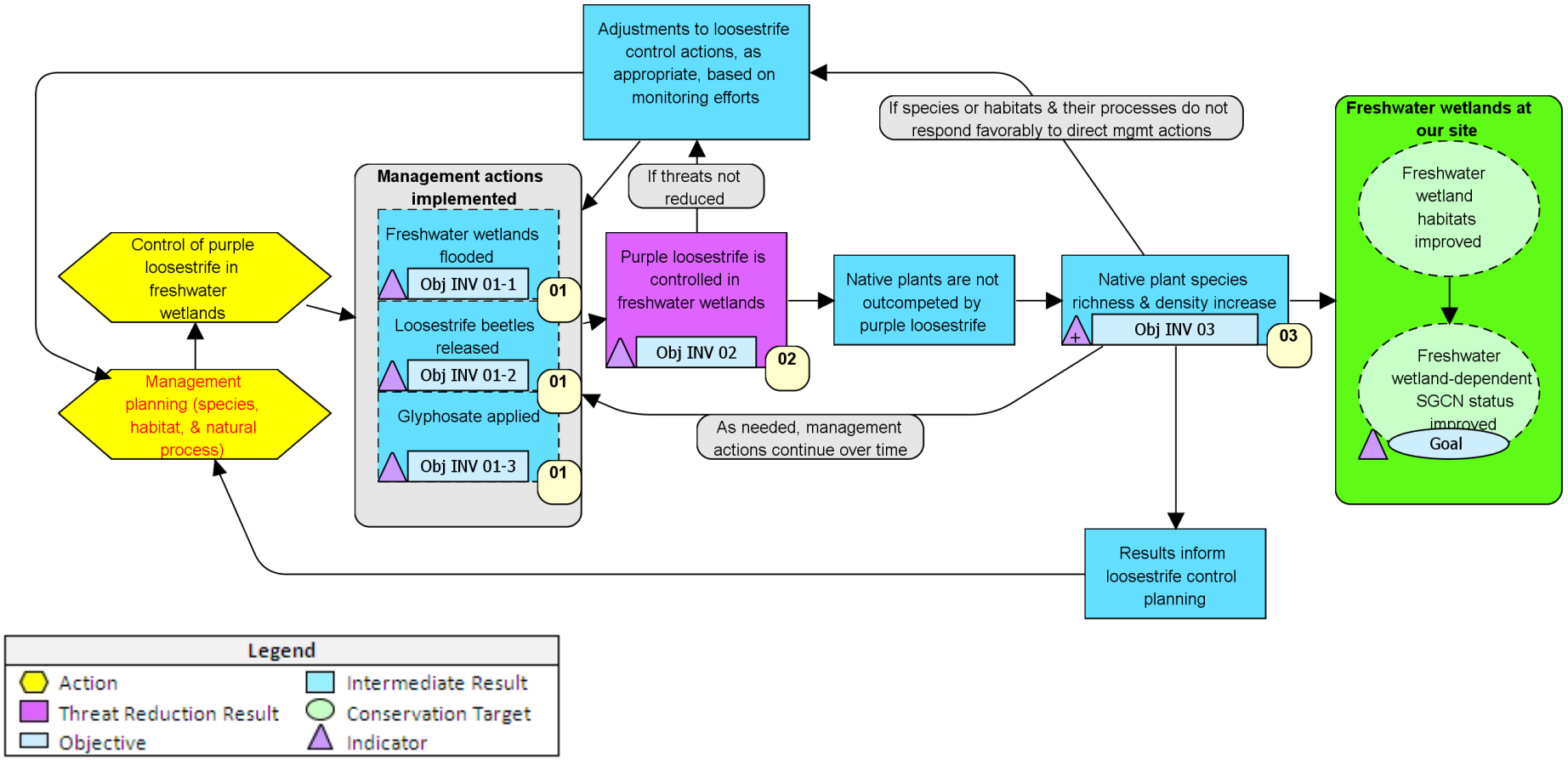


Description: Direct management is one of the most common and fundamental conservation actions used by states to manage species of greatest conservation need (SGCN) and their habitats. Before implementing a direct management action, it's assumed that a management plan has been completed (yellow hexagon in red text). That plan informs the direct management actions that should occur. Ideally, all management actions should be implemented, but that is not always possible. Part of the monitoring (see Cross-Walk table in Section E) of implementation includes identifying the percentage of management actions that are being implemented over a predetermined time span. Upon implementation of direct management (01), threats will either be reduced or not reduced (02). In the latter case, adjustments in the management action or in planning will be needed (04). If threats are reduced, then the stressors to species or their habitats/processes will be abated. If threats are reduced then the next expected result is that species

or habitats and their processes have responded favorably to the direct management action (03) (e.g., the degree to which the targets responded to management; the degree to which the targets responded as expected to management). At this point in the results chain, there are three potential pathways. If the targets (SGCN species/habitats/processes) respond favorably to direct management and are more secure, then there is no response requiring an adjustment in management (04), and lastly the results are used to inform future management. Finally, the chain also reflects that many management actions continue over time, so there would be a feedback loop between Result 03 and Result 01.

D. Example Results Chain for Direct Management of Natural Resources:

This fictitious example is based on a case of controlling invasive Purple Loosestrife plants in freshwater wetlands.



E. Cross-walk of Generic and Example Results, Objectives and Measures for Direct Management of Natural Resources:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
MGMT 01	**Generic:** Management actions implemented	Within X months/years of receiving funding, at least X% of mgmt actions are being implemented as planned	% mgmt actions implemented as planned	% of actions done by plan % initiatives that fall into each category of implementation status	APPLICATION APP1. What types of management actions are being proposed? APP2. What was the basis for deciding to take this management action at this site? REPORT 1. Approximately what percent of the direct management actions in the original grant application were implemented?
	Loosestrife Example: *Freshwater wetlands flooded*	*Within 1 year of receiving funding, 100% of wetlands targeted for flooding were flooded*	*% of wetlands targeted for flooding that were flooded*		
	Loosestrife Example: *Loosestrife beetles released*	*Within 2 years of receiving funding, at least 75% of freshwater wetlands targeted for loosestrife beetle release have established beetle populations*	*% of freshwater wetlands targeted for loosestrife beetle release that have established beetle populations*		
	Loosestrife Example: *Glyphosate applied*	*Within 1 year of receiving funding, at least 50% of freshwater wetlands targeted for chemical control have received glyphosate applications*	*% of freshwater wetlands targeted for chemical control that have received glyphosate applications*		
MGMT 02	**Generic:** Threats reduced	Within X years of the start of the action, the desired threat reduction is seen	Evidence that direct management action is reducing key threats	% of initiatives that show the expected reduction in key threats being addressed by direct management actions	2. What threat(s) were you hoping to address through the management action(s) and do you have evidence that the action(s) are leading toward reductions in any of these threats? 3. Additional comments or anecdotes (optional)
	Loosestrife Example: *Purple Loosestrife is controlled in freshwater wetlands*	*Within 3 years of receiving funding for the Purple Loosestrife control program, purple loosestrife stem density is decreased by at least 75% (as compared to 2011 levels) in targeted freshwater wetlands*	*Stem density of Purple Loosestrife*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
MGMT 03	**Generic:** Species or habitats/processes respond favorably	Within X months/years of implementing direct management actions, species or habitats and their processes respond as expected from direct management leading to fulfillment of stated objectives	a. Degree to which target SGCNs respond as expected from direct management actions b. Degree to which target habitats/processes respond as expected from direct management actions	a. % of initiatives in which target SGCNs at least partially benefit b. % of initiatives in which target habitats/processes at least partially benefit	4. Did you achieve your objectives regarding target SGCNs response to the direct management actions? 5. Did you achieve your objectives regarding target habitats/processes responses to the direct management actions? 6. Additional comments or anecdotes (optional)
	Loosestrife Example: *Native plant species richness & density increase*	*Within 3 years of implementing purple loosestrife control actions, native plant species richness increases by at least 15 species and density increases by at least 50%*	a. *# of species of native plants* b. *Stem density of native plants*		
MGMT 04	**Generic:** Adjustments to mgmt actions, as appropriate, based on monitoring efforts	Note: No objective or indicator because neither tell the reviewer if the team made the *right* choice. Important, however, to ask questions to help teams think about using monitoring results to adjust	N/A	N/A	7. What action (if any) did your project team take to address the fact that you were not seeing desired threat reduction or response in species or habitats/processes? Please explain your rationale for adjusting or abandoning your management actions. 8. Please provide any narratives, case studies, or additional comments you may have related to your work in direct management of natural resources (optional)
	Loosestrife Example: *Adjustments to loosestrife control actions, as appropriate, based on monitoring efforts*	*N/A*	*N/A*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	Goal: Within X years of the start of the action, the species of interests have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Loosestrife Example: *Freshwater wetland-dependent SGCN status improved*	*Goal:* Within 3 years of implementing Purple Loosestrife control actions, Bog Turtle populations are documented as stable or increasing in at least 40% of the targeted wetlands	Trend in Bog Turtle populations by freshwater wetland		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	Goal: Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Loosestrife Example: *Freshwater wetland habitats improved*	*None set because very similar to objective set for native plant species richness and density*	*N/A*		

F. Measures Questionnaire for Direct Management of Natural Resources:

SWG PROPOSAL QUESTIONS

Proposed Management Actions

APP 1. What types of management actions are being proposed?

APP2. What was the basis for deciding to take this management action at this site?

Type of Management Action *(need to create pick list)*	Description	Basis for Action (Formal Plan / Draft Plan / Other Plan / No Plan)

SWG REPORT QUESTIONS

Management Actions Implemented

1. Approximately what percent of the direct management actions in the original grant application were implemented?

   ○ 75-100% implemented as planned

   ○ 50-74% implemented as planned

   ○ 25-49% implemented as planned

   ○ 10-24% implemented as planned

   ○ Fewer than 10% implemented as planned

Type of Management Action *(populate from APP 1)*	**Description *(populate from APP 1)***	**% Completed**

Threat Reduction

2. What threat(s) were you hoping to address through the management action(s), and do you have evidence that the designation(s) are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org. *Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.*

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	

7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	
11 Climate Change & Severe Weather	☐	y/n/don't know	

3. Additional comments or anecdotes (optional)

Evidence of Expected Response

4. Did you achieve your objectives regarding target SGCNs response to the direct management actions?

   ○ Most or all SGCN responded to the desired level (comments, optional)

   ○ Most or all SGCN responded but not to the level desired (comments, optional)

   ○ Some SGCN responded fully or partially but not all responded (comments, optional)

   ○ SGCN did not respond as expected (please explain _____)

   ○ Don't know (please explain_____)

   ○ Not applicable (main focus of action was on habitats/processes)

Programming notes: Depending upon response, bring up an additional field for comments (optional) or please explain, as indicated above. For roll-up, SGCNs that at least partially benefit should fall into one of the first 3 categories.

5. Did you achieve your objectives regarding target habitats/processes responses to the direct management actions?

   ○ Most or all habitats/processes responded to the desired level (comments, optional)

   ○ Most or all habitats/processes responded but not to the level desired (comments, optional)

   ○ Some habitats/processes responded fully or partially but not all responded (comments, optional)

   ○ Habitats/processes did not respond as expected (please explain _____)

   ○ Don't know (please explain_____)

   ○ Not applicable (main focus of action was on SGCNs, not their habitats or processes)

Programming notes: Depending upon response, bring up an additional field for comments (optional) or please explain, as indicated above. For roll-up, habitats/processes that at least partially benefit should fall into one of the first 3 categories.

6. Additional comments or anecdotes (optional)

Adjustments to Actions

Programming note: Only show this question if answer to questions 4 and 5 were not the first or last option

7. What action (if any) did your project team take to address the fact that you were not seeing desired threat reduction or response in species or habitats/processes?

   ○ Adjusted our suite of management actions or implementation schedule

   ○ Abandoned the direct management action

   ○ Other (please specify _____)

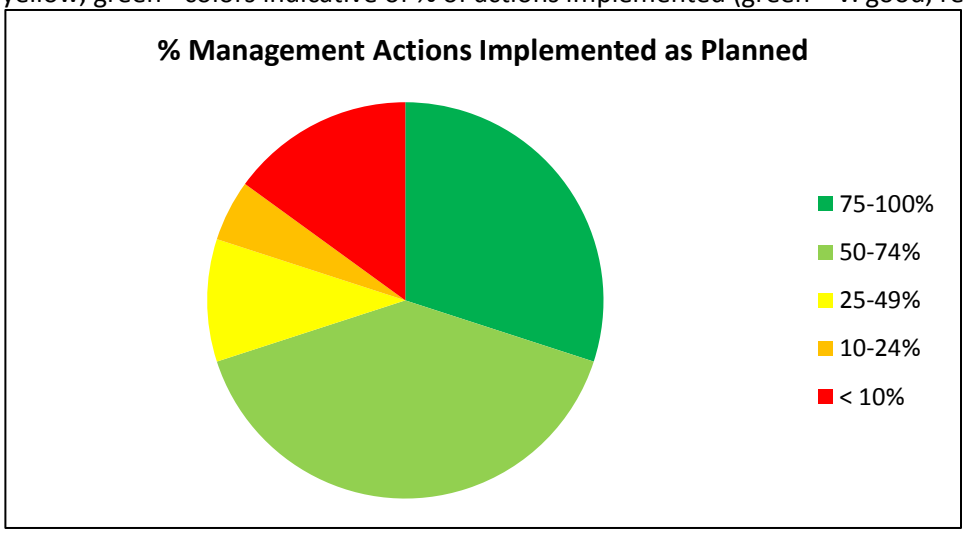
   Please explain your rationale for adjusting or abandoning your management actions:

Additional Information

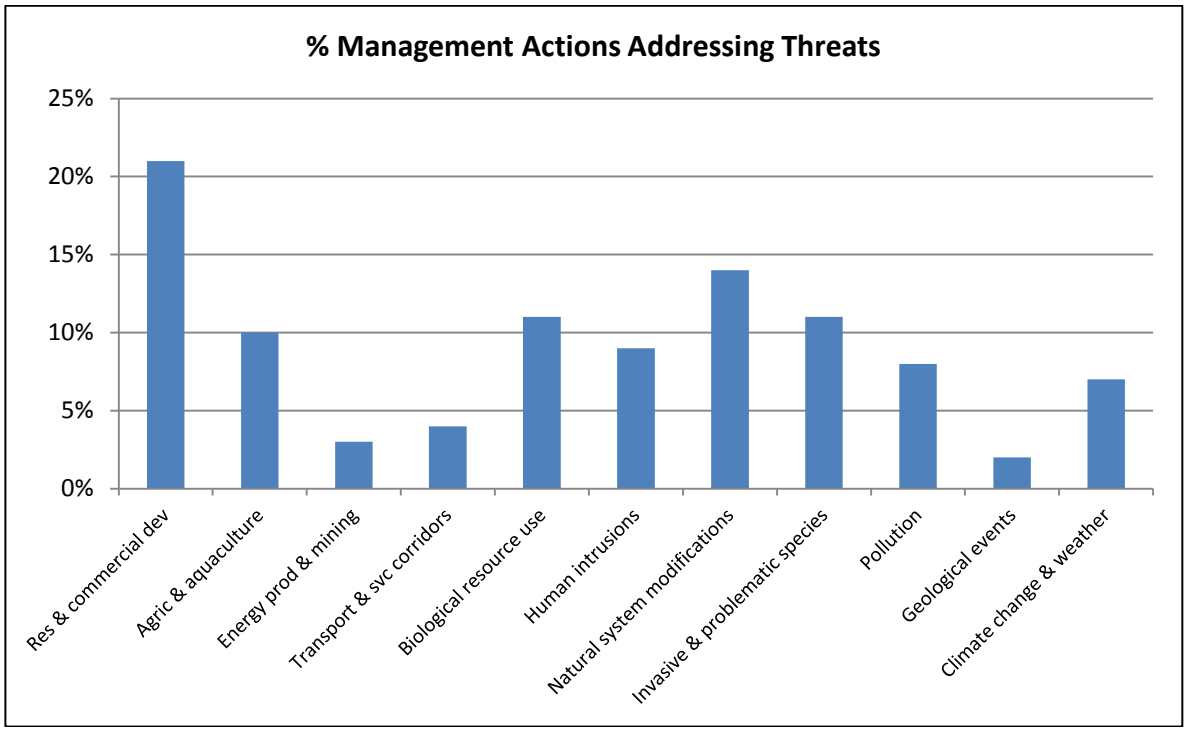
8. Please provide any narratives, case studies, or additional comments you may have related to your work in direct management of natural resources (optional)

G. Example Graphs and Charts for Reports for Direct Management of Natural Resources:
Potential graphs and charts for a report could include:

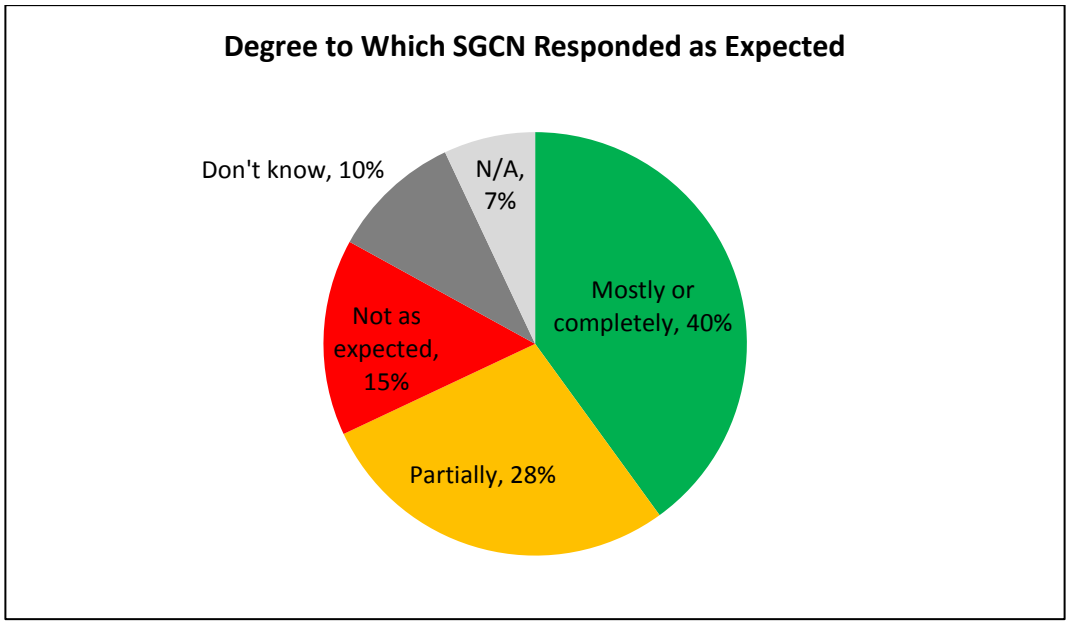
MGMT 01 (Management actions implemented): MGMT 01: Pie chart - colors with red, orange, yellow, green - colors indicative of % of actions implemented (green = v. good; red = v. poor)

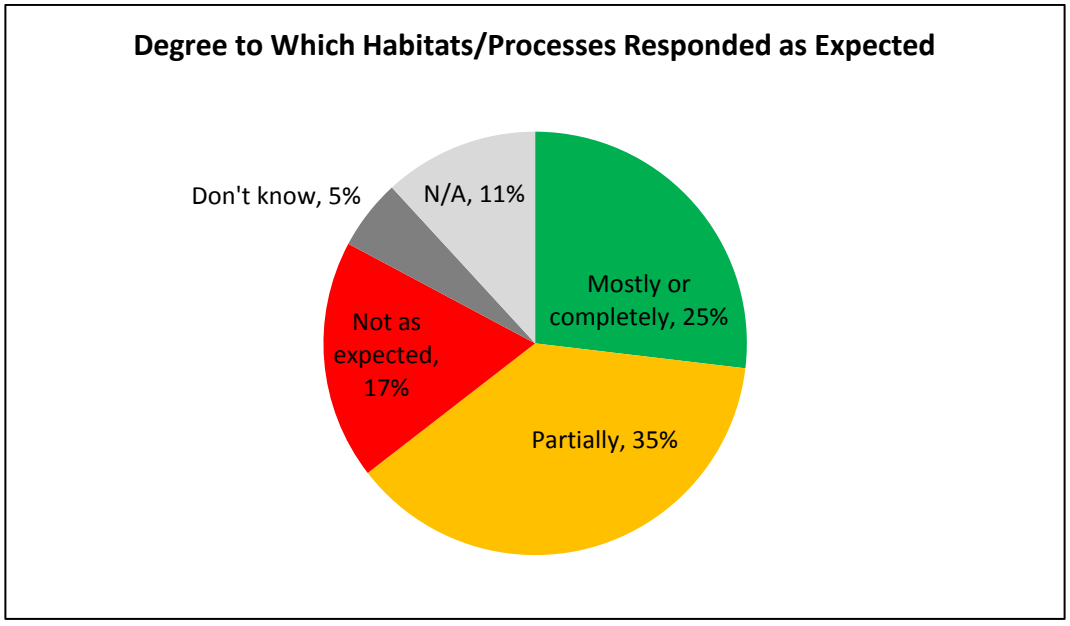


MGMT 02 (Threats reduced): Table or histogram with IUCN-CMP threat categories & # being addressed through mgmt actions, do not report on evidence of threat reduction. Note, this figure could also be shown as the total number of initiatives, rather than as percents within that total number.



MGMT 03 (Species or habitats and their processes respond favorably to direct management actions): Pie chart or histogram showing % of initiatives by benefit category (if pie chart, collapse the two partially benefits categories into one)





2. Species Restoration

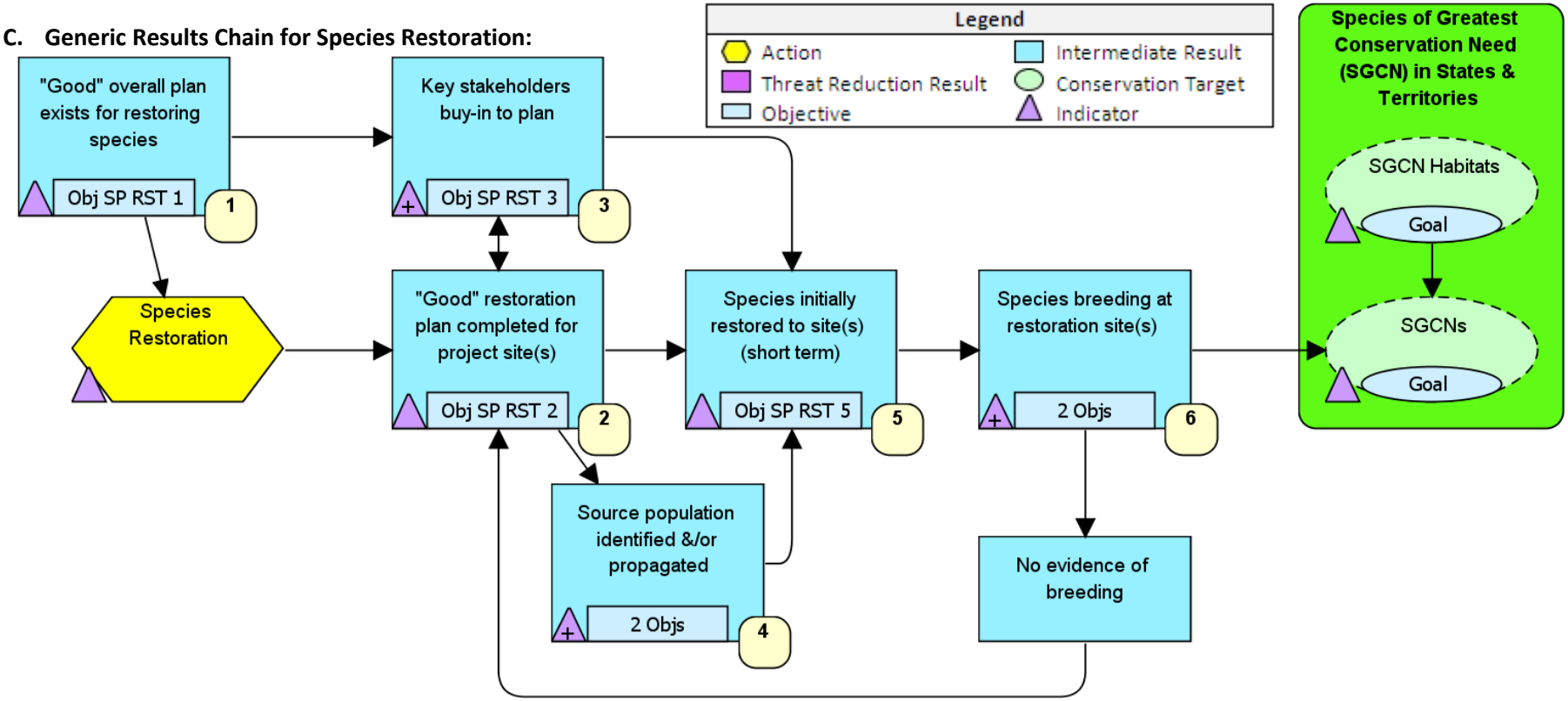
A. Definition of Species Restoration:

Species Restoration is defined as "Reintroduction, relocation, or stocking of native animals or plants or translocation of animals to an area where they are not currently found."

B. Specific Examples of Species Restoration:

1. Translocate or introduce captive-bred Black-footed Ferrets to establish new populations in a suitable habitat.
2. Restore mussel assemblages to historically occupied stream stretches.

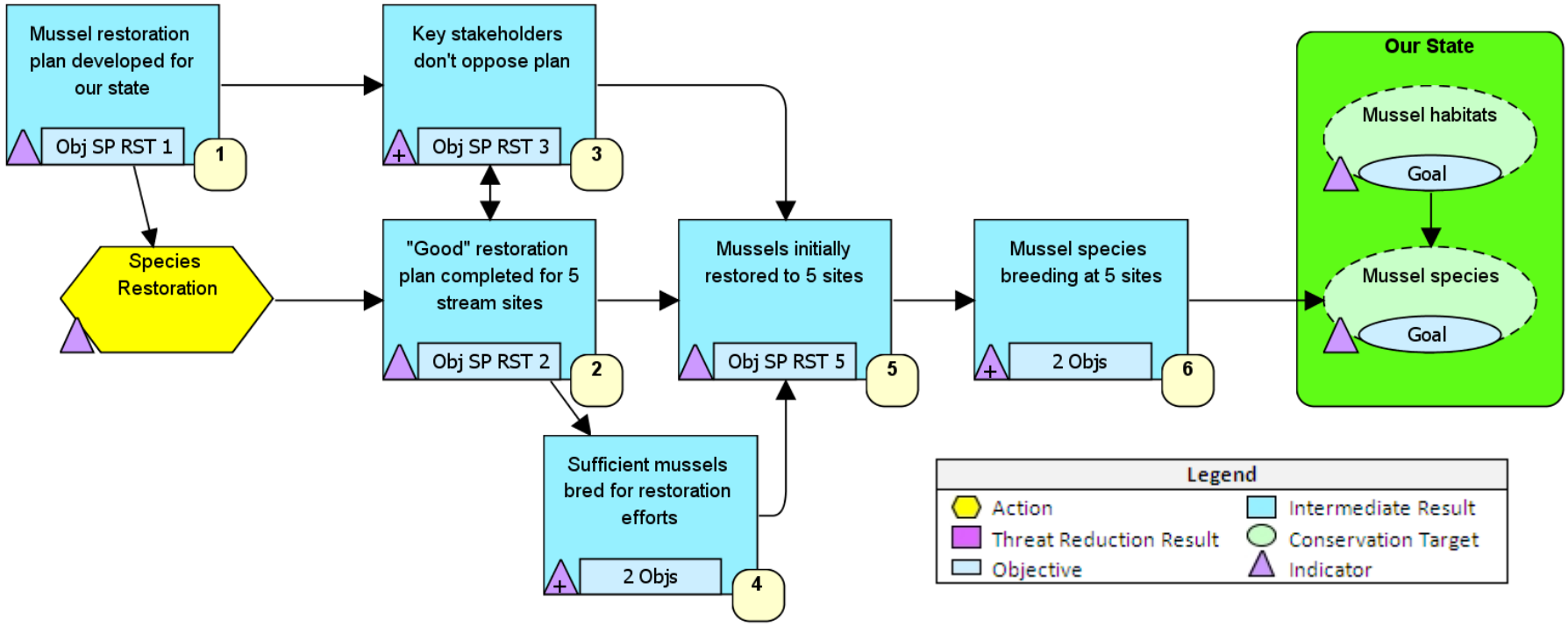
C. Generic Results Chain for Species Restoration:



Description: As outlined in the right-hand side of the results chain, a key precursor for effective Species Restoration involves developing an overall plan for restoring the species (1). The first step involves developing a good restoration plan for the specific project sites (2) and, if needed, assuring that key stakeholders buy into the plan (3). It will also generally be necessary to identify a source population for the restoration effort, either from suitable wild populations or from captive breeding efforts (4). Once the species is then restored to the site (5), a key result is that the species is breeding at the restoration sites (6). If there is no evidence that breeding is occurring, then it will be necessary to re-examine the plan and repeat as needed.

D. Example Results Chain for Species Restoration:

This fictitious example is based on a case of restoring endangered mussel species by captive breeding and then restoring to 5 stream sites. The species restoration obviously has to be combined with other conservation efforts to make sure the habitat is sufficiently conserved to support the mussels.



E. Cross-walk of Generic and Real-world Example Results, Objectives and Measures for Species Restoration:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
SP RST 01	**Generic:** "Good" overall plan exists for restoring the species	Before implementation work starts, a "good" restoration plan exists for the species within a desired region (developing this overall plan will usually not be part of this project).	Presence of plan; Assessment of plan quality against criteria	% of restoration efforts that are based on a "good" plan by taxa and by region	App 1. This project involves relocation/captive propagation/both… App 2. What species (or other taxonomic units) are expected to benefit from this project? App3. What is the expected duration of the restoration effort in this project? App 4. Is this project being implemented under an overall plan for restoring the species? App 5. Does this overall restoration plan define clear biological objectives required for recovering the species? App 6. Approximately what percentage of the overall species recovery effort is represented by this project? App 7. Does this restoration plan identify: 1) appropriate source(s) of the species, 2) candidate restoration sites, 3) methods for transferring and introducing the species to new sites, 4) monitoring and follow-up methods, and 5) risk assessment and mitigation steps?
	Mussel Example: *Mussel restoration plan developed for our state*	*Before implementation work starts, a "good" restoration plan exists for mussels in our state.*	*Presence of plan; Assessment of plan quality against criteria*		
SP RST 02	**Generic:** "Good" restoration plan completed for project site(s)	Before implementation work starts, a "good" restoration plan has been developed for the specific project site(s).	*Presence of plan; Assessment of plan quality against criteria*	None	1. Has the project developed a plan for restoration efforts at the specific project site(s)? 2. Does this restoration plan identify: 1) clear biological objectives, 2) appropriate source(s) of the species, 3) methods for transferring and introducing the species to the sites, 4) monitoring and follow-up methods, 5) a budget and work plan for this work, 6) clear exit criteria for the project (both unsuccessful and successful) , and 7) risk assessment and mitigation steps? 3. What is the "unit" for defining restoration site(s)? 4. How many total site(s) is the project targeting for restoration efforts?
	Mussel Example: *"Good" restoration plan completed for 5 sites*	*Before implementation work starts, a "good" restoration plan has been developed for the 5 project site(s).*	*Presence of plan; Assessment of plan quality against criteria*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
SP RST 03	**Generic:** Key stakeholders buy-in to plan	Prior to and following implementation of the plan, all relevant stakeholder groups are either supportive or at least non-hostile towards the restoration.	Actions taken by individuals or organizations that are against the restoration (e.g., formal legal challenges to the plan or hostile acts such as shooting restored animals)	Total number of projects that are being blocked by stakeholders, by taxa and region.	5. During the reporting period, were there any formal challenges by stakeholders to prevent the release of the target species into the restoration sites? 6. If yes, was the project team able to mediate these challenges?
	Mussel Example: *Key stakeholders don't oppose plan*	*Prior to and following implementation of the plan, landowners and stream user groups are either supportive or at least non-hostile towards the restoration.*	*Actions taken by individuals or organizations that are against the restoration (e.g., formal legal challenges to the plan or hostile acts such as shooting restored animals)*		
SP RST 04	**Generic:** Source population identified and/or propagated	Prior to implementation of the plan, a suitable source population to meet needs of all restoration sites has been identified. If necessary, before restoration efforts start, sufficient individuals have been propagated to meet needs of all restoration sites.	Evidence of suitable source population being identified. % of total individuals required to meet needs of all sites	% of projects that are able to identify and/or propagate sufficient individuals, by taxa and by region	7. Has the project identified a suitable source of individuals to meet needs of all sites in the restoration effort? 8. If propagating, what percent of total individuals required to meet needs of all sites in the restoration effort have been bred?
	Mussel Example: *Sufficient mussels bred for restoration efforts*	*Prior to implementation of the plan, a suitable source population to meet needs of all 5 restoration sites has been identified.* *Before restoration efforts start, sufficient mussels have been propagated to meet needs of all 5 restoration sites.*	*Evidence of suitable source population being identified.* *% of total mussels required to meet needs of all sites*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
SP RST 05	**Generic:** Species initially restored to sites (short-term)	By specified target date, the target number of units* have been introduced to Area(s) YYYY. * Units could be individuals, breeding pairs, communities, pounds of fish fry, or other measures as appropriate.	% of target number of units that are released	% of projects that are able to release sufficient units, by taxa and by region	9. Has the project begun releasing species to restoration site(s)? 10. What percent of initial release work across all restoration sites has been completed? (combines both within site and across sites) 11. What is the "unit" for measuring quantities of species released within restoration site(s)? 12. How many units of the species have been reintroduced?
	Mussel Example: *Mussels initially restored to 5 sites*	*Within 2 years, more than 10,000 individuals of each species have been restored to each site.*	*% of 10,000 individuals that are released*		
SP RST 06	**Generic:** Species breeding at restoration sites (medium-term)	Within X years of introduction, the restored population is successfully breeding within the restoration site(s).	% of sites with restored population successfully breeding	% of all projects with restored species successfully breeding, by taxa and by region	13. Are the introduced populations breeding within the recovery site(s)? 14. What is the "unit" for measuring successful reintroduction of the species within restoration site(s)? 15. How many units of the species are present in the recovery sites?
	Mussel Example: *Mussel species breeding at 5 sites*	*Within 4 years, the mussel species are breeding at each of the 5 sites*	*% of 5 sites with evidence of breeding*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	16. Are the introduced populations viable within the recovery site(s)? 17. Has the population goal for the target species within the restoration site(s) been achieved? 18. Has this project contributed to any changes regarding the conservation priority status (SGCN priority, Threatened/Endangered, etc.) of the target species in your state?
	Mussel Example: *Viability of Mussel Population*	***Goal:*** *Within 5 years, viable populations of mussels have doubled from 5 to 10 sites*	*Number of viable populations*		

F. Measures Questionnaire for Species Restoration

SWG PROPOSAL QUESTIONS

APP 1. **This project involves…:**

- ☐ Relocation of wild animals from an occupied habitat to one or more restoration sites.
- ☐ Captive propagation of animals to be released into one or more restoration sites.
- ☐ Both relocation of wild animals and release of captive raised animals into one or more restoration sites.
- ☐ Other (Describe:)

Notes:

APP 2. What species (or other taxonomic units) are expected to benefit from this project?
(Repeat up to 5; if more than 5 then please combine as higher level units – e.g. mussel assemblage)

Genus: Species: Other Units:

Notes:

APP 3. What is the expected duration of the restoration effort in this project?

Years

Overall Management Plan

APP 4. Is this project being implemented under an overall plan for restoring the species?

- ☐ Formal Recovery Plan — Plan's title:
- ☐ Draft Recovery Plan
- ☐ Other Restoration Plan — Explain:
- ☐ No Plan

APP 5. Does this overall restoration plan define clear biological objectives (number of populations/sites) required for recovering the species?

○ Yes ○ No

APP 6. Approximately what percentage of the overall species recovery effort is represented by this project?

% in our state % nationally Notes:

APP 7. Does this restoration plan identify: 1) appropriate source(s) of the species, 2) candidate restoration sites, 3) methods for transferring and introducing the species to new sites, 4) monitoring and follow-up methods, and 5) risk assessment and mitigation steps?

- Plan addresses all or almost all criteria
- Plan addresses most criteria
- Plan addresses some criteria
- Plan address few or no criteria

Notes:

SWG PERFORMANCE REPORTING QUESTIONS
Basic Action Information

What is the time frame that this report covers?

Start Date: End Date:

In what stage in the restoration process is this project currently? (check the most "advanced option" reached)

- Overall Planning for Restoring the Species
- Planning for Specific Project Site(s)
- Source Population Development
- Species Actively Being Restored to Site(s)
- Active Restoration Complete; Monitoring and Follow-Up

Restoration Plan

1. Has the project developed a plan for restoration efforts at the specific project site(s)?

- Yes
- No

2. Does this restoration plan identify: 1) clear biological objectives, 2) appropriate source(s) of the species, 3) methods for transferring and introducing the species to the sites, 4) monitoring and follow-up methods, 5) a budget and work plan for this work, 6) clear exit criteria for the project (both unsuccessful and successful) , and 7) risk assessment and mitigation steps?

- Plan addresses all or almost all criteria
- Plan addresses most criteria
- Plan addresses some criteria
- Plan address few or no criteria

Notes:

3. What is the "unit" for defining restoration site(s)?

- ○ Defined geographic locations
- ○ Populations of animals
- ○ Other

Describe if needed: _____

4. How many total site(s) is the project targeting for restoration efforts?

Number of sites: _____ Describe if needed: _____

Key Stakeholders Buy-In to Plan

5. During the reporting period, were there any formal challenges by stakeholders to prevent the release of the target species into the restoration sites?

- ○ Yes
- ○ No

6. If yes, was the project team able to mediate these challenges?

- ○ Complete
- ○ Most
- ○ Some
- ○ Few or none

Source Population Identified and/or Propagated

7. Has the project identified a suitable source of individuals to meet needs of all sites in the restoration effort?

- ○ Source(s) identified to provide all of the individuals needed (100%)
- ○ Source(s) identified to provide some of the individuals needed (approximately _____%)
- ○ Source(s) not yet identified to provide needed number of individuals
- ○ Captive breeding/propagation required to augment source population

If propagating individuals:

8. What percent of total individuals required to meet needs of all sites in the restoration effort have been bred?

_____%

Notes: _____

Species Initially Restored to Sites (Short-Term)

9. Has the project begun releasing species to restoration site(s)?

- ○ Yes
- ○ No

10. What percent of initial release work across all restoration sites has been completed? (combines both within site and across sites)

_____% Notes: _____

11. What is the "unit" for measuring quantities of species released within restoration site(s)?

- ○ Individuals
- ○ Breeding pairs or units
- ○ Communities
- ○ Other (e.g., pounds of fish fry)

Please describe if needed: _____

12. How many units of the species have been reintroduced? *[repeat for up to five species]*

_____ total units across all sites Notes: _____

Species Recruitment (Medium-Term)

13. Are the introduced populations breeding within the recovery site(s)?

- ○ Yes, at all sites
- ○ Yes, but only at some sites (_____% of sites)
- ○ No documentation of breeding occurring
  - ☐ Too early to expect breeding
  - ☐ Problems with restored population(s)
- ☐ Insufficient monitoring in place

Notes: _____

14. What is the "unit" for measuring successful reintroduction of the species within restoration site(s)?

- ○ Individuals
- ○ Breeding pairs or units
- ○ Populations
- ○ Spatial coverage (eg miles of stream)
- ○ Other

Describe if needed: _____

15. How many units of the species are present in the recovery sites?

_____ total units across all sites Notes: _____

Viable Populations (Long-Term)

16. Are the introduced populations viable within the recovery site(s)?

- ○ Yes, at all sites
- ○ Yes, but only at some sites (____% of sites)
- ○ No documentation of viability
  - ☐ Too early to expect viability
  - ☐ Problems with restored population(s)
- ☐ Insufficient monitoring in place

17. Has the population goal for the target species within the restoration site(s) been achieved?

- ○ Yes, at all sites for all species
- ○ Yes, but only at some sites or for some species
- ○ No

Notes: _____

18. Has this project contributed to any changes regarding the conservation priority status (e.g., SGCN priority, Threatened/Endangered, etc.) of the target species in your state? (Check all that apply)

- ☐ No change to SGCN priority, State ESA priority, or Federal ESA priority
- ☐ Remove from state ESA list
- ☐ Remove from Federal ESA list
- ☐ Change to lower SGCN priority within the Wildlife Action Plan
- ☐ Change to higher SGCN priority with the Wildlife Action Plan
- ☐ Change to higher priority within state ESA list
- ☐ Change to higher priority within Federal ESA list

Notes: _____

3. Creation of New Habitat

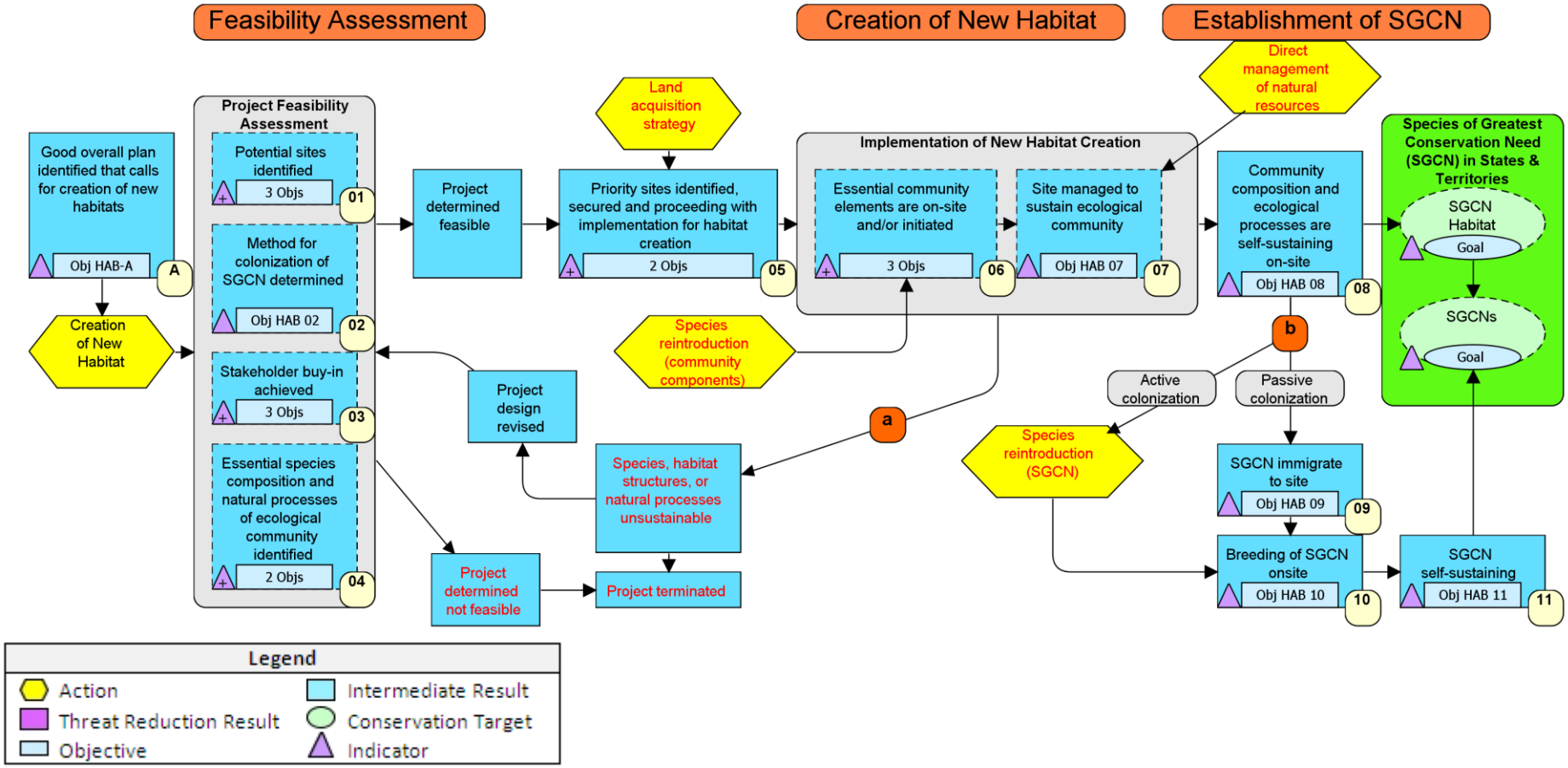
A. Definition of Creation of New Habitat:

Creation of New Habitat is defined as "The creation or establishment of *new* habitats, including necessary natural processes, habitat structures, and biotic components, to mitigate loss of ecological functions elsewhere."

B. Specific Examples of Creation of New Habitat:

1. Establish prairie communities where crop land currently exists
2. The creation of new breeding habitat for Gopher Frog reintroduction and due to a climate adaptation strategy and recovery plan

C. Generic Results Chain for Creation of New Habitat:



Description: The ultimate goal of the New Habitat Creation Results Chain is the conservation of SGCN and their habitats. This results chain contains the following three major components:

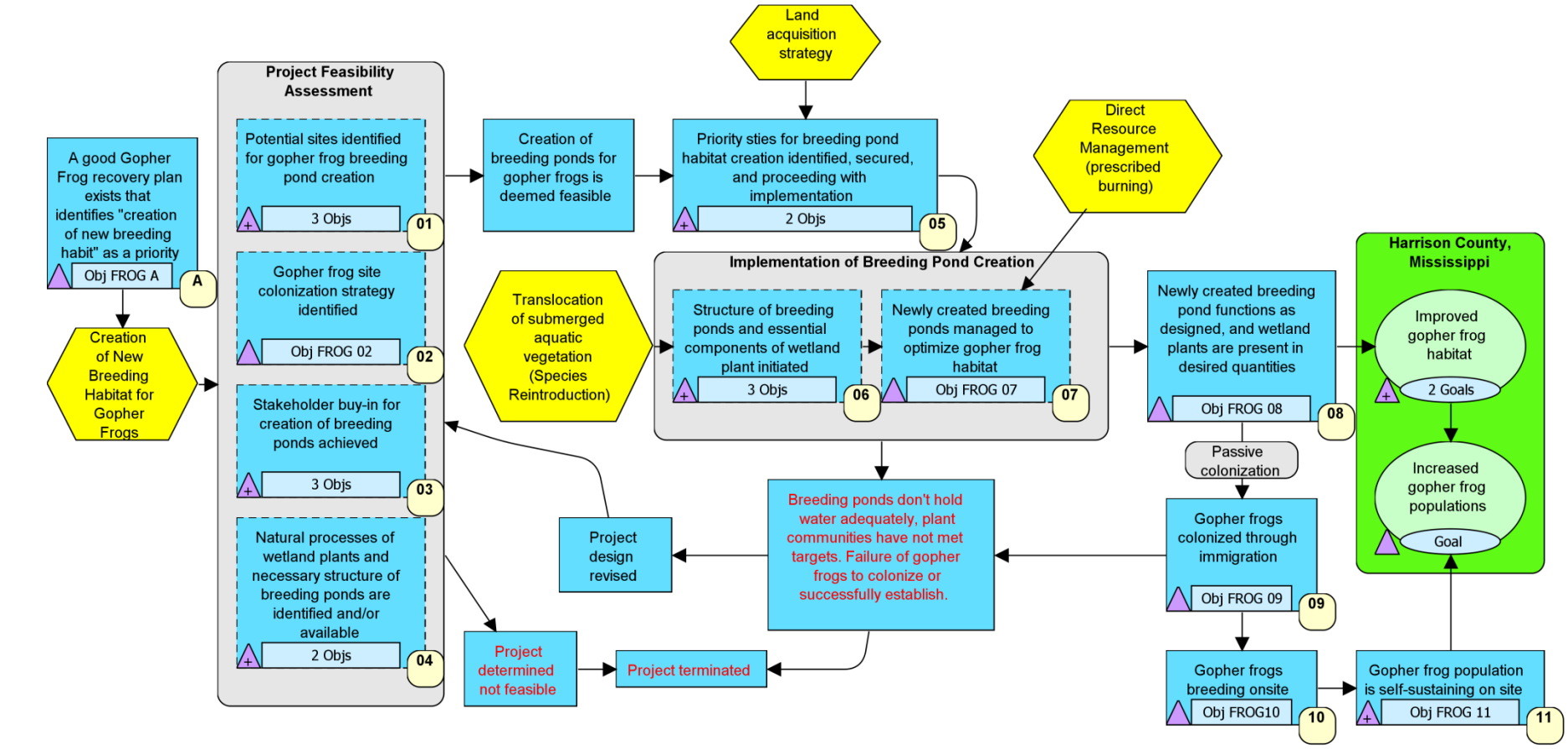
- Project feasibility assessment
- Implementation of new habitat creation
- Establishment of species of greatest conservation need (SGCN)

Although these three components comprise the bulk of the results chain, several other results are necessary to connect the conservation action to the conservation goal. The initial project feasibility assessment (results 01-04) includes several elements: the identification of potential sites (01), an economic and biological risk assessment for each site (01), selection of an SGCN site colonization strategy (02), obtaining stakeholder buy-in (03), and identifying variables by which success will be measured (04). The project feasibility assessment will inform whether a project should go forward or whether it is not feasible and should be terminated. If the project is determined feasible (05), then the chain assumes that sites would be secured (which may require a land acquisition strategy) prior to implementation (06). Implementation efforts focus on the community level and aim to establish ecological processes and necessary communities (e.g., acquiring native prairie seed) (07). If applicable, implementation also ensures that structural components of the new habitat are in place (e.g., construction of artificial wetland depressions). If these are in place, then it is assumed that the site will be managed to sustain the ecological community (08). Ideally, this means that new habitats have been developed and management plans are being implemented on site.

If implementation has occurred successfully, then it is expected that species composition and processes would be self-sustaining (09). This can be assessed via the indicators and associated thresholds established earlier in the project (Result 04). Evaluation of these indicators will help determine whether the implementation efforts were successful. If these efforts failed (Pathway a), and the basic structure/habitat is unsuitable, adaptive management must occur, and the results chain returns to the "Project Feasibility Assessment" step or the "Project Terminated" step. If implementation is successful (Pathway b), SGCN either colonize naturally (10), or the reintroduction/translocation results chain is used to effectively establish SGCN in the newly created habitat. If Pathway B is successful, breeding of SGCN occurs at the site (11) and, if breeding occurs to meet identified thresholds, then it is assumed that the SGCN populations are now self-sustaining (12), and the conservation of SGCNs and their habitats is achieved.

D. Example Results Chain for Creation of New Habitat:

This fictitious example is based on an effort to create new breeding habitat for Gopher Frogs in Harrison County, Mississippi.



E. Cross-walk of Generic and Example Results, Objectives and Measures for Creation of New Habitat:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
HAB A	**Generic:** Good overall plan identified for SGCN that calls for creation of new habitats	Before strategy initiated, a "good" management plan exists that identifies that new habitat creation is needed	Presence of a plan that identifies new habitat creation as a conservation action	% of new habitat creation initiatives in which a plan exists that calls for the creation of new habitats	App1. Did a previous conservation and management plan for the target SGCN identify "Creation of New Habitat" as a necessary conservation action?
	Gopher Frog Example: *A good Gopher Frog recovery plan exists that identifies "creation of new breeding habit" as a priority*	*Before the new habitat creation strategy is initiated, a "good" management plan for Gopher Frogs exists that identifies the need for creation of new breeding ponds*	*Presence of a management plan for Gopher Frogs that identifies the creation of new breeding ponds*		
HAB 01-1	**Generic:** Potential sites identified	By {target date}, a list of X potential sites for consideration has been create	a. Presence of a list of potential sites b. Total number of potential sites	c. % of plans in which potential site list exists d. No roll-up	1. List all potential sites for new habitat creation:
	Gopher Frog Example: *Potential sites identified for Gopher Frog breeding pond creation*	*Within 1 month of project initiation, a list of 6 potential breeding pond sites for consideration has been created*	*a. Presence of a list of potential Gopher Frog sites* *b. Total number of potential Gopher Frog sites*		
HAB 01-2	**Generic:** Potential sites identified	By {target date}, a written biological risk assessment for all potential sites has been completed	% of potential sites with biological risk assessment	% of total plans with biological risk assessments completed	2. For each potential site, please identify the level of completion for the following assessments: a. Written Biological Assessment b. Written Economic Assessment c. Site-specific Budget Please indicate barriers to assessment completion (for each assessment for each site)
	Gopher Frog Example: *Potential sites identified for Gopher Frog breeding pond creation*	*Within 4 months of project initiation, a written biological risk assessment for all breeding pond sites has been completed*	*#/% of potential Gopher Frog sites with biological risk assessment*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
HAB 01-3	**Generic:** Potential sites identified	By {target date}, a written economic assessment and budget for all potential sites for consideration has been completed	% of potential sites with economic assessment & budget completed	% of total plans with economic assessments completed	See above
	Gopher Frog Example: *Potential sites identified for Gopher Frog breeding pond creation*	*Within 5 months of project initiation, a written economic assessment has been completed for each breeding pond site*	*#/% of potential gopher frog sites with economic assessment & budget completed*		
HAB 02	**Generic:** Method for colonization of SGCN determined	By {target date} site colonization method for SGCN has been decided	Presence of site colonization method	% plans that have a colonization method indicated; of that, breakdown of methods employed	3. Identify the appropriate method for colonization of SGCN across all potential sites
	Gopher Frog Example: *Gopher Frog site colonization strategy identified*	*Within 6 months of project initiation, a site colonization method for Gopher Frogs has been decided*	*Evidence of site colonization method for gopher frog*		
HAB 03-1	**Generic:** Stakeholder buy-in achieved	By {target date}, at least X# stakeholder groups have been identified, and at least Y% have received communication about new habitat creation initiative and expectations	a. # stakeholders/ stakeholder groups identified b. % stakeholders with whom communication has been achieved and expectations shared	# of stakeholders/ stakeholder groups across all projects	4. This project identified the following stakeholders:: ○ Internal/Agency Partners ○ Community members at large ○ Financial contributor/ capital commitment holder ○ Special interest group ○ Other: 5. How many stakeholders were identified for this project? 6. Of the X#* stakeholders identified, how many were you able to communicate with?
	Gopher Frog Example *Stakeholder buy-in for creation of breeding ponds achieved*	*Within 6 months of gopher frog project onset, 4 major stakeholder groups have been identified, and at least 75% have received communication*	*a. # stakeholder groups identified* *b. % stakeholders with whom communication about creation of breeding ponds has been achieved and expectations shared*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
HAB 03-2	**Generic:** Stakeholder buy-in achieved	By {target date}, of those who have received communications, at least X% have agreed to participate	% of contacted stakeholders who agree to participate	% projects in which X% of contacted stakeholders agree to participate	7. Of the X#* stakeholders you communicated with, how many agreed to participate in your action?
	Gopher Frog Example: *Stakeholder buy-in for creation of breeding ponds achieved*	*Within 2 months of communication with stakeholder groups, 100% have agreed to participate (e.g. support) creation of breeding ponds*	*% of stakeholders contacted who have agreed to participate in the creation of breeding ponds*		
HAB 03-3	**Generic:** Stakeholder buy-in achieved	By {target date}, of participating stakeholders, at least X% have fulfilled their commitments to the project	% of participating stakeholders who fulfill commitments	% projects in which X% participating stakeholders fulfill commitments	8. For the X#* participating stakeholders, how many fulfilled their commitments to your project? 9. Were participating stakeholders recognized for their involvement? If yes, please describe
	Gopher Frog Example: *Stakeholder buy-in for creation of breeding ponds achieved*	*Within 6 months of agreeing to participate, 100% of those stakeholders have fulfilled their commitments to efforts to support the creation of breeding ponds*	*% of those stakeholders who have fulfilled their commitments to efforts to create breeding ponds*		
HAB 04-1	**Generic:** Essential species composition and natural processes of ecological community identified	By {target date}, indicators with quantifiable thresholds for success have been defined that determine whether community and ecological processes have been established and sustained	Presence of defined indicators with thresholds of success	% projects that have documented indicators with thresholds of success	10. Have indicators with quantifiable thresholds been identified that will later be used to determine that community and ecological process have been established? If yes, please list
	Gopher Frog Example: *Natural processes of wetland plants and necessary structure of breeding*	*Within 3 months of initiating the project feasibility assessment, indicators with quantifiable thresholds for success have*	*Presence of defined indicators with thresholds of success*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
	ponds are identified and/or available	*been defined that determine whether a wetland community has been established and sustained*			
HAB 04-2	**Generic:** Essential species composition and natural processes of ecological community identified	By {target date}, X% of indicators with quantifiable thresholds have been peer reviewed	% of indicators with quantifiable thresholds that have been peer reviewed	% of new habitat creation actions in which they have peer reviewed the desired #/% of indicators with quantifiable thresholds (by category, as well)	11. Has a peer review process occurred for all indicators and quantifiable thresholds for success? 12. After completion of the Project Feasibility Study, has this project been deemed feasible for implementation? If no, why?
	Gopher Frog Example: *Natural processes of wetland plants and necessary structure of breeding ponds are identified and/or available*	*Within 3 months of project initiation, 100% of the indicators with quantifiable thresholds have been peer reviewed by the gopher frog recovery team*	*% of indicators with quantifiable thresholds that reviewed by the Gopher Frog recovery team*		
HAB 05-1	**Generic:** Priority sites identified, secured and proceeding with implementation for habitat creation	By {target date}, X% of suitable potential sites are secured	% of suitable sites that are secured	% of projects with X% (grouped in categories) of suitable sites secured	13. Please indicate status of each potential site in regards to project implementation a. Was this site deemed suitable for project implementation? If "No," please indicate why b. Has this site been secured and made available for the use of this project? If "No," please indicate why:
	Gopher Frog Example: *Priority sties for breeding pond habitat creation identified, secured, and proceeding with implementation*	*Within 6 months of the completion of the feasibility assessment, 100% of suitable breeding pond sites are secured*	*% of secured breeding pond sites that are proceeding with implementation*		
HAB 05-2	**Generic:** Priority sites identified, secured and proceeding with implementation for habitat creation	By {target date}, X% of secured sites are proceeding with implementation	% of secured sites in which implementation occurs	% of projects with X% (grouped in categories) of secured sites in which implementation has occurred	c. Is project implementation occurring on this site? If "No," please indicate why
	Gopher Frog Example: *Priority sties for breeding*	*Within 3 months of securing sites, a minimum of 50% of secured breeding pond sites*	*% of secured sites in which implementation occurs*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
	pond habitat creation identified, secured, and proceeding with implementation	*are proceeding with implementation*			
HAB 06-1	**Generic:** Essential community elements are on-site and/or initiated	By {target date}, essential species necessary for community creation have been introduced	Presence of essential species for target community composition	% projects with essential species for target community composition introduced	14. Have the essential species necessary for community creation been introduced on site?
	Gopher Frog Example: *Structure of breeding ponds and essential components of wetland plant initiated*	*Within 1.5 years of project implementation, essential species necessary for community creation including submerged aquatic vegetation/wetland plant species have been introduced*	*Presence of essential species necessary for community creation including submerged aquatic vegetation/wetland plant species*		
HAB 06-2	**Generic:** Essential community elements are on-site and/or initiated	By {target date}, habitat structure necessary for community creation have been created	Presence of habitat structures	% projects with habitat structure created	15. Have habitat structures necessary for community creation been created on site? (i.e., ponds, woody debris, etc.)
	Gopher Frog Example: *Structure of breeding ponds and essential components of wetland plant initiated*	*Within 2 years of project implementation breeding ponds and their associated habitat structures have been created*	*Presence of breeding ponds and associated habitat structures*		
HAB 06-3	**Generic:** Essential community elements are on-site and/or initiated	By {target date}, natural processes necessary for community creation have been initiated	Evidence that natural processes have been initiated	% projects with natural processes initiated	16. Have natural processes necessary for community creation been initiated? (i.e., adequate stream flows, fire regimes, etc.)
	Gopher Frog Example: *Structure of breeding ponds and essential components of wetland plant initiated*	*Within 2 years of project implementation, prescribed fire regimes for breeding pond habitat have been initiated*	*Evidence that prescribed fire has been used to manage new breeding habitat*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
HAB 07	**Generic:** Site managed to sustain ecological community	By {target date}, a management plan is implemented	Evidence of management plan implementation	% of new habitat creation initiatives that have a management plan in implementation (report by categories)	17. Is a management plan currently being implemented?
	Gopher Frog Example: *Newly created breeding ponds managed to optimize gopher frog habitat*	*Within 2 years of project initiation, a management plan for breeding pond habitats is implemented*	*Evidence of implementation of a management plan for breeding pond habitats*		
HAB 08	**Generic:** Essential species composition and ecological processes are self-sustaining on-site	Within X years since the introduction of community elements, the thresholds of success previously identified in the project feasibility study have been attained.	Evidence of thresholds attained	%of projects in which community viability has been achieved (by category)	18. At the time of this survey, have the thresholds for indicators of community viability been attained?
	Gopher Frog Example: *Newly created breeding pond functions as designed, and wetland plants are present in desired quantities*	*Within 5 years of project initiation, a minimum of 75% of the thresholds of success for breeding pond community viability indicators identified in the project feasibility study have been attained.*	*% of the thresholds of success for breeding pond community viability indicators identified in the project feasibility study that have been attained.*		
HAB 09	**Generic:** SGCN immigrate to site	By {target date}, XX SGCN individuals have immigrated to the site	# SGCN individuals that have immigrated to the site	% of total projects where immigration has occurred	19. Are target SGCN present on-site? If "Yes," indicate number of individuals present
	Gopher Frog Example: *Gopher Frogs colonized through immigration*	*Within 2 years of the creation of the breeding pond habitat, at least 100 Gopher Frogs have immigrated to the site*	*# of Gopher Frogs that have immigrated to the site*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
HAB 10	**Generic:** Breeding of SGCN onsite	Within XX years of colonization, SGCN is successfully breeding within the new habitat	Evidence of breeding happening at site(s)	a. % of new habitat creation initiatives in which breeding of SGCN is evident b. % of sites in which breeding of SGCN is evident	20. Are target SGCN breeding within the site?
	Gopher Frog Example: *Gopher Frogs breeding onsite*	*Within 2 years of colonization, there is evidence of successful breeding within the new pond*	*Evidence that Gopher Frog tadpoles are successfully metamorphosing and emerging from the breeding habitat*		
HAB 11	**Generic:** SGCN self-sustaining on-site	By {target date}, a "viable" population of SGCN exists at the new habitat	Evidence a "viable" population of SGCN exists at the new habitat	% of new habitat creation initiatives with viable populations of targeted SGCN	21. Are the immigrated populations viable within the site?
	Gopher Frog Example: *Gopher Frog population is self-sustaining on site.*	*Within 10 years of breeding habitat creation, a viable population of Gopher Frogs (> 100 individuals) breeds on site, producing egg masses that successfully hatch and tadpoles that metamorphose in breeding ponds and return to their natal pond to breed when they reach maturity*	*a. % of egg masses that successfully hatch* *b. # of individuals that breed on site* *c. % tadpoles that metamorphose in breeding ponds* *d. % tadpoles return to their natal pond to breed when they reach reproductive maturity*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	**N/A**
	Gopher Frog Example: *Increased Gopher Frog populations*	***Goal:*** *Within 10 years of pond construction, a population of at least 100 individual Gopher Frogs utilizes the breeding pond*	*# of Gopher Frogs that are utilizing the breeding pond*		

F. Measures Questionnaire for Creation of New Habitat:

Project Feasibility – Assessment

App 1. Did a previous conservation and management plan for the target SGCN identify "Creation of New Habitat" as a necessary conservation action?

- ○ Yes, a plan exists that identifies "Creation of New Habitat" as a necessary action
- ○ No, a plan currently does not specifically identify "Creation of New Habitat" as a necessary action for SGCN conservation & management

  Plan name, if applicable: [ ]

  Programming note: This is an application question

1. List all potential sites for new habitat creation:

   Site 1: [ ]

   ☐ Add another potential site

   Programming Note: Allow practitioner to identify as many sites as he deems appropriate. Ask the following question for each site. Auto-fill from previously-identified sites.

2. For each potential site, please identify the level of completion for the following assessments:

Potential Site	Written Biological Assessment	Written Economic Assessment	Site-specific Budget
Site 1 *(programming note: auto populate from response above)*	☐ Fully Complete ☐ Assessment in progress If not fully complete: ☐ < 50% complete ☐ ≥ 50% complete	☐ Fully Complete ☐ Assessment in progress If not fully complete: ☐ < 50% complete ☐ ≥ 50% complete	☐ Fully Complete ☐ Assessment in progress If not fully complete: ☐ < 50% complete ☐ ≥ 50% complete
	Please indicate barriers to assessment completion (*note: show this cell if completion is below 50%)* ☐ Insufficient time ☐ Insufficient funding ☐ Change in site prioritization ☐ Inability to access site ☐ Other: _____	Please indicate barriers to assessment completion (*note: if completion <50%)* ☐ Insufficient time ☐ Insufficient funding ☐ Change in site prioritization ☐ Inability to access site ☐ Other: _____	Please indicate barriers to assessment completion (*note: if completion is< 50%)* ☐ Insufficient time ☐ Insufficient funding ☐ Change in site prioritization ☐ Inability to access appropriate cost details ☐ Other: _____
Site 2… etc.	*Same as above*	*Same as above*	*Same as above*

3. Identify the appropriate method for colonization of SGCN across all potential sites (check all that apply):

   ☐ Species Introduction from propagated population

   ☐ Species Translocation from source population

   ☐ Species immigration

   ☐ No colonization method determined

Project Feasibility - Stakeholder Involvement

4. This project identified the following stakeholders :
   - ○ Internal/Agency Partners
   - ○ Community members at large
   - ○ Financial contributor/ capital commitment holder
   - ○ Special interest group
   - ○ Other _____
5. How many stakeholders were identified for this project? _____
6. Of the X#* stakeholders identified, how many were you able to communicate with? _____
   **Programming note: Auto populate X# with number from Question 6*
7. Of the X#* stakeholders you communicated with, how many agreed to participate in your action? _____
   **Programming note: Auto populate X# with number from Question 7*
8. For the X#* participating stakeholders, how many fulfilled their commitments to your project? _____
   **Programming note: Auto populate X# with number from Question 8*
9. Were participating stakeholders recognized for their involvement?
   - ○ Yes
   - ○ No

   If "Yes," please describe: _____

Project Feasibility - Indicators of Success

10. Have Indicators with quantifiable thresholds been identified that will later be used to determine that community and ecological process have been established?
    - ○ Yes, Indicators with quantifiable thresholds have been developed
    - ○ No, Indicators have been developed, but quantifiable thresholds have not been determined.
    - ○ No, Indicators with quantifiable thresholds have not been developed for community and ecological process establishment

    If Yes, please list indicator(s): _____ (*optional*)

    ☐ Add another Indicator

(Programming note: If YES, answer questions 11 - 13)

11. Has a peer review process occurred for all indicators and quantifiable thresholds for success?
    - ○ Yes, indicators/thresholds have been peer reviewed both internally (within the agency) and externally
    - ○ Yes, Indicators/thresholds have been peer reviewed internally
    - ○ Yes, Indicators/thresholds have been peer reviewed externally
    - ○ No, indicators/thresholds have not been peer reviewed

A "Threshold for Success" is a minimum target goal set prior to project implementation for a given indicator that is necessary for achieving a successful and self-sustaining ecological community and its associated processes. For the previously identified set of indicators, answer the following questions:

12. After completion of the Project Feasibility Study, has this project been deemed feasible for implementation?
    (Programming note: Mandatory)
    - ○ Yes, project is feasible for implementation
    - ○ No, project deemed infeasible based on results of the study

If no, please explain why this project was deemed infeasible *(Note: consider adding a pick list, TBD)*

Project Implementation – Site Status

13. Please indicate status of each potential site in regards to project implementation:

Potential Site	Was this site deemed suitable for project implementation?	Has this site been secured and made available for the use of this project?	Is project implementation occurring on this site?
Site 1 *(programming note: auto populate from response in Question 2)*	○ Yes, site deemed suitable for project implementation ○ No, site deemed inappropriate for project implementation If "No," please indicate why: ☐ Land unavailable for procurement ☐ Unable to support/sustain biological, ecological, or structural functions ☐ Site is cost-prohibitive ☐ Stakeholder objections ☐ Colonization method inappropriate for this site ☐ Other: _____	(*NOTE: if "Yes" to previous question, show this column)* ○ Yes, site is secured for this project ○ No, site has not yet been secured If "No," please indicate why: ☐ secured by agency but currently unavailable for this project ☐ inadequate funding for procuring site ☐ insufficient time has passed to procure site ☐ Other:_____	(*NOTE: if "Yes" to previous question, show this column)* ○ Yes, project implementation occurring ○ No, project implementation not yet occurring If "No," please indicate why: ☐ Insufficient time ☐ Insufficient funding ☐ Environmental barriers (e.g., weather, difficult terrain or access, etc.) ☐ Lack of appropriate staff resources ☐ Other:_____
Etc…			

Programming note: tally from each column to show total number of sites selected for implementation, total number of selected sites secured, and total number of secured sites in which project implementation is occurring. <u>If at least one site has project implementation occurring, proceed with questionnaire. If NO sites have project implementation occurring, stop questionnaire.</u>

Project Implementation – Essential Elements

14. Have the essential species necessary for community creation been introduced on site? (i.e., aquatic vegetation, food sources, etc.)

○ Yes, essential species introduced

○ Yes, species introduction has been initiated, but is not yet complete due to:

☐ Insufficient time ☐ Insufficient funding

☐ Inability to secure source population for essential species

☐ Other: _____

○ No (*check all that apply*):

☐ Insufficient time ☐ Insufficient funding

☐ Inability to secure source population for essential species

☐ Other: _____

15. Have habitat structures necessary for community creation been created on site? (i.e., ponds, woody debris, etc.)

- ○ Yes, habitat structures created
- ○ Yes, habitat structure creation has been initiated, but is not yet complete due to:
  - ☐ Insufficient time ☐ Insufficient funding
  - ☐ Inability to secure source population for essential species
  - ☐ Other: _____
- ○ No (*check all that apply*):
  - ☐ Insufficient time ☐ Insufficient funding
  - ☐ Other: _____

16. Have natural processes necessary for community creation been initiated? (i.e., adequate stream flows, fire regimes, etc.)

- ○ Yes, natural processes initiated
- ○ Yes, natural processes have been initiated, but have not yet been completed due to:
  - ☐ Insufficient time ☐ Insufficient funding
  - ☐ Inability to secure source population for essential species
  - ☐ Other: _____
- ○ No (*check all that apply*):
  - ☐ Insufficient time ☐ Insufficient funding
  - ☐ Other: _____

Management & Monitoring

17. Is a management plan currently being implemented?

- ○ Yes, implementation of management plan occurring
- ○ No, management plan does not exist or is not finalized
- ○ No, too soon to implement management plan
- ○ No, insufficient resources to implement management plan
- ○ No, other: _____

18. At the time of this survey, have the thresholds for indicators of community viability (stated in question 10) been attained?

- ○ Thresholds met/attained for all of the community viability indicators (100%)
- ○ Thresholds met/attained for most of the community viability indicators (75-99%)
- ○ Thresholds met/attained for some of the community viability indicators (30-75%)
- ○ Thresholds met/attained for few or none of the community viability indicators (< 30%)
- ○ It is too soon to determine if thresholds have been met/attained

Establishment of Species of Greatest Conservation Need – *Passive Colonization Only*

(*Note: If active colonization, complete the questionnaire for Species Reintroduction)*

19. Are target SGCN present on-site?

- ○ No, too soon to measure colonization
- ○ Insufficient monitoring is in place to determine if SGCN are present on-site
- ○ Yes, target SGCN is present on site

  If "Yes," indicate number of individuals present: ☐

  PROGRAMMING NOTE: During the initial information gathering stage, we assume there will be a question, "What are the primary target SGCN ?" for each project. For each indicated SGCN for a project, autopopulate additional subsets for this question, so the PI can indicate # of individuals present for each SGCN (if these data are available). Do the same for Questions 20 and 21.

20. Are target SGCN breeding within the site?

- ○ Yes
- ○ No documentation of breeding occurring
  - ☐ Too early to expect breeding
  - ☐ Insufficient monitoring in place
  - ☐ Problems with immigrated population

21. Are the immigrated populations viable within the site?

- ○ Yes
- ○ No documentation of breeding occurring
  - ☐ Too early to expect breeding
  - ☐ Insufficient monitoring in place
  - ☐ Problems with immigrated population

G. Example Graphs and Charts for Reports for Creation of New Habitat:

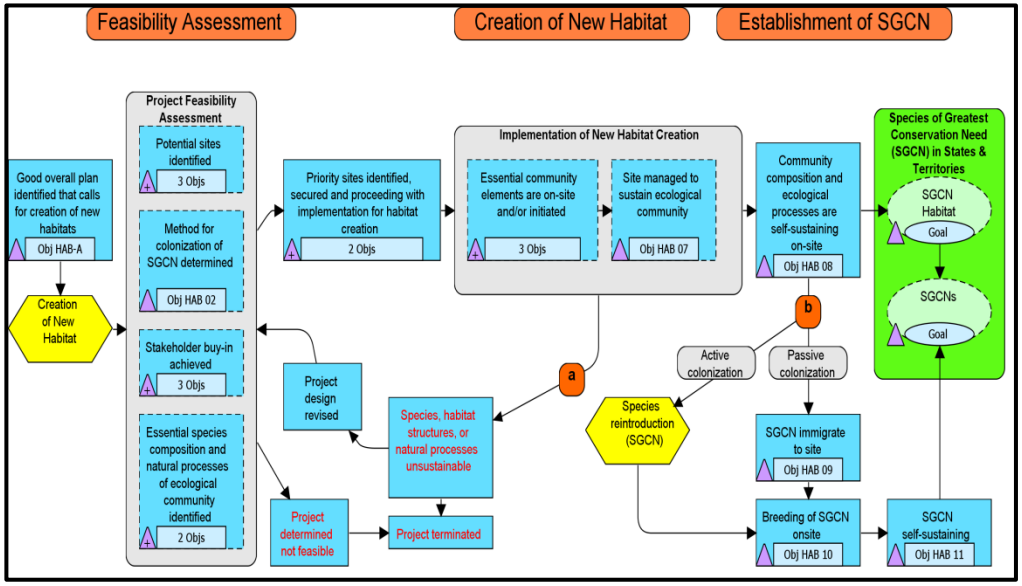
Effectiveness of Creation of New Habitat

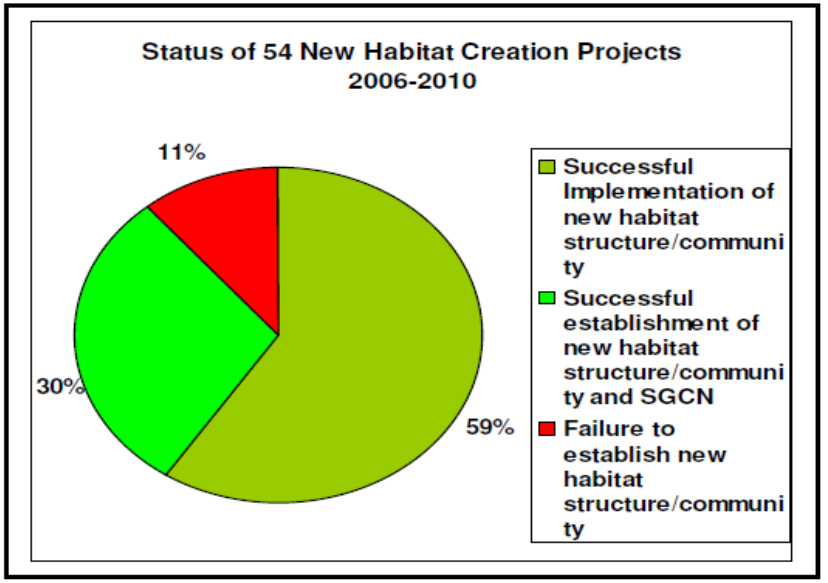
Creation of New Habitat is the creation or establishment of new habitats or natural processes to mitigate loss of ecological functions elsewhere. Some examples include:

- Creating new breeding ponds for amphibian SGCN
- Creating prairie habitat where there are no remnant prairie plants
- Creating new wetlands for mitigation purposed (e.g., highway construction)

Progress to Date: Results Chain for Creation of New Habitat

In total, 54 *Creation of New Habitat* grants have been issues to 19 states from 2006-2010. Within four years of project termination, 30% of *Creation of New Habitat* projects resulted in new viable populations of SGCN, insufficient time has passed to determine success of 59% of *Creation of New Habitat* projects, and 11% of projects failed at the implementation stage.





Where Do We Go From Here?

New habitats created using SWG funding have resulted in self-sustaining populations of SGCN in 16 states. With existing threats to SGCN exacerbated by global climate change, new habitat creation is becoming increasingly warranted as a conservation action. In light of these current and future threats to SGCN, existing habitat creation projects have allowed the conservation community to determine the most efficient and economic methods for this conservation action. States will continue to monitor these projects for success/failure, and implement new habitat creation projects as funding allows.

Currently states would require an additional $9 million dollars to implement existing plans for *Creation of New Habitat*.

4. Acquisition / Easement / Lease

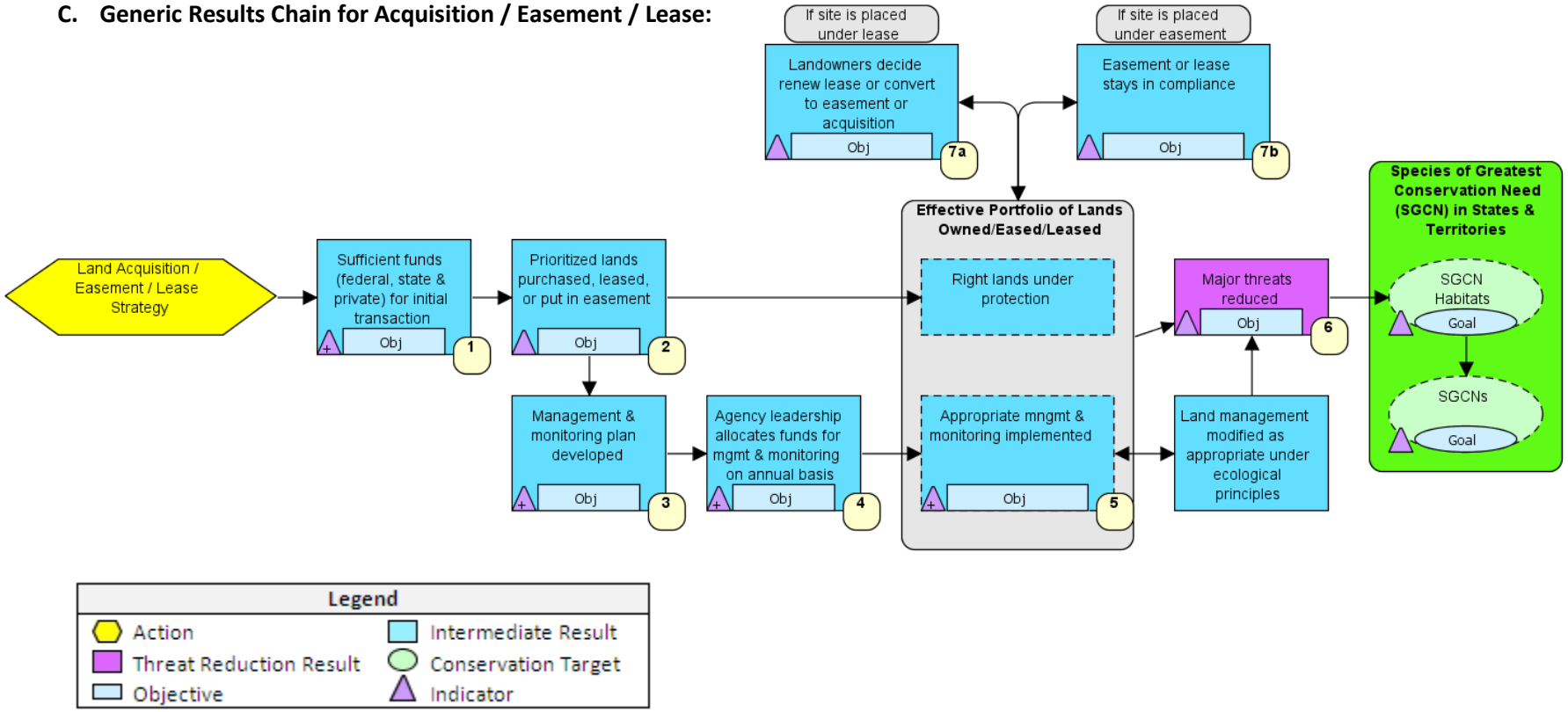
A. Definition of Acquisition / Easement / Lease:

Acquisition/Easement/Lease is defined as "Protection of land or water real property or rights through fee title acquisition, permanent easement, lease, contract, or a related means."

B. Specific Examples of Acquisition / Easement / Lease:

1. Purchase of land in a corridor connecting a Wildlife Management Area and a National Wildlife Refuge.
2. A perpetual easement restricting land conversion and development is placed on a remnant tall grass prairie.
3. A 20-year term contract is placed on a privately-owned Pennsylvania wet meadow for protection and recovery of the Bog Turtle.

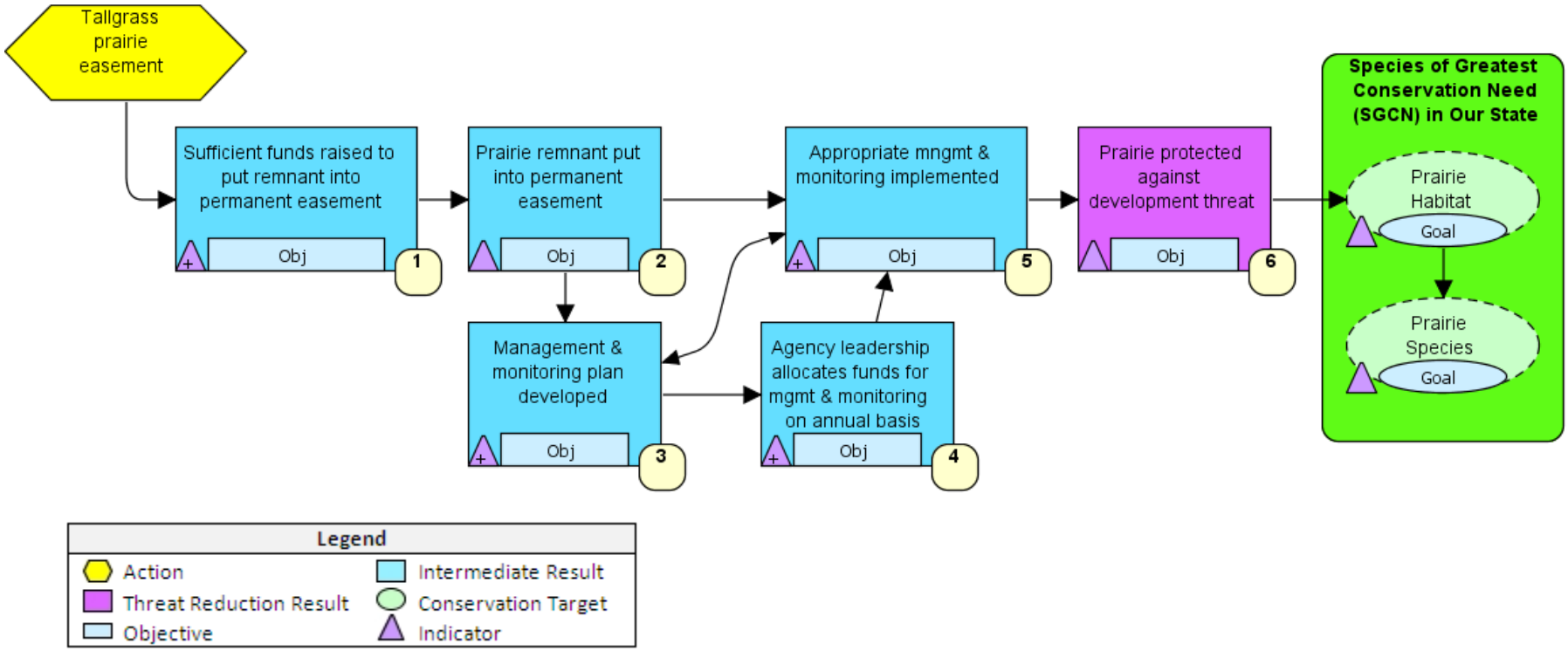
C. Generic Results Chain for Acquisition / Easement / Lease:



Description: As outlined on the right-hand side of the results chain, Land Protection depends on getting sufficient funds in place for the initial transaction (1) and then purchasing, leasing, or obtaining an easement for the prioritized lands (2). The agency then needs to develop a management and monitoring plan (3) and allocate funds to implement it (4). The agency then needs to implement the management and monitoring work (5), thus mitigating the threats to the land (6). If the site is leased, over time the landowners need to renew the lease or convert to a more permanent form of protection (7a). If the site is placed under easement, the easement needs to stay in compliance (7b).

D. Example Results Chain for Acquisition / Easement / Lease:

This fictitious example is based on a case of obtaining an easement for a remnant tract of tall grass prairie.



E. Cross-walk of Generic and Real-world Example Results, Objectives, and Measures for Acquisition / Easement / Lease:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
LND AQ 1	**Generic:** Sufficient funds (federal, state & private) for initial transaction	At least X % of needed transaction cost comes from non-federal partnership with SWG	Amount received/needed for initial transaction	%/# of acquisitions that acquired X % of needed transaction cost with non-federal partnership	App 1. Was the site identified as a priority in the State Wildlife Action Plan? a. If NO, why? App 2. Type of land protection strategy App3. How many acres (or other units) are being prioritized for purchase, lease, or easement? App4. What is the total proposed cost (dollar amount) of the initial transaction for purchase, lease or easement? App5. What are the proposed sources of funds for this effort, including this grant? *The following questions repeat in report:* 1. What was the total cost (dollar amount) of the initial transaction for purchase, lease or easement? 2. What were the sources of funds for this effort, including this grant?
	Prairie Example: *Sufficient funds raised to put remnant into permanent easement*	*At least 50% of easement fees come from non-federal partnership with SWG*	*Amount needed/received for initial transaction of permanent easement*		
LND AQ 2	**Generic:** Prioritized land is purchased, leased, or put in easement	Priority site is purchased, leased, or put in an easement within X months/year of site being identified	# acres prioritized for purchase, lease or easement # acres purchased, leased, or put in easement	% of prioritized land purchased, leased, or put into easement	3. How many acres (or other units) were: a. Prioritized for purchase, lease or easement both by dominant habitat type and total b. Actually purchased, leased, or put under easement? 4. If lease or easement a. Date of transaction b. Length of contract c. Date of expiration
	Prairie Example: *Prairie remnant is put into permanent easement*	*Prairie easement is put into place within 12 months of being identified*	*# prairie acres put in easement within 12 months of prioritization*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
LND AQ 3	**Generic:** Management and monitoring plan developed	Within X months of priority site being identified, clear management and monitoring plans have been developed	Existence of a management and monitoring plan that outlines steps required to achieve desired conservation results	% of protected land with management and monitoring plans that outline steps required to achieve desired conservation results	5. Was a management plan created that outlines steps required leading to desired conservation results (e.g., SGCN populations and habitat conditions)? 6. Who is responsible for implementing this management plan? 7. Was a monitoring plan created? 8. Who is responsible for implementing this monitoring plan?
	Prairie Example: *Management and monitoring plan developed*	*Within 12 months of priority site being identified, clear management and monitoring plans have been developed*	*Existence of a management and monitoring plan that outlines steps required to achieve desired conservation results*		
LND AQ 4	**Generic:** Agency leadership allocates funds for management & monitoring on annual basis	At least X % of funds requested for annual management & monitoring are being allocated by agency leadership	Amount of funding requested for management & monitoring annually; Amount of funding that that was allocated by Agency leadership for management and monitoring annually	% of requested funding that was allocated by agency leadership to be spent on management and monitoring annually	9. How much funding was requested and finally allocated for managing this lease, easement, or acquisition? 10. How much funding was requested and finally allocated for monitoring this lease, easement, or acquisition?
	Prairie Example: *Agency leadership allocates funds for management & monitoring on annual basis*	At least $20,000 per year is allocated for management and monitoring of the site	Amount of funding requested for management & monitoring annually; Amount of funding that that was spent on management and monitoring annually		
LND AQ 5	**Generic:** Appropriate management and monitoring implemented	Within X months/years of land acquisition/lease/ easement, agency is implementing appropriate management and monitoring plans at that site	Evidence of management plan being implemented	% of land acquisition actions in which management plans are being implemented	11. What is the extent that the management plan is being implemented? 12. If the management plan is being implemented, are the actions achieving the desired goals identified in the plan? 13. If management plan is not achieving desired goals, why not? 14. If the management is not having the desired effect, are management plans being updated to reflect new information? 15. Is there a monitoring plan in a place that includes either a species or habitat monitoring component? 16. What is the extent to which the monitoring plan is being implemented?
	Prairie Example: *Appropriate management and monitoring plan implemented*	*Within 1 year after the easement, agency is implementing appropriate management and monitoring plans at the site*	*Evidence of management plan being implemented*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
LND AQ 6	**Generic:** Major threats reduced	Within X years of completing the acquisition, the desired threat reduction is seen	Evidence that management plan is reducing key threats	% of initiatives that show a reduction in key threats being addressed by management plan	17. What threat(s) were you hoping to address through your management plan(s), and do you have evidence that the plan(s) are leading toward reductions in any of these threats? 18. Additional comments or anecdotes (optional) 19. Do you have any suggestions to improve the planning process?
	Prairie Example: *Prairie protected against development threat*	*Within 2 years, the development threat has been mitigated*	*Assessment of development threat*		
LND AQ 7a	**Generic:** Landowners decide to renew lease or convert to easement or acquisition	At the time of lease renewal, landowner decides to either: a) renew lease; b) convert least to easement; or c) offer leased land up for acquisition	Evidence of lease renewal or conversion to easement or acquisition	% of protected lands at the time of renewal that are: a) renewed; b) converted from lease to easement or c) converted to acquisition	20. For lease strategies: a. Has the lease contract expired? b. If the lease contract has expired has the agency attempted to renew the agreement? c. If landowner has renewed was the agreement: lease or convert to easement/acquisition? d. If landowner has not renewed agreement, why not?
	Prairie Example: *(not part of this example)*				
LND AQ 7b	**Generic:** Easement or lease stays in compliance	Each year after the easement or lease is established the easement is shown to be in compliance	Evidence of lease compliance per year	% of easements or leases in compliance	21. What proportion of years since the easement/lease contract beginning has the landowner remained in compliance? 22. During the past three years, has the agency had to initiate legal action to compel a landowner to comply with the terms of this easement/lease agreement?
	Prairie Example: *(not part of this example)*				

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Prairie Example: *Prairie-dependent SGCN status improved*	***Goal:*** *Within 3 years of the easement, key prairie species have improved viaiblity*	*Viability of prairie species*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Prairie Example: *Prairie habitat improved*	*Within 3 years of the easement, the prairie habitat viability has improved*	*Viability of prairie habitat*		

F. Measures Questionnaire for Acquisition / Easement / Lease:

SWG PROPOSAL QUESTIONS

App1. Was the site(s) identified as a priority in the State Wildlife Action Plan?

- YES
- NO
- Not Applicable

App1a. IF NO, Why not?

- State Wildlife Action Plan did not identify priority sites
- Site is meeting an emerging need not identified in State Wildlife Action Plan
- Other (please describe in the space below)

Comments

App2. Please identify the type of Land Protection Strategy:

- Fee Title Acquisition
- Perpetual Conservation Easement
- Term Conservation Easement
- Lease/agreement/contract
- Other

If "other," please describe:

App3. How many acres (or other units) are being prioritized for purchase, lease, or easement?

App4. What is the total proposed cost (dollar amount) of the initial transaction for purchase, lease or easement?

App5. What are the proposed sources of funds for this effort, including this grant?

Funding Source	Amount	% of Total	Comment
This grant			

SWG PERFORMANCE REPORTING QUESTIONS

Site Identification and Procurement

1. What was the total cost (dollar amount) of the initial transaction for purchase, lease or easement?

2. What were the sources of funds for this effort, including this grant?

Funding Source	Amount	% of Total	Comment
This grant			
Other			

3. How many acres (or other units):

a. Were prioritized for purchase, lease, or easement both by dominant habitat type and total?

Total Units

b. Were actually purchased, leased, or put under easement both by dominant habitat type and total?

Total Units

Habitat Type	Unit (e.g. acres)	Prioritized	Actual	Comment

4. If lease or easement:

a. Date of transaction (numerical value)

b. Length of contract (numerical value)

c. Date of expiration (numerical value)

5. Was a management plan created that outlines steps required leading to desired conservation results (e.g., SGCN populations and habitat conditions)?

- YES
- NO (please explain below)
- Unknown

If "NO" or "Unknown," please explain:

6. Who is responsible for implementing this management plan?

- ☐ Wildlife Agency
- ☐ Landowner
- ☐ Other (please specify)

7. Was a monitoring plan created?

- ○ YES
- ○ NO (please explain below)
- ○ Unknown

If "NO" or "Unknown," please explain:

8. Who is responsible for implementing this management plan?

- ☐ Wildlife Agency
- ☐ Landowner
- ☐ Other (please specify)

9. How much funding was requested and finally allocated for managing this lease, easement, or acquisition?

Amount requested Amount allocated

10. How much funding was requested and finally allocated for monitoring this lease, easement, or acquisition?

Amount requested Amount allocated

11. What is the extent to which the management plan is being implemented?

- ○ Fully
- ○ Mostly
- ○ Partially
- ○ Not at all

If "Mostly," "Partially" or "Not at all," why?

12. If the management plan is being implemented, are the actions achieving the desired goals based on the plan(s)?

- Fully
- Mostly (explain below)
- Partially (explain below)
- Not at all

If "Mostly," "Partially" or "Not at all," please explain:

13. If "Not at all," why not?

- Not enough time has passed
- Management actions weren't appropriate
- Funding requested for management wasn't adequate
- Weather or unpredictable hazards impeded management activity
- Unknown
- Other (please specify below)

Comments:

14. If management is not having the desired effect, have management plans been updated to reflect new information?

- YES
- NO (please explain below)
- Unknown

If "No," please explain:

15. Is there a monitoring plan in place that includes either a species or habitat monitoring component?

- YES
- NO (please explain below)
- Unknown

If "No" or "unknown," why not?

16. What is the extent to which the monitoring plan is being implemented?

- Fully
- Mostly
- Partially
- Not at all (please explain below)

If "mostly," "partially" or "not at all," why not?

Threat Reduction

17. What threat(s) were you hoping to address through the designation of conservation areas, and do you have evidence that the designation(s) are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org.

Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	
7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	
11 Climate Change & Severe Weather	☐	y/n/don't know	

18. Additional comments or anecdotes (optional)

19. Do you have any suggestions to improve the planning process?

20. For lease strategies:

20a. Has the original lease agreement expired?

- ○ YES
- ○ NO

20b. If "YES," when the lease agreement expired, did the agency attempt to renew this agreement?

- ○ YES
- ○ NO
- ○ Unknown

20c. If "YES," was the lease agreement officially renewed?

- YES
- NO
- Unknown

20d. If the lease agreement was not renewed, please explain why:

- Economic - lease fee insufficient
- Changing ownership - new owner not interested
- Landowner unhappy with the lease terms or process
- Lease converted to a permanent easement
- Property acquired by agency or partner
- Property no longer meets conservation goals
- Poor relationship between the landowner and the agency
- Management objectives have been met
- Other (please specify below)

Comment:

21. What proportion of years since the easement/lease contract beginning has the landowner remained in compliance?

- Fully compliant (96-100% of years under contract)
- Mostly compliant (76-95% of years under contract)
- Somewhat compliant (46-75% of the years under contract)
- Rarely compliant (26-45% of the years under contract)
- No evidence of compliance (less than 25%)
- Unknown

If "somewhat," "Rarely," "No-evidence" or "Unknown," please explain:

22. During the past three years, has the agency had to initiate legal action to compel a landowner to comply with the terms of this easement/lease agreement?

- YES
- NO
- Unknown

Please explain if necessary:

5. Conservation Area Designation

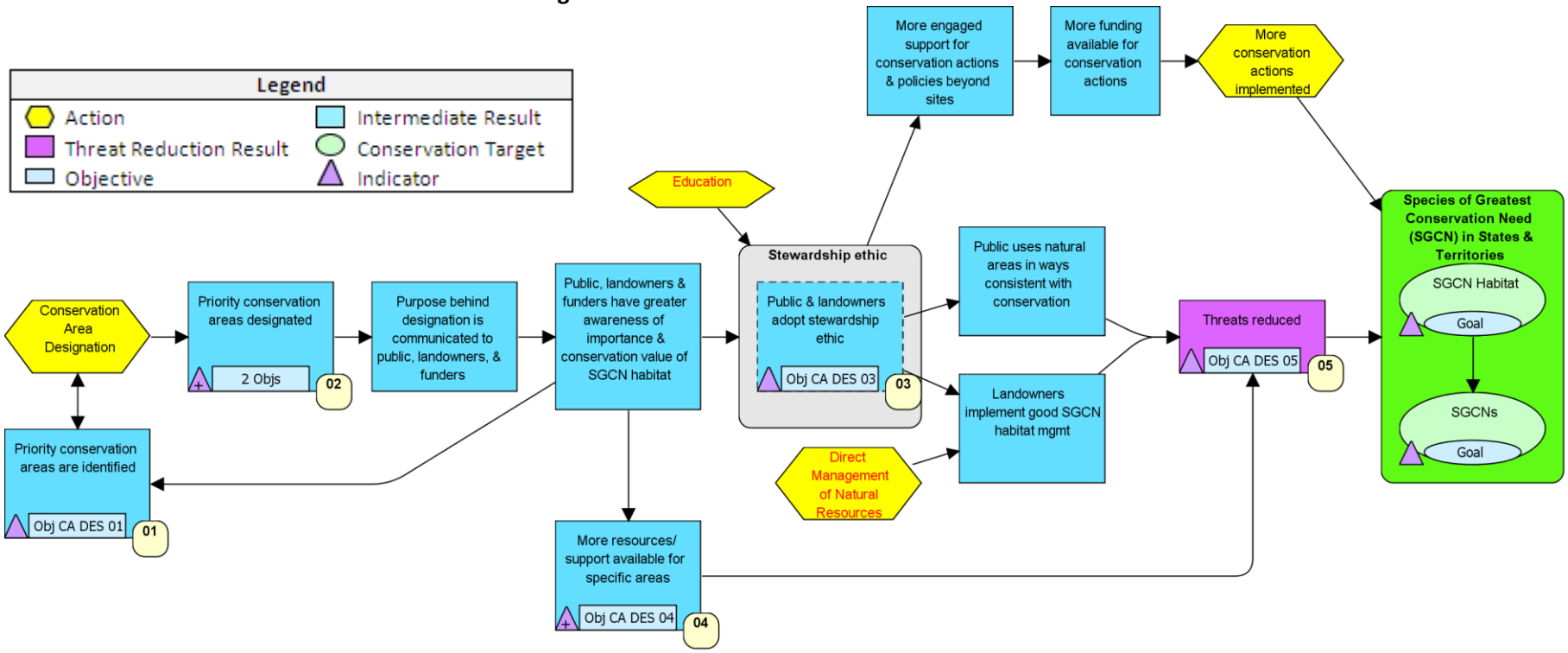
A. Definition of Conservation Area Designation:

Conservation Area Designation is defined as "Designation of a site or landscape as having unique and important value to wildlife with or without legal protections."

B. Specific Examples of Conservation Area Designation:

1. Designate an area as an Important Bird Area.
2. Designate an area as an Important Reptile/Amphibian Area.
3. Add an area to a State Natural Area Registry.

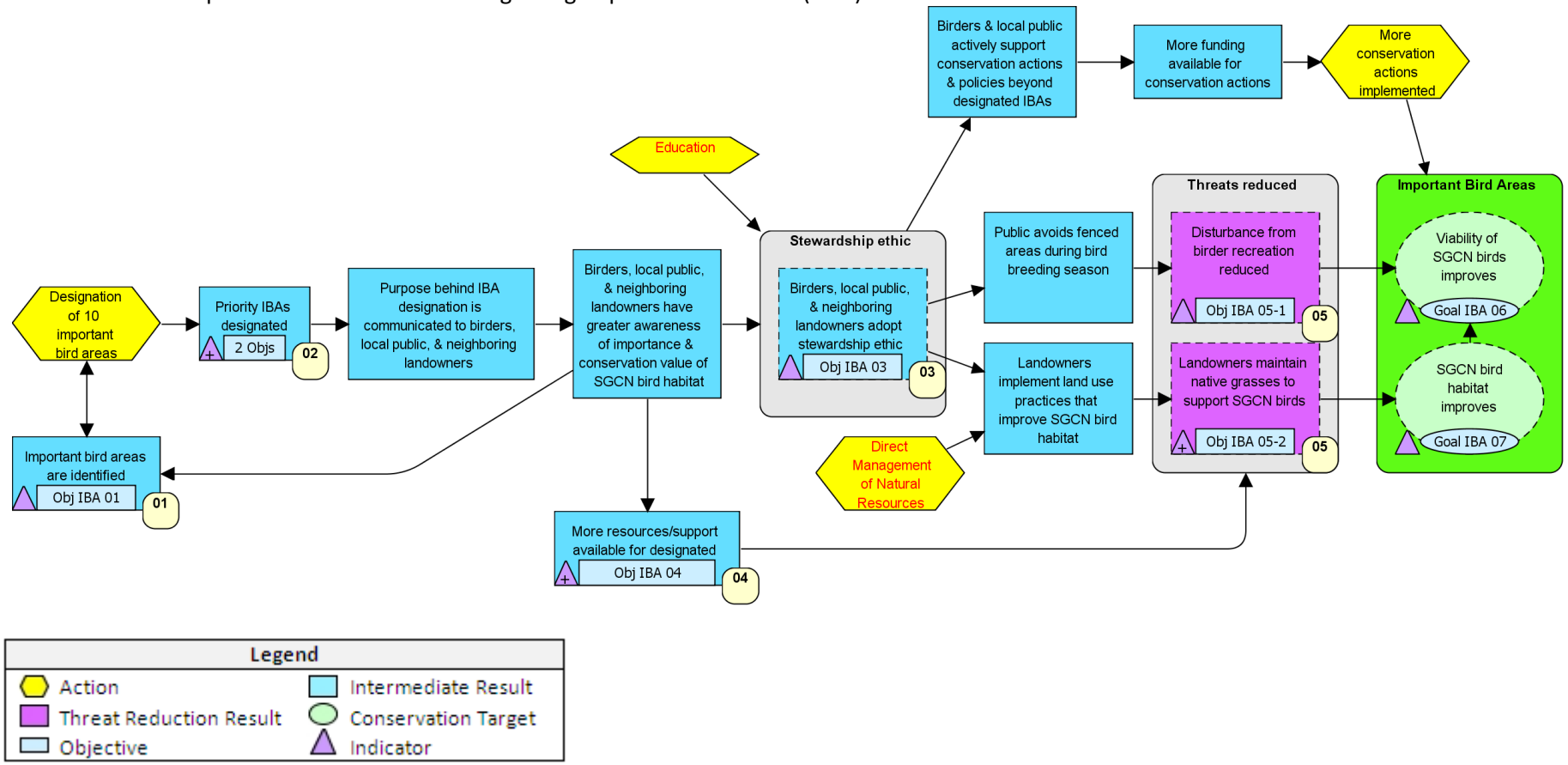
C. Generic Results Chain for Conservation Area Designation:



Description: State agencies and their partners use the formal designation of conservation areas to identify places with high value as wildlife habitat and to promote a stewardship ethic among landowners and other key stakeholders that value or use the sites for recreation. The results chain begins with a rigorous process for identifying these priority areas that involves quality data and stakeholder participation (01). It is assumed that this would be part of the SWG review process – in other words, a conservation areas designation initiative that did not undertake a rigorous process would not be awarded SWG funding. If an initiative does receive funding, then the results chain shows that the first expected result is that the priority areas would be designated (02) and would cover a desired spatial extent and benefit key SGCN. The project team then engages local stakeholders—most importantly landowners within the designated areas—to raise awareness of the important wildlife and habitat values. Ideally the landowners would be part of the original stakeholder participation in identifying the priority conservation areas. But even if they are not, outreach with landowners is critical at this stage to achieve the desired results. The successful communication of wildlife and habitat values should result in an increased stewardship ethic among target populations (03), that leads to compatible public uses and good habitat management within the designated areas. Over time, these results are expected to help reduce threats to the SGCN within the designated conservation areas (05) and achieve population and habitat goals. Ancillary benefits, depicted in the chains below and above the main chain, include increases in resources/support for specific conservation areas (04) and more active engagement by target audiences in supporting conservation action and policies beyond the designated conservation areas. Well known examples of conservation designations include State Natural Areas Registries, Important Bird Areas, TNC's ecoregional portfolio, and the priority conservation zones identified in some states' Wildlife Action Plans.

D. Example Results Chain for Conservation Area Designation:

This fictitious example is based on a case of designating Important Bird Areas (IBAs).



E. Cross-walk of Generic and Example Results, Objectives and Measures for Conservation Area Designation:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
CA DES 01	**Generic:** Priority conservation areas identified	Prior to designation, a rigorous process is in place for identifying priority conservation areas	Existence of rigorous process for identifying priority conservation areas	None – should be part of application and review process	App1. Which of the following did you consider in identifying your priority conservation areas? a. Geospatial SGCN data b. Consistent designation criteria c. Process underwent an expert review d. Process gathered stakeholder input *Note: these are suggested questions for the SWG application process.*
	IBA Example: *Important bird areas identified*	*Prior to designation, a rigorous process is in place for identifying important bird areas*	*Existence of rigorous process for identifying important areas*		
CA DES 02-1	**Generic:** Priority conservation areas designated	Within X years of initiating the process, at least X# or % of priority conservation areas designated	# of priority conservation areas designated	% of initiatives that have met their designation # objective	1. How many priority conservation areas were designated?
	IBA Example: *Priority IBAs designated*	*Within 2 years of initiating the Important Bird Area designation process, at least 8 IBAs are designated*	*# of important areas designated*		
CA DES 02-2	**Generic:** Priority conservation areas designated	Within X years of initiating the process, at least X# of SGCNs and X# acres are covered by the designations	a. # acres encompassed within designated conservation areas b. # of SGCNs encompassed within designated conservation areas	a. % of initiatives that have met their acreage objective b. % of initiatives that have met their SGCN coverage objective	2. How many acres are encompassed within designated conservation areas? 3. How many SGCNS are encompassed within designated conservation areas?
	IBA Example: *Priority IBAs designated*	*Within 2 years of initiating the Important Bird Area designation process, at least 15 SGCN birds and 4,000 acres are covered by the IBAs*	a. *# acres encompassed within important bird areas* b. *# of SGCN birds encompassed within the Important Bird Areas*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
CA DES 03	**Generic:** Public & landowners adopt stewardship ethic	Within X years of the designation, the trend in stewardship ethic within the designated conservation area increases	Trend in stewardship ethic within designated conservation area	% of initiatives that show an increase in the trend in stewardship ethic within designated conservation area	4. What is the general trend for stewardship ethic across all of the designated conservation area(s)? If stable, declining, or mixed results, please indicate why 5. What is the basis for your answer above? 6. To what degree do you feel the primary driver behind the trend was the designation of the conservation area(s)? 7. Additional comments or anecdotes (optional)
	IBA Example: *Birders, local public, & neighboring landowners adopt stewardship ethic*	*Within 5 years of the IBA designation, the trend in stewardship ethic across the IBAs increases*	*Trend in stewardship ethic across designated IBAs*		
CA DES 04	**Generic:** More resources/ support available for specific areas	Within X years of designation, there is an increase in funding, human resources, and/or programs that benefit the designated conservation areas	Evidence of increase in: a. Funding b. Human resources c. Programs	% of initiatives that show evidence of increase in: a. Funding b. Human resources c. Programs	8. Since the designation of the conservation area, have you seen an increase in the following resources? a. Funding b. Human resources c. Programs 9. Additional comments or anecdotes (optional)
	IBA Example: *More resources/support available for designated IBAs*	*Within 5 years of IBAs' designation, donations and volunteer hours for IBA management from the birding community increase relative to 2011 levels*	*Evidence of increase in:* a. *Donations from birding community for designated IBAs* b. *Volunteer hours from birding community*		
CA DES 05	**Generic:** Threats reduced	Within X years of the designation of the conservation area, the desired threat reduction is seen	Evidence that conservation area designation is reducing key threats	% of initiatives that show a reduction in key threats being addressed by conservation area designation	10. What threat(s) were you hoping to address through the designation of conservation areas, and do you have evidence that the designation(s) are leading toward reductions in any of these threats? If you did not see the threat reductions you expected, please indicate why 11. Additional comments or anecdotes (optional)
	IBA Example: *Disturbance from birder recreation reduced*	*Within 7 years, incidences of disturbance to nesting birds in IBAs decrease by at least 75%, as compared to 2011 levels*	*# of incidences of disturbance to nesting birds in IBAs*		
	IBA Example: *Landowners maintain native grasses to support SGCN birds*	*Within 7 years, at least 50 landholders across the IBAS are maintaining a total of at least 1000 acres of grasslands with native grass species to support SGCN birds*	a. *# of acres of native grass habitat maintained* b. *# of landholders within the IBAs that are maintaining native grasses*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
N/A - Conser-vation targets	**Generic: Viability of SGCN improved**	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	IBA Example: *Viability of SGCN birds improves*	***Goal:*** *Within 10 years of the designation of IBAs, SGCN bird breeding pairs within designated IBAs have increased at least 10% over 2011 numbers based on breeding season grassland bird point counts*	*# of SGCN breeding bird pairs within designated IBAs*		
N/A - Conser-vation targets	**Generic: Viability of SGCN habitats improved**	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	IBA Example: *SGCN bird habitat improves*	***Goal:*** *Within 10 years of the designation of IBAs, at least 1,000 acres of SGCN bird habitat within designated IBAs is being maintained by landowners in a condition of high ecological integrity, as measured against an appropriate native grassland reference site*	*# of acres of SGCN bird habitat maintained in a condition of high ecological integrity*		

F. Measures Questionnaire for Conservation Area Designation:

Identification of Priority Conservation Areas

APP1. Which of the following did you consider in identifying your priority conservation areas?

Element	Yes	No	Don't Know
Geospatial SGCN data	○	○	○
Consistent designation criteria	○	○	○
Process underwent an expert review	○	○	○
Process gathered stakeholder input	○	○	○

Note: This should be an application question, not a monitoring question.

Designation of Priority Conservation Areas

Considering the entire scope of your initiative to designate conservation areas, please answer the following questions

1. How many priority conservation areas were designated? ☐ areas
2. How many acres are encompassed within designated conservation areas? ☐ acres
3. How many SGCNS are encompassed within designated conservation areas? ☐ SGCNs

Trend in Stewardship Ethic

4. What is the general trend for stewardship ethic across all of the designated conservation area(s)? (Improving, Stable, Declining)

   ○ Improving

   ○ Stable

   ○ Declining

   ○ Mixed results across multiple area designations

   ○ Don't know

   If stable, declining, or mixed results, please indicate why *(check all that apply)*:

   ☐ Insufficient time has passed to expect an improving trend in stewardship

   ☐ Stewardship ethic was already very good

   ☐ Other factors (e.g., economic, political, social conditions) were too strong to overcome

   ☐ Other: _____

   ☐ Don't know

5. What is the basis for your estimate on stewardship ethic trends?

   ○ Professional judgment

   ○ Attitude survey or similar data collection effort

   ○ Other (Please specify _____)

6. To what degree do you feel the primary driver behind the stewardship trend was the designation of the conservation area(s)?

   ○ Mostly or completely

   ○ Partly

   ○ Not very much

○ Not at all

○ Don't know

7. Additional comments or anecdotes (optional)

Resources/ Support Available to Designated Conservation Areas

8. Since the designation of the conservation area, have you seen an increase in the following resources?

Resource	Yes	No	Don't Know
Funding	○	○	○
Human resources	○	○	○
Programs	○	○	○

9. Additional comments or anecdotes (optional)

Threat Reduction

10. What threat(s) were you hoping to address through the designation of conservation areas, and do you have evidence that the designation(s) are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org. *Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.*

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	
7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	
11 Climate Change & Severe Weather	☐	y/n/don't know	

If you did not see the threat reductions you expected, please indicate why *(check all that apply)*:

☐ Insufficient time has passed to expect a reduction in threats

☐ Insufficient funding was available to adequately support conservation areas

- ☐ Other factors (e.g., economic, political, social conditions) were too strong to overcome
- ☐ Other: _____
- ☐ Don't know

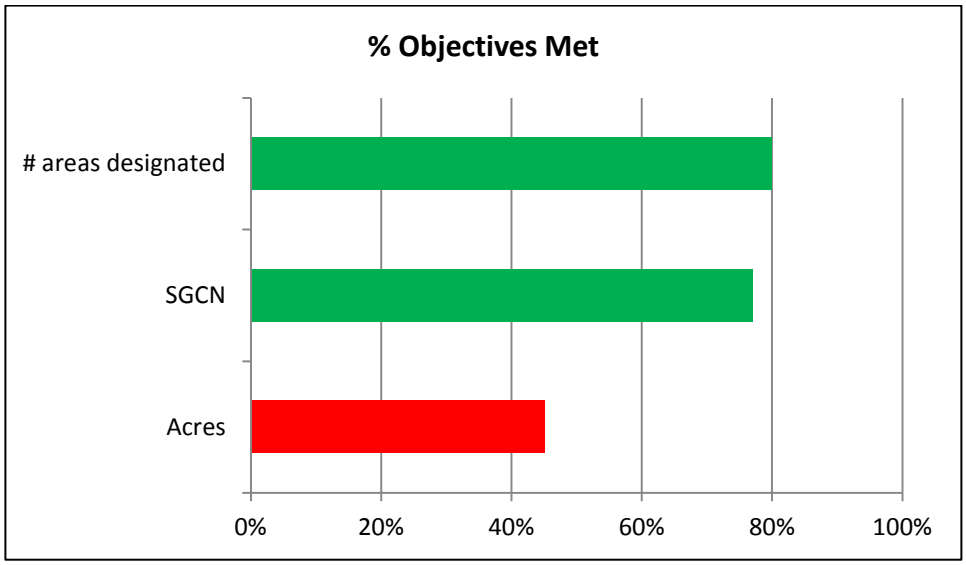
11. Additional comments or anecdotes (optional)

Additional Information

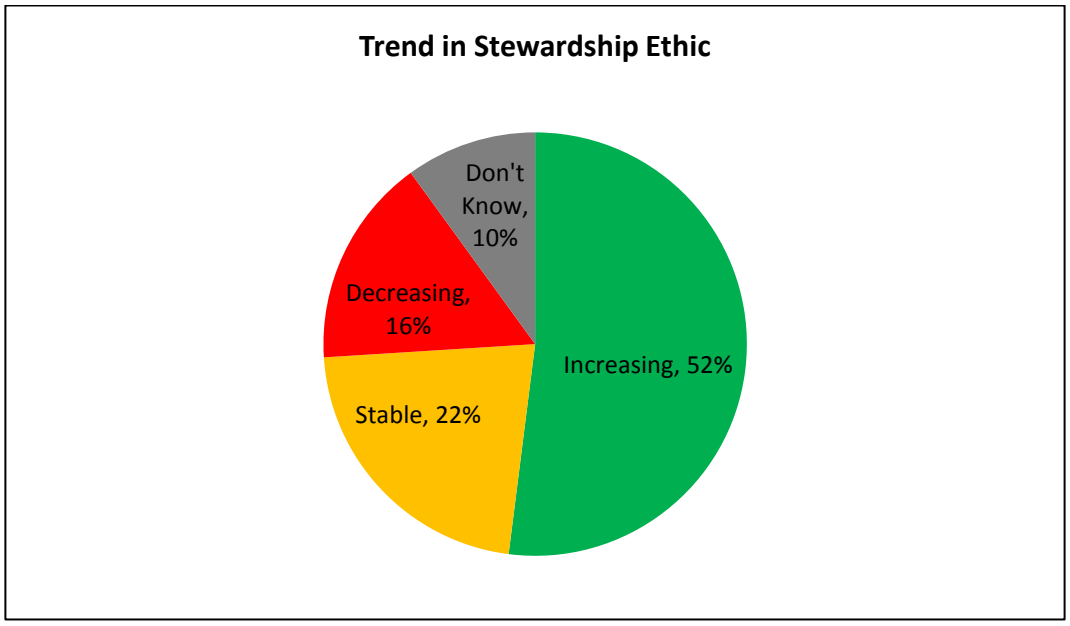
12. Please provide any narratives, case studies, or additional comments you may have related to your conservation area designation initiative (optional)

G. Example Graphs and Charts for Reports Conservation Area Designation:
Potential graphs and charts for a report could include:

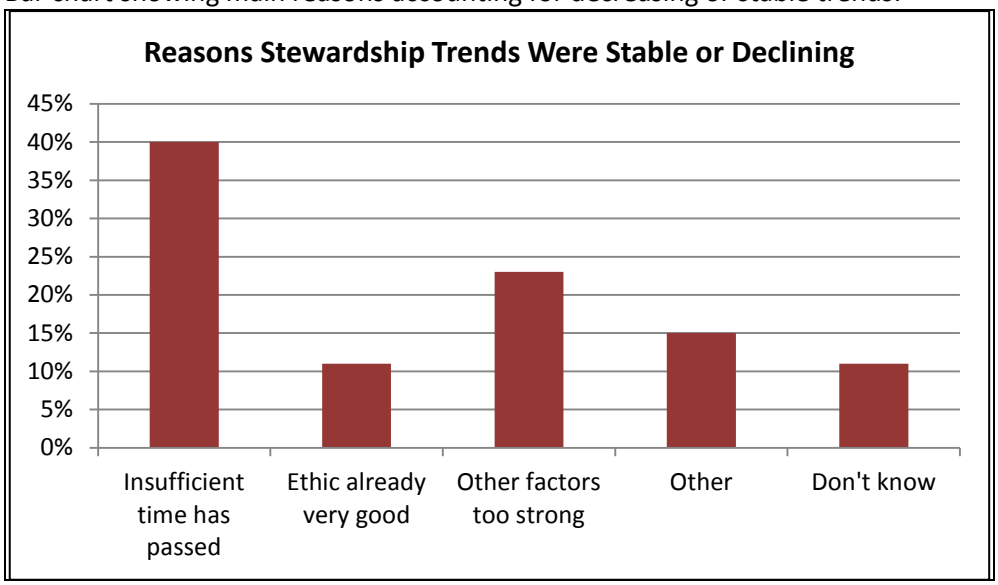
CA DES 02 (Priority conservation areas designated): Bar graph that shows 3 indicators of % objectives met for acres, SGCN, and # areas designated; Could use red (<50%), yellow (51-75%), green (76% - 100%) categories to show how well they are doing



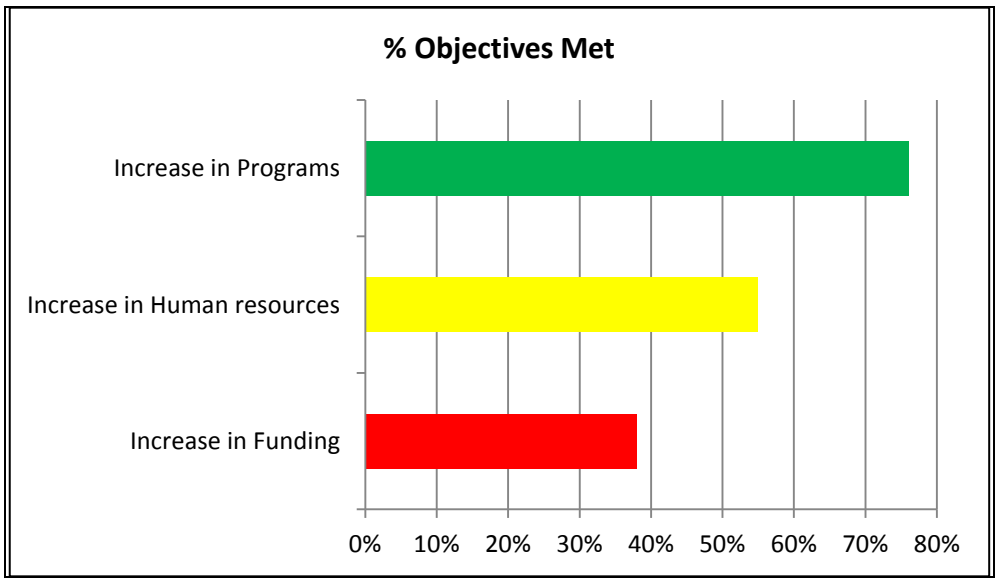
CA DES 03 (Public & landowners adopt stewardship ethic): Pie chart that shows increasing, stable, decreasing trends. Note: Consider timeframe...only show those responses where they have NOT indicated that it is too early to be able to have met their objectives



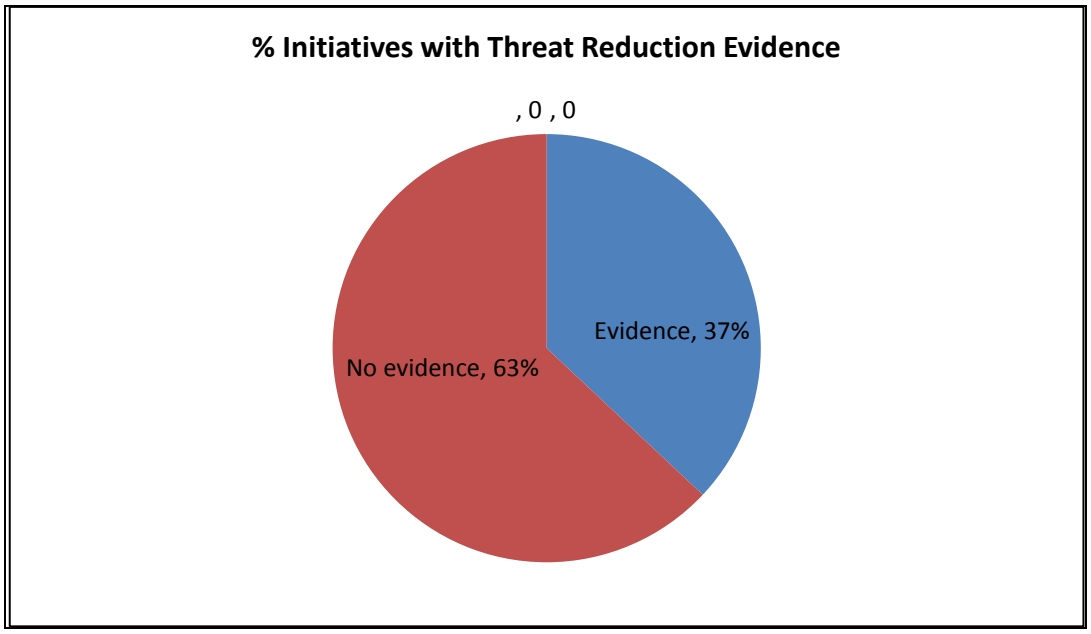
Bar chart showing main reasons accounting for decreasing or stable trends:

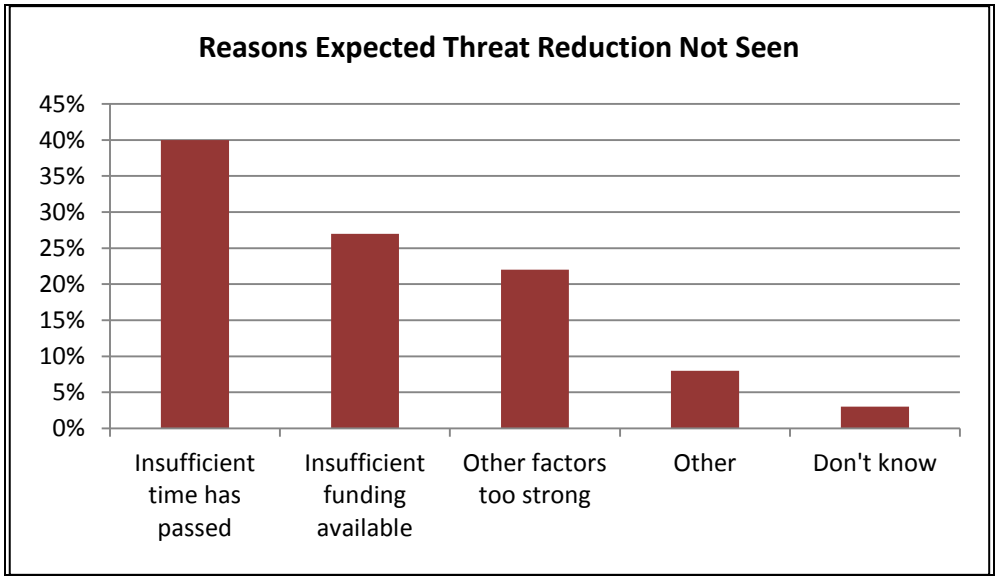


CA DES 04 (More resources/ support available for specific areas): Bar graph that shows 3 indicators of % objectives met for funding, human resources, programs; Could use red (<50%), yellow (51-75%), green (76% - 100%) categories to show how well they are doing



CADES 05 (Threats reduced): Pie chart showing % of initiatives with threat reduction evidence vs. not





6. Environmental Review

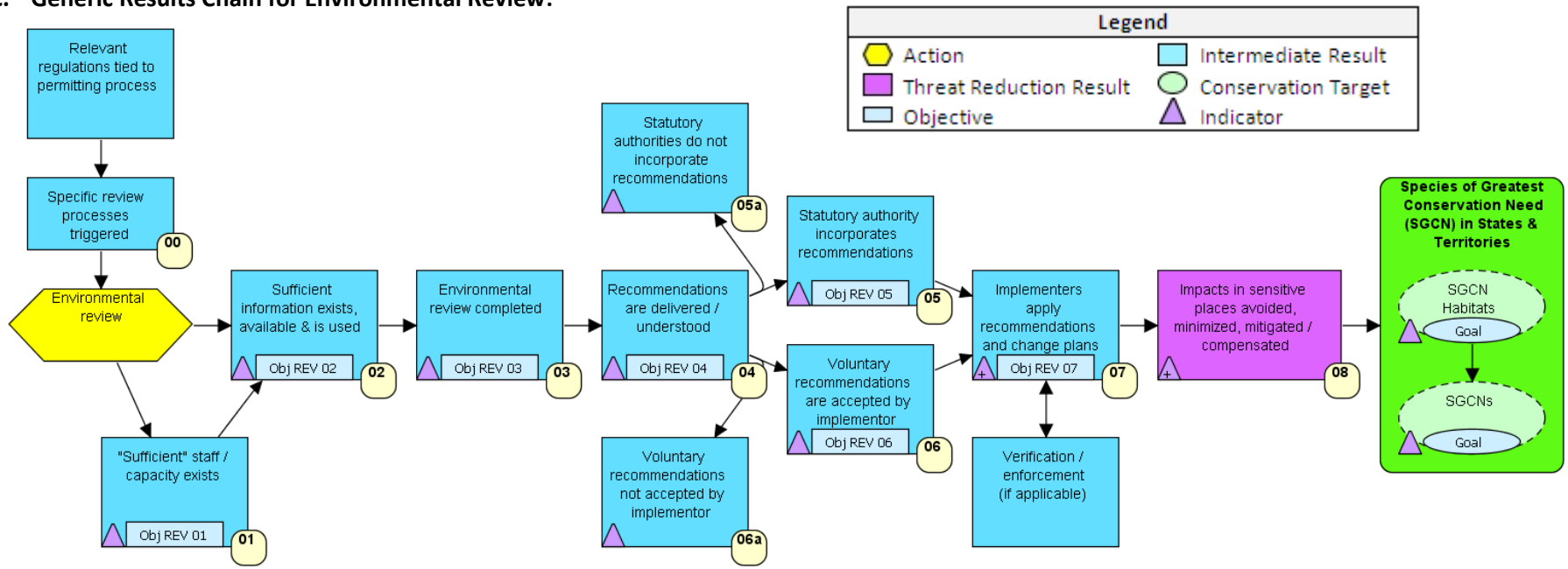
A. Definition of Environmental Review:

Environmental Review is defined as "Review of agency and private sector policies, projects and plans (primarily related to development and potential adverse impacts to natural resources) to help ensure potential impacts to fish and wildlife are avoided, minimized and/or compensated/mitigated."

B. Specific Examples of Environmental Review:

1. Review of proposed new landfill siting alternatives to recommend which alternative(s) will least impact natural resources immediately (direct) and over time (indirect, cumulative); and where mitigation activities and dollars would be best spent to compensate for unavoidable resource impacts.
2. Review new highway route alternatives and make recommendations for resource protection from planning through implementation.
3. Review of new road salt application policy to ensure timing, periodicity, and intensity avoid or limit potential impacts to natural resources.

C. Generic Results Chain for Environmental Review:

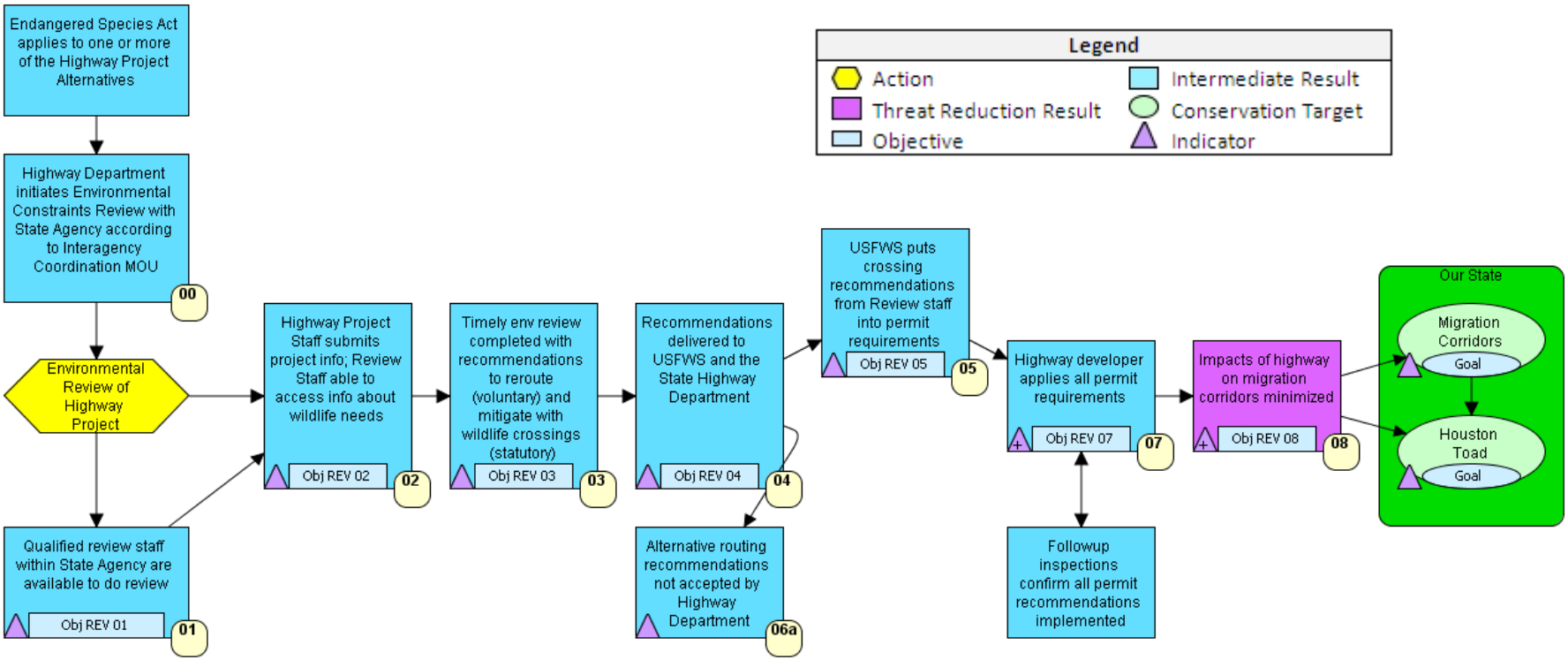


Description: As outlined on the right-hand side of the results chain, Environmental Review is fundamentally about avoiding, minimizing, or mitigating/compensating for threats posed by improperly sited or unsustainable development or policies which may adversely affect SGCN and their habitats. An environmental review strategy assumes that each state which conducts these reviews has regulations and a process for triggering reviews of development efforts or key policies proposed by government agencies or private entities (00). Important elements in this chain include the availability of sufficient staff expertise (01) and information (02) needed to conduct the review (03). Once the review has been completed and the recommendations delivered (04), the chain diverges in the cases of *statutory* guidance in which the regulatory authority has the power to impose recommendations (05) versus *voluntary* guidance in which case no regulations or formal relationships require the implementer to "comply" with the reviewers' suggestions (06).

If review recommendations are not accepted by either partner agencies (statutory guidance) and/or the implementer (voluntary guidance), then the agency needs to examine review practices, timelines, communication, collaboration, and messaging. Finally, the implementers need to apply the recommendations and modify their development plans or policies as appropriate (07). In some cases, verification or enforcement may be needed.

D. Example Results Chain for Environmental Review:

This fictitious example is based on a case of review of a highway project that potentially affects both key wildlife migration corridors that require wildlife crossings to mitigate their effects (accepted by the USFWS and made a mandatory condition of permits) and a toad species that requires rerouting of key sections of the highway (voluntary and in this case, not accepted by the State Highway Department).



E. Cross-walk of Generic and Real-world Example Results, Objectives and Measures for Environmental Review:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
ENV REV 01	**Generic:** "Sufficient" staff / capacity exists	Following initiation of Environmental Review, reviewers ensure "sufficient staff" or capacity exists in terms of number of staff and the specific skills they possess	Available staff / capacity	None	App 1. What types of projects /policies may be/were covered in your Environmental Review(s)? App 2a. Are/were there sufficient qualified staff or contractors available to conduct the review? App 2b. If not, how will/did you address the deficiency? *Note: these are suggested questions for the SWG proposal and the performance report.*
	Highway Example: *Qualified review staff within State Agency are available to do review*	*Sufficient staff who have experience with highway projects are available within the State Agency to compete the review on a timely basis*	*Availability of staff / contractors with appropriate qualifications*		
ENV REV 02	**Generic: "**Sufficient" information exists, available & is used	Prior to the review, "sufficient" information about affected species and habitats, potential impacts and sites affected, mitigation/compensation options and alternatives are identified and accessible	Availability of information	None	3a. Was sufficient information available for review on: Overall scope and activities of proposed project? Potentially affected species and habitats? Potential impacts and sites affected? Mitigation/compensation options? Alternatives? 3b. If not, how did you address the deficiency?
	Highway Example: *Highway Project Staff submits project info; Review Staff able to access info about wildlife needs*	*Prior to the review, Highway Project Staff submits plans, preliminary constraints, equipment and materials lists; Review Staff has easy access to natural resources occurrences maps, understands wildlife movement and habitat requirements*	*Availability of information on key topics*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
ENV REV 03	**Generic:** Environmental review completed	Review completed within established deadlines that addresses all potential impacts / concerns, and makes recommendations for avoidance, minimization and/or compensation / mitigation as needed	Degree to which review is timely, complete, comprehensive	# of reviews completed, sorted by proposed project type (e.g., wind transmission, roads) and by recommendation type (e.g., avoidance, minimization, compensation / mitigation)	4. Was the review completed on a timely basis within established deadlines? 5. Did the review address all potential impacts and make recommendations for avoidance, minimization and/or compensation/mitigation? 6. If mitigation was recommended (action instead of payment of compensation), did recommendation(s) include specific actions and/or effectiveness measures?
	Highway Example: *Timely env review completed with recommendations to reroute (voluntary) and mitigate with wildlife crossings (statutory)*	*Environmental review completed on time with recommendations to reroute some sections (voluntary) and mitigate with wildlife crossings (statutory)*	*Degree to which review is timely, complete, comprehensive*		
ENV REV 04	**Generic:** Recommendations are delivered / understood	Following review, recommendations are produced and communicated to the implementer in an appropriate fashion	Delivery of recommendations	None	7a. Did you deliver the recommendations from your review to the implementer(s), permitting agency(ies) and/or other departments within your agency and follow up with them to assure delivery, understanding, acceptance? 7b. If not, please explain.
	Highway Example: *Recommendations delivered to USFWS and the State Highway Department*	*Following review, recommendations are produced and communicated to the USFWS and State Highway Department who confirm receipt*	*Degree to which recommendations are delivered in an appropriate fashion*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
ENV REV 05	**Generic:** Statutory authority incorporates recommendations	Following the review, relevant permitting entity(ies) or regulatory agency(ies) accept and incorporate recommendations into their review/permit process and documentation	a. Degree to which recommendations are incorporated into relevant permits and documentation b. If not accepted, reasons for non-implementation	Number/% of instances accepted vs. not accepted	8a. Did permitting agency(ies) add your recommendations to their permit requirements? 8b. If not, explain why to the best of your knowledge.
	Highway Example: *USFWS puts crossing recommendations from Review staff into permit requirements*	*Following the review, the USFWS incorporates crossing recommendations from Review staff into permit regulations*	*Degree to which recommendations are incorporated into relevant permits and documentation*		
ENV REV 06	**Generic:** Voluntary recommendations are accepted	Following review, the project implementers agree to accept all recommendations	a. Degree to which recommendations are accepted by implementer b. If not accepted, reasons for non-implementation	Number/% of instances accepted vs. not accepted	9a. How many reviews conducted provided voluntary recommendations? How many of the projects accepted the voluntary recommendations? 9b. If reviews were not accepted, explain why to the best of your knowledge.
	Highway Example: *Alternative routing recommendations not accepted by Highway Department*		*Reasons for rejection of recommendations*		
ENV REV 07	**Generic:** Implementers apply recommendations	Following review, the project implementers incorporate all recommendations into project plan or policy	a. Degree to which implementers apply statutory recommendations from the permitting agency into project plan or policy b. Degree to which implementers apply voluntary recommendations	Frequency analysis of qualitative categories for recommendation incorporation OR average % recommendations incorporated into project plan or policy, by project type (e.g., wind transmission, roads) and by recommendation type (e.g., avoidance, minimization, mitigation / compensation)	10a. By project type and recommendation type, please provide average percentage for how often an implementer applied recommendations through PERMIT OR REGULATORY COMPLIANCE. 10b. By project type and recommendation type, please provide the frequency for how often an implementer applied VOLUNTARY recommendations. 10c. If your answer to the last two elements in Questions 10a or 10b is "don't know," or if only part of your recommendations were incorporated/followed, please explain why and

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
	Highway Example: *Highway developer applies all permit requirements*	*Highway developer applies all permit requirements to mitigate for impacts which cannot be avoided / minimized*	*Degree to which implementers apply statutory recommendations from the permitting agency into project plan or policy*		what might be done in future situations to encourage better reception.
ENV REV 08	**Generic:** Impacts in sensitive places avoided, minimized, or mitigated / compensated	Within X years of the designation of the conservation area, the desired threat reduction is seen	a. Degree to which implemented project avoids impacts in sensitive places b. Degree to which implemented project minimizes impacts in sensitive places c. Degree to which implemented project mitigates / compensates impacts in sensitive places	Qualitative assessments of acceptance by project type (All, Most, Some, None) OR , by project type (wind transmission, roads, O&G), OR Average % of impacts addressed by project type Addressed = avoided, minimized and mitigated / compensated	11. To what degree was each type of recommendation followed?
	Highway Example: *Impacts of highway on migration corridors minimized*	*Within 3 years, there are no impacts from the highway on key wildlife migration corridors*	*Degree to which implemented project avoids, minimizes, or mitigates / compensates impacts in sensitive places*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Highway Example: *Viability of Houston Toad Population*	***Goal:*** *Within 5 years, viable populations of Houston Toad exist at key sites*	*Population size of Houston Toad at key sites*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Highway Example: *Viability of key migration corridors*	***Goal:*** *Suitable corridors for key migrating species exist even after highway is completed*	*Habitat quality index*		

F. Measures Questionnaire for Environmental Review:

SWG PROPOSAL QUESTIONS

App 1. Based on your past activities, what types of projects/policies do you anticipate may be covered in your Environmental Review(s)?

Project/Policy Type	Yes	No
"Green" Power generation, transmission (solar, wind, tidal, other)	○	○
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)	○	○
Road and bridge new construction, expansion of existing, or repair	○	○
Urban development (buildings, parks, subdivisions, commercial centers, etc.)	○	○
Water development (reservoir, groundwater, surface water, etc.) or transmission	○	○
Interagency MOUs, MOAs	○	○
Other	○	○

If you selected "Other", please describe using the IUCN threats categories (add categories in drop down list)

App 2a. Are there sufficient qualified staff or contractors available to conduct the review?

Element	Yes	No
Sufficient, qualified staff available	○	○
Additional training of existing staff needed	○	○
Additional staff (temporary or permanent) needed	○	○
Additional staff from other programs needed	○	○
External contractor required/needed (special expertise, timing, seasonality, …)	○	○

App 2b. If not, how will you address the deficiency?

SWG PERFORMANCE REPORTING QUESTIONS

Environmental Review Types

1. What types of projects and policies were covered in your Environmental Review(s)?

Project/Policy Type	Yes	No	How many?
"Green" Power generation, transmission (solar, wind, tidal, other)	○	○	
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)	○	○	
Road and bridge new construction, expansion of exisiting, or repair	○	○	
Urban development (buildings, parks, subdivisions, commercial centers, etc.)	○	○	
Water development (reservoir, groundwater, surface water, etc.) or transmission	○	○	
Interagency MOUs, MOAs	○	○	
Other	○	○	

If you selected "Other", please describe using the IUCN threats categories (add categories in drop down list)

Staff Capacity to Conduct Review

2a. Were there sufficient qualified staff or contractors available to conduct the review?

Element	Yes	No
Sufficient, qualified staff available	○	○
Additional training of existing staff needed	○	○
Additional staff (temporary or permanent) needed	○	○
Additional staff from other programs needed	○	○
External contractor required/needed (special expertise, timing, seasonality, etc.)	○	○

2b. If not, how did you address the deficiency?

- ☐ Hired outside contractor
- ☐ Hired additional staff (temporary or permanent)
- ☐ Worked within agency to find qualified personnel to assist with review
- ☐ Negotiated time extension or other factor with submitter
- ☐ Refused review
- ☐ Other: describe in box below

Information to Conduct Review

3a. Was sufficient information available for review in the following categories:

Element	Yes	No
Overall scope and activities of proposed project?	○	○
Potentially affected species?	○	○
Potentially affected habitats?	○	○
Potential Impacts from the project or policy?	○	○
All Affected Sites?	○	○
Mitigation/Compensation Options?	○	○
Alternatives?	○	○

3b. If information was not available to complete the environmental review, how did you address the deficiency?

- ☐ Worked with agency or conservation partners to obtain additional EXISTING information
- ☐ Worked with agency or conservation partners to obtain additional NEW information
- ☐ Required submitter to provide additional needed information
- ☐ Negotiated time extension with submitter
- ☐ Refused review
- ☐ Other: describe in box below

Environmental Review Process

4. Was the review completed on a timely basis within established deadlines?

Project/Policy Type	How Many of Each Type		
	On Time, No Extension	On Time, With Extension	Not Within Deadline(s)
"Green" Power generation, transmission (solar, wind, tidal, other)			
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)			
Road and bridge new construction, expansion of exisiting, or repair			
Urban development (buildings, parks, subdivisions, commercial centers, etc.)			
Water development (reservoir, groundwater, surface water, etc.) or transmission			
Interagency MOUs, MOAs			
Other			

5. Did the review address all potential impacts?

Project/Policy Type	**How Many of Each Type**		
	Avoidance	Minimization	Mitigation / Compensation
"Green" Power generation, transmission (solar, wind, tidal, other)			
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)			
Road and bridge new construction, expansion of exisiting, or repair			
Urban development (buildings, parks, subdivisions, commercial centers, etc.)			
Water development (reservoir, groundwater, surface water, etc.) or transmission			
Interagency MOUs, MOAs			
Other			

6.. If mitigation was recommended (action instead of payment or compensation), did recommendation(s) include specific actions and/or effectiveness measures?

Conservation Action	**Effectiveness Measures Included in Recommendations**	**Effectiveness Measures Not Included in Recommendations**
Acquisition/Easement/Lease	○	○
Data Collection or Analysis	○	○
Management Planning	○	○
Direct Management of Natural Resources	○	○
Species Reintroduction/Restoration	○	○
Create New Habitat/Natural Processes	○	○
Training or Technical Assistance	○	○
Outreach or Education	○	○
Land Use Planning	○	○
Data Management or Maintenance	○	○
	○	○

7a. Did you deliver the recommendations from your review to the implementer(s), permitting agency(ies) and/or other departments within your agency and follow up with them to assure delivery, understanding, acceptance?

7b. If not, please explain.

Recommendations to Permitting or Regulatory Agency(ies)/Departments

8a. Did the permitting agency(ies) add your recommendations to their permit requirements? If not, explain why to the best of your knowledge.

Element	How many reviews shared?	Of those, how many incorporated in their permitting or recommendations?
Federal Agency(ies)		
External State Agency(ies)		
Internal [which program(s)?]		

8b. If not, explain why to the best of your knowledge.

Voluntary Recommendations

9a. How many reviews conducted provided voluntary recommendations? How many of the projects accepted the voluntary recommendations? (# or %)

9b. If reviews were not accepted, explain why to the best of your knowledge.

Recommendations Applied to Reduce Threats and Improve Status of SGCN and their Habitats

Monitoring 10a. By project type and recommendation type, please provide average percentage for how often an implementer applied recommendations through PERMIT OR REGULATORY COMPLIANCE.

Project Type	Average Percentage Applied # applied during implementation / total # of this type of project for which recommendations provided	Don't know *(see Question 7c)*
"Green" Power generation, transmission (solar, wind, tidal, other)		❍
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)		❍
Road and bridge new construction, expansion of existing, or repair		❍
Urban development (buildings, parks, subdivisions, commercial centers, etc.)		❍
Water development (reservoir, groundwater, surface water, etc.) or transmission		❍
Interagency MOUs, MOAs		❍
Other		❍

10b. By project type and recommendation type, please provide the frequency for how often an implementer applied VOLUNTARY recommendations

Project Type	Average Percentage Applied # applied during implementation / total # of this type of project for which recommendations provided	Don't know *(see Question 10c)*
"Green" Power generation, transmission (solar, wind, tidal, other)		❍
"Traditional" Power generation, transmission (nuclear, coal-fired, hydro, other)		❍
Road and bridge new construction, expansion of existing, or repair		❍
Urban development (buildings, parks, subdivisions, commercial centers, etc.)		❍
Water development (reservoir, groundwater, surface water, etc.) or transmission		❍
Interagency MOUs, MOAs		❍
Other		❍

Monitoring 10c. If your answer to the last two elements in Questions 10a or 10b is "don't know," or if only part of your recommendations were incorporated/followed, please explain why and what might be done in future situations to encourage better reception (2-3 ¶ sufficient).

11. To what degree was each type of recommendation followed?

Avoidance	All	Most	Some	None
Minimization	All	Most	Some	None
Compensation/Mitigation	All	Most	Some	None

Conservation Targets

Approximately, how many acres of SGCN habitat were protected through avoidance or minimization with all project areas reviewed? _____ acres

Approximately, how many acres of SGCN habitat were compensated/mitigated through recommendations made by these reviews? _____ acres

7. Management Planning

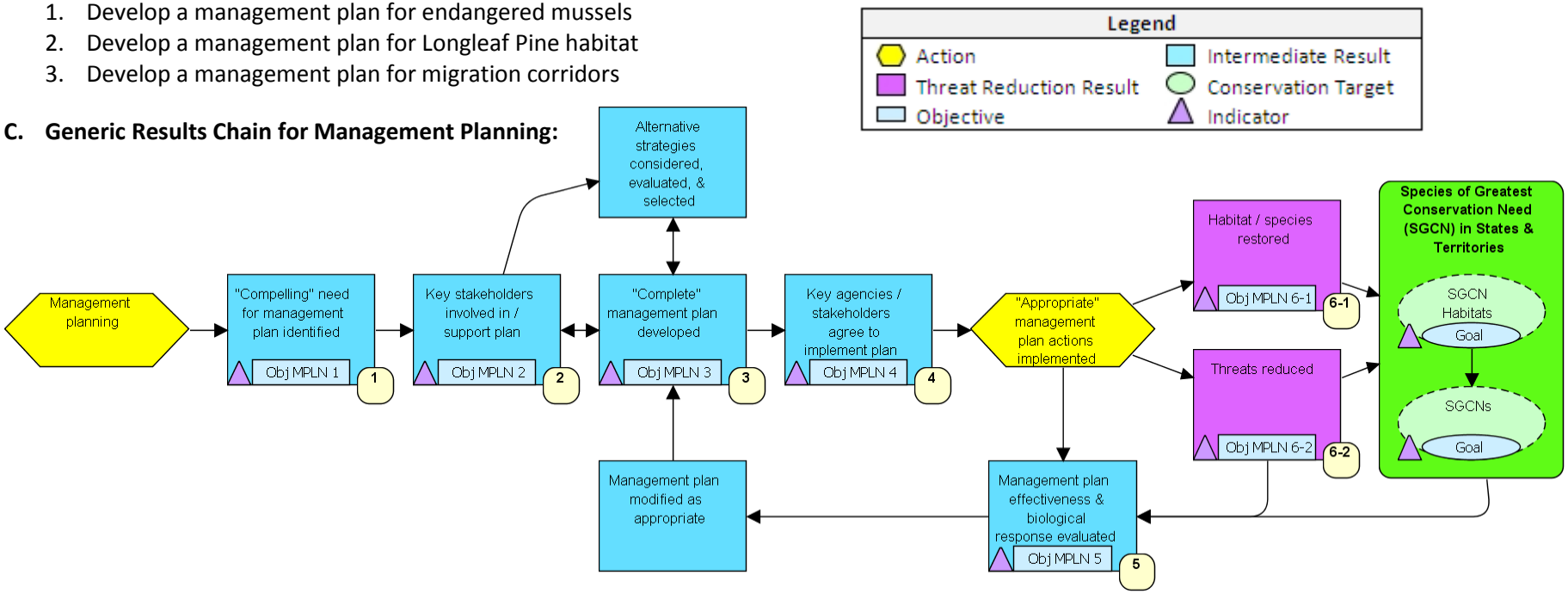
A. Definition of Management Planning:

Management Planning is defined as "Development of management plans for species, habitats, and natural processes."

B. Specific Examples of Management Planning:

1. Develop a management plan for endangered mussels
2. Develop a management plan for Longleaf Pine habitat
3. Develop a management plan for migration corridors

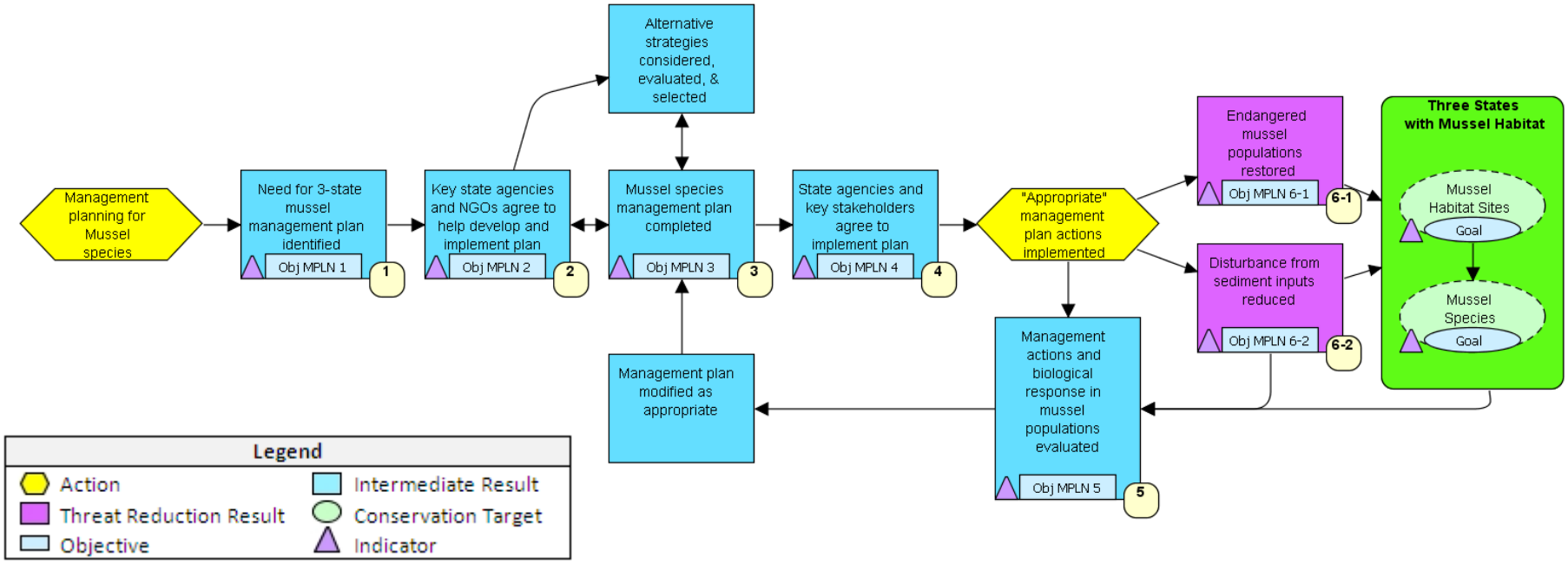
C. Generic Results Chain for Management Planning:



Description: All agencies use some process to develop and describe management actions. The Management Planning Results Chain describes a generic process for developing management plans for species, habitats, and natural processes. The planning process involves first identifying a "compelling" need for management planning (1) and the key stakeholders who will be involved in implementing or otherwise supporting the plan (2). It then involves developing a "complete" management plan that includes viability and threats analyses, an analysis of the factors contributing to the threats and key stakeholders (aka situation analysis), SMART objectives, strategy recommendations, work plan, budget, and a monitoring plan that includes assessing the biological response (3). A good planning process also considers and evaluates alternative strategies. Once the plan is developed, key agencies and stakeholders need to agree to implement the plan (4) which will consist of various management actions designed to restore habitats and species and/or reduce threats (6). It is also important to monitor the effectiveness of implemented actions, the threats, and the status of the conservation targets to adjust and adapt the plan as needed over time (5).

D. Example Results Chain for Management Planning:

This fictitious example is based on a case of developing a management plan for endangered mussel species across three states.



E. Cross-walk of Generic and Example Results, Objectives and Measures for Management Planning:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
MNG PLN 01	**Generic:** Compelling need for management plan identified	Prior to the planning work, an analysis of the situation is completed that outlines a "compelling" need for the management plan to meet specific and measurable threat reduction / restoration goals	"Compelling" argument developed: why plan is needed to meet specific and measurable threat reduction / restoration goals	None	App 1. Describe the threat reduction / restoration problems you are facing and why a management plan is needed to address these issues. App 2. Describe the specific and measurable goals that the plan is seeking to accomplish. *Note: these are suggested questions for the SWG application process.*
	Mussel Example: *Need for 3-state mussel management plan identified*	*Prior to the planning work, a compelling argument is made why mussel planning is required*	*"Compelling" argument developed: why plan is needed to meet restoration goals for the mussels*		
MNG PLN 02	**Generic:** Key stakeholders involved in / support plan	Prior to drafting the plan, key agencies and other stakeholders are involved in drafting plan and/or supportive of the plan (or at least not hostile)	"Key" stakeholders and the roles they play "Key" stakeholder support for the plan	None	App 3. Describe who the key stakeholders are, what their roles are, and their level of support. App 4. Are there stakeholders who will actively work to block the process? How will you engage them? *Note: these are suggested questions for the SWG application process.*
	Mussel Example: *Key state agencies and NGOs agree to help develop and implement plan*	*Prior to drafting the plan, key agencies in the three states as well as key NGOs agree to help draft and implement the plan*	*"Key" stakeholder support for the plan*		
MNG PLN 03	**Generic:** "Complete" management plan developed	"Complete" management plan is developed that includes viability and threats analyses, situation analysis, SMART objectives, strategy recommendations, work plan, budget, and monitoring plan including biological response	Assessment of elements of management plan against standards for "complete" plan	% of planning efforts that result in complete plans	1. Does management plan include suitable: a. Species (system) assessment? b. Viability & threats analyses c. Situation analysis d. SMART objectives e. Strategy recommendations f. Detailed work plan with schedule and personnel g. Budget including funding sources, funding requested, funding in place h. Monitoring plan / biological response 2. Did the plan consider appropriate alternative responses?
	Mussel Example: *Mussel species management plan completed*	*Within 15 months, a complete management plan is developed and reviewed for the mussel species.*	*Assessment of elements of management plan against standards for "complete" plan*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
MNG PLN 04	**Generic:** Key agencies / stakeholders agree to implement plan; key agencies / stakeholders actually implement agreed upon actions	Key agencies and other stakeholders receive the plan and agree to implement it in a timely basis	*a. Degree to which responsible agencies incorporate plan elements into their own workplans and resource it appropriately* *b. Degree to which agencies complete agreed upon activities in a timely manner*	% of planning efforts that were accepted by necessary agencies % of planning efforts that are largely "on-track"	3. Did key implementing agencies build agreed upon actions into their own workplans? 4. If not, why? 5. Did the key implementing agencies implement the planned actions on a timely basis? *(If not why)* 6. Since the completion of the management plan, have you seen an increase in the following resources to implement the plan, both within your agency/and or externally? a. Funding b. Human resources c. Programs
	Mussel Example: *State agencies and key stakeholders agree to implement plan and then follow through*	*Within 6 months of the plan's completion, key agencies in the 3 states have plan implementation built into their work schedules and then follow through*	*a. Degree to which responsible agencies incorporate plan elements into their own workplans and resource it appropriately* *b. Degree to which agencies complete agreed upon activities in a timely manner*		
MNG PLN 05	**Generic:** Management plan effectiveness & biological response evaluated	The plan is evaluated and updated on an ongoing basis including assessing biological response of key targets	Evidence of appropriate monitoring of both the effectiveness of actions and the biological response of key targets	% of planning efforts that have appropriate monitoring	7. Is the management plan regularly monitored? a. Effectiveness of actions implemented under the management plan? b. Biological response of key targets? 8. Has the plan been updated based on monitoring results?
	Mussel Example: *Management actions and biological response in mussel populations evaluated*	*The plan is evaluated and updated on a regular basis including assessing biological response of key species*	*Evidence of appropriate monitoring*		
Other Actions	**"Appropriate" Management Plan Actions Implemented**				
MNG PLN 06-1	**Generic:** Habitat / species restored	Within X years of the training, the desired habitat / species restoration occurs	Evidence that conservation area designation is restoring habitats / species	% of initiatives that show viable restoration	9. Is there evidence that the species / habitats have been restored? 10. Additional comments or anecdotes (optional)

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
	Mussel Example: *Endangered mussel populations restored*	*Within 7 years, viable populations of key mussels established at 25 new sites across the 3 states*	*Change in viability of mussel populations in key sites*		
MNG PLN 06-2	**Generic:** Threats reduced	Within X years of completing the management plan, the desired threat reduction is seen	Evidence that management plan is reducing key threats	% of initiatives that show a reduction in key threats being addressed by management plan	11. What threat(s) were you hoping to address through your management plan(s), and do you have evidence that the plan(s) are leading toward reductions in any of these threats? 12. Additional comments or anecdotes (optional) 13. Do you have any suggestions to improve the planning process?
	Mussel Example: *Disturbance from sediment inputs reduced*	*Within 7 years, sediment input into key stream habitats has been reduced to acceptable levels*	*# of sites with acceptable sediment load levels*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Mussel Example: *Viability of overall mussel populations improves*	***Goal:*** *Within 7 years, there are at least 15 viable populations of mussels across the three states*	*# of viable mussel populations*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Mussel Example: *Mussel habitat improves*	***Goal:*** *Within 7 years, habitat for all 15 populations is at suitable levels*	*# of sites with suitable habitat*		

F. Measures Questionnaire for Management Planning:

SWG APPLICATION QUESTIONS

Need for a Management Plan

APP1. Describe the threat reduction / restoration problems you are facing and why a management plan is needed to address these issues.

APP2. Describe the specific and measurable goals that the plan is seeking to accomplish.

Goal	Description
1.	
2.	
3.	
Etc.	

APP3. Describe who the key stakeholders are, what their roles are, and their level of support.

Stakeholder	Role	Level of Support (Strongly For / Moderately For / Neutral / Moderately Against / Strongly Against / NA)

APP4. Are there stakeholders who will actively work to block the process? How will you engage them?

SWG REPORT QUESTIONS

Assessment of Elements of Management Plan

1. Does the management plan include suitable:

Element	Complete	Partial	None
Viability & threats analysis	○	○	○
Situation analysis	○	○	○
SMART objectives	○	○	○
Strategy recommendations	○	○	○
Detailed work plan with schedules	○	○	○
Detailed budget	○	○	○
Monitoring Plan	○	○	○

2. Did the plan consider appropriate alternative responses?

Implementation of Plan

3. Did the key implementing agencies build agreed upon actions into their own workplans?

4. If not, why?

5. Did the key implementing agencies implement the planned actions on a timely basis?

- ○ All or almost all
- ○ Most
- ○ About half
- ○ Some
- ○ Few or none
- ○ Don't know

Please explain:

6. Since the completion of the management plan, have you seen an increase in the following resources to implement the plan, both within your agency/and or externally?

Resource	Yes	No	Don't Know	% increase
Internal agency funding	○	○	○	%
Internal agency human resources	○	○	○	%
Internal agency programs	○	○	○	%
External funding	○	○	○	%
External human resources	○	○	○	%
External agency programs	○	○	○	%

Monitoring

7. Is the management plan regularly monitored? Please describe.

Resource	Yes	No	Don't Know	Comment
a. Effectiveness of actions	○	○	○	
b. Biological response of key targets	○	○	○	

8. Has the plan been updated based on monitoring results? Please describe

Restoration Outcomes

9. Is there evidence that the species / habitats have been restored?

10. Additional comments or anecdotes (optional)

Threat Reduction

11. What threat(s) were you hoping to address through the designation of conservation areas, and do you have evidence that the designation(s) are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org.

Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	
7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	

11 Climate Change & Severe Weather	☐	y/n/don't know	

12. Additional comments or anecdotes (optional)

13. Do you have any suggestions to improve the planning process?

8. Land Use Planning

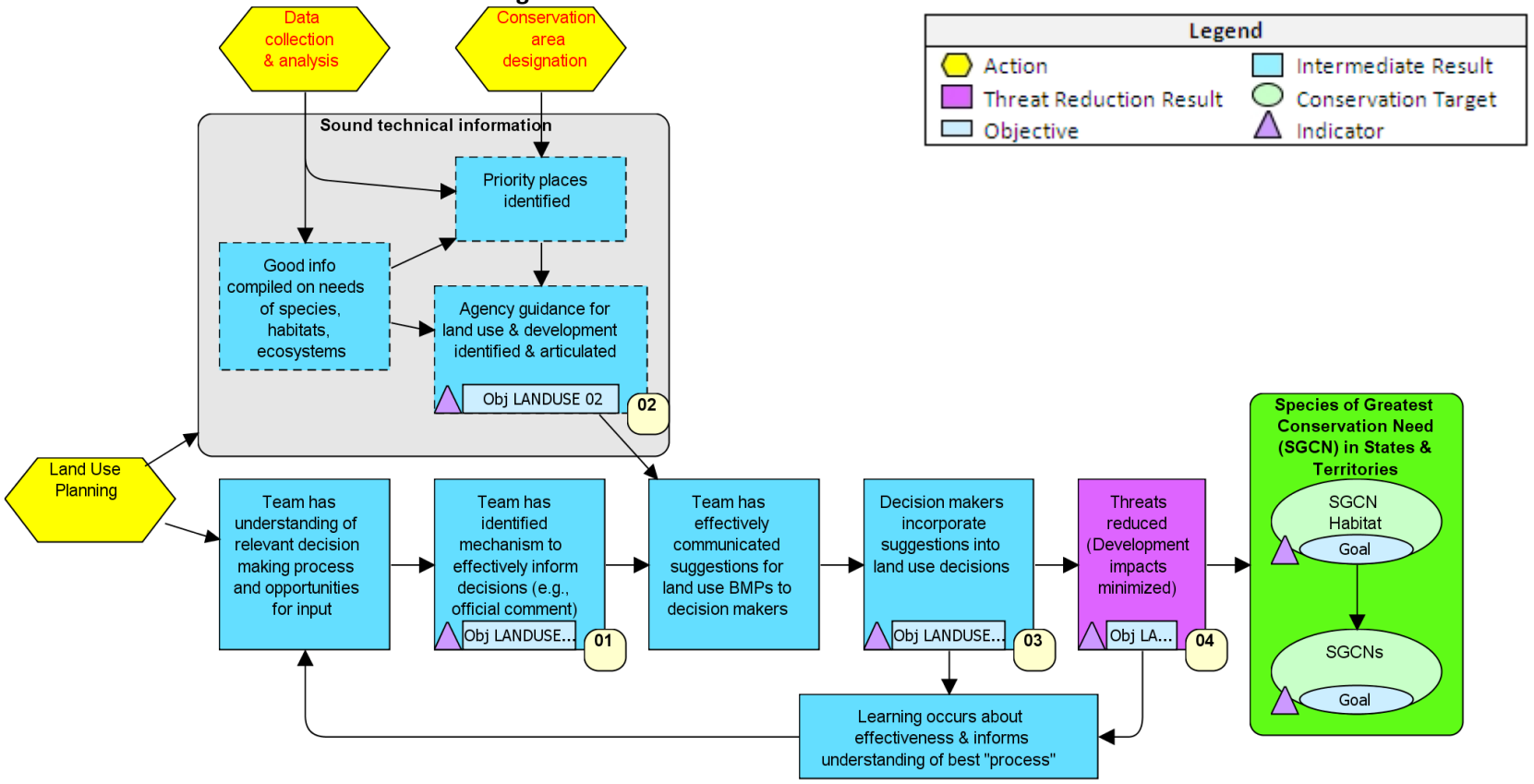
A. Definition of Land Use Planning:

Land Use Planning is defined as "Leading or participating in land use planning for rural, urban, or agricultural lands."

B. Specific Examples of Land Use Planning:

1. Develop county-wide zoning plans.
2. Participate in workgroup regarding low impact development siting.
3. Develop city plan for implementing best management practices for stormwater management.

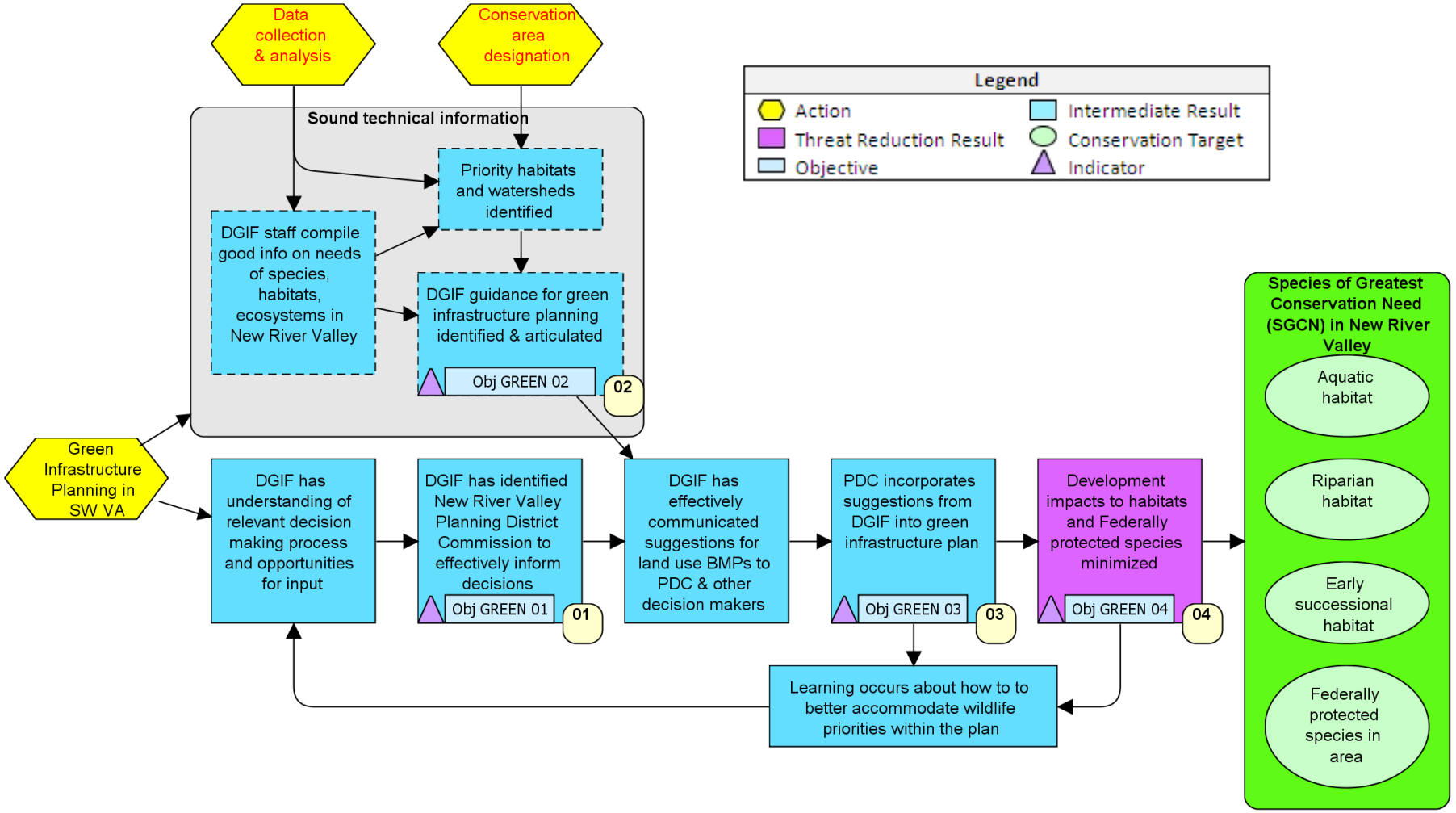
C. Generic Results Chain for Land Use Planning:



Description: All Wildlife Action Plans indicate habitat loss is an important issue impacting the nation's species of greatest conservation need (SGCN). In most states, land use planning decisions are made by municipal or county planners or volunteer land use commissions. The Land Use Planning Results Chain demonstrates how wildlife agency personnel work with local land use decision makers to accommodate wildlife within rural, urban, and agricultural land use plans. This process involves: the wildlife agency personnel using data to identify wildlife needs and habitat priorities within the various political jurisdictions (gray box, including Result 02); understanding the decision making process and identifying a mechanism to inform decisions (01); effectively communicating those needs and priorities to the appropriate decision makers; and helping incorporate wildlife needs and habitat priorities into the final land use plans (03). If this happens as anticipated, it assumed that threats will be reduced and in particular, development-related threats will be minimized (04), leading to benefits for SGCN and their habitat. The chain above also includes a feedback loop resulting from the monitoring of wildlife responses to the changing land uses and the reevaluation the wildlife needs and habitat priorities based upon the new information.

D. Example Results Chain for Land Use Planning:

This results chain draws on and is adapted from a real-world example to initiate a Green Infrastructure planning effort in southwestern Virginia. The VA Department of Game and Inland Fisheries (DGIF) was invited to participate to ensure that local wildlife priorities were adequately considered throughout the process. *Note: Objectives and measures presented in the table for this example are fictional but grounded in this real-world example.*



E. Cross-walk of Generic and Example Results, Objectives and Measures for Land Use Planning:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
LANDUSE 01	**Generic:** Team has identified mechanism to effectively inform decisions	Within X months/years of starting the land use planning initiative, there is a strategy in place for how to most effectively inform key decision makers	Evidence of a strategy in place for how to most effectively inform key decision makers	% of Land Use Planning actions which have evidence of a strategy in place for how to most effectively inform key decision makers	1. Did the agency use a formal plan to communicate information to the planning effort? If yes, which of the following groups were to be contacted? 2. What mechanisms were used to communicate with the target audiences? 3. At approximately which points did your agency provide information to the planning process? 4. How would you characterize your agency's participation in the planning process?
	Green Infrastructure Example: *DGIF has identified New River Valley Planning District Commission to effectively inform decisions*	*Within 6 months of start of the green infrastructure planning initiative, there is a strategy in place for how to most effectively inform green infrastructure planning officials*	*Evidence of a strategy in place for how to most effectively inform green infrastructure planning officials*		
LANDUSE 02	**Generic:** Agency guidance for land use & development identified & articulated	Within X months/years of starting the land use planning initiative, agency land use planning guidance is based on information resources describing the needs of species, habitats, and ecosystems, as well as identified priority places	Evidence that agency guidance is based on information resources describing the needs of species, habitats, and ecosystems, as well as identified priority places	% of land use planning actions which have evidence that agency guidance is based on information resources describing the needs of species, habitats, and ecosystems, as well as identified priority places (% of each category identified)	5. How was the wildlife agency's guidance regarding wildlife and habitat priorities determined? 6. Were conflicting technical, regulatory, or oversight identified during the planning process? If yes, to what degree did this conflict affect the adoption of agency guidance?
	Green Infrastructure Example: *DGIF guidance for green infrastructure planning identified & articulated*	*Within 6 months of joining the Planning District Commission, DGIF staff articulate relevant guidance on preserving /restoring aquatic, riparian, and early successional habitat based on the Wildlife Action Plan, Virginia Fish and Wildlife information system, and expert opinions of those working within the area*	*Evidence that DGIF guidance is based on the Wildlife Action Plan, Virginia Fish and Wildlife information system, and expert opinions of those working within the area*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
LANDUSE 03	**Generic:** Decision makers incorporate suggestions into land use decisions	Within X years of starting the land use planning initiative, key decision makers incorporate Y% of recommendations about priority areas and relevant BMPs into land use planning decisions	% of recommendations about priority areas and relevant BMPs incorporated into land use planning decisions	% of Land Use Planning actions which have met their objectives for incorporating recommendations about priority areas and relevant BMPs into land use planning decisions	7. Was a final land use plan developed from this planning process? 8. Approximately what percentage of the wildlife agency's recommendations was incorporated into the final land use plan? If fewer than half of the wildlife agency's recommendations were incorporated into the final plan, please provide a brief explanation regarding these decisions. 9. During the course of this planning, were other statutory, regulatory, or oversight guidelines identified that superseded the wildlife-related comments? (check all that apply)
	Green Infrastructure Example: *PDC incorporates suggestions from DGIF into green infrastructure plan*	*Within 2 years of DGIF's participation in the PDC, PDC officials incorporate at least 40% of recommendations about priority habitats and relevant BMPs into the green infrastructure plan*	*% of recommendations about priority areas and relevant BMPs incorporated into land use planning decisions*		
LANDUSE 04	**Generic:** Threats reduced (Development impacts minimized)	Within X years of the start of the land use planning action, there is evidence of development impacts being reduced	Evidence that land use planning action is reducing development impacts	% of initiatives that show the expected reduction in key threats (development impacts) being addressed by land use planning actions	10. What threat(s) were you hoping to address through land use planning, and do you have evidence that your land use planning efforts are leading toward reductions in any of these threats? 11. Please provide any narratives, case studies, or additional comments you may have related to your work in land use planning (optional)
	Green Infrastructure Example: *Development impacts to habitats and Federally protected species minimized*	*Within X years of the start of the green infrastructure planning process, there is evidence of development impacts being reduced*	*Evidence that green infrastructure planning is reducing development impacts*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Green Infrastructure Example: *Forthcoming*				

F. Measures Questionnaire for Land Use Planning:

Mechanism to Inform Decisions Identified

1. Did the agency use a formal plan to communicate information to the planning effort?

   ○ Yes

   ○ No

Programming note: If "no," redirect to Q3)

If yes, which of the following groups were to be contacted? *Check all that apply:*

- ☐ Local elected officials
- ☐ Regional/state elected officials
- ☐ Local planning officials
- ☐ Regional/state/federal planning officials
- ☐ State/federal agency personnel
- ☐ Media
- ☐ Conservation groups
- ☐ Industry groups
- ☐ Businesses
- ☐ Individual landowners
- ☐ General public
- ☐ Other (please specify:_____)

2. What mechanisms were used to communicate with the target audiences? *Check all that apply:*
   - ☐ In-person meetings
   - ☐ Formal presentations to elected officials and/or planning officials
   - ☐ Presentations at public meetings
   - ☐ Formal written comments
   - ☐ Participation in planning workshops or conferences
   - ☐ Interviews with media
   - ☐ Other (please specify) _____

3. At approximately which points did your agency provide information to the planning process? (check all that apply)
   - ☐ At the beginning of the planning process (i.e., scoping phase)
   - ☐ Approximately half way thru the planning process (comments to a technical review team, review draft, etc.)
   - ☐ At the end of the planning process (comment on a final draft)

4. How would you characterize your agency's participation in the planning process? (check all that apply)
   - ☐ Commenter (only provided information during public comment periods)
   - ☐ Contributor (provided information when requested by involved parties)
   - ☐ Partner (assigned agency personnel to provide information and actively work with planning officials to incorporate that information into the final plan)
   - ☐ Leader (agency staff coordinate the planning effort and are responsible for drafting the final plan)

Guidance for Land Use & Development Identified & Articulated

5. How were the wildlife agency's wildlife and habitat priorities identified? *Check all that apply:*

- ☐ Existing species mgmt/recovery plans (Please identify _____)
- ☐ Wildlife Action Plan
- ☐ Existing habitat mgmt/recovery plans (Please identify _____)
- ☐ Other existing natural resource management plan (e.g., climate change adaptation plan, state forest resource assessment, watershed management plan, green infrastructure plan, etc.) (Please identify _____)
- ☐ Statute, Regulation or Agency policy
- ☐ Peer-Reviewed Literature
- ☐ Precedent decisions provided in previous guidance
- ☐ Species/habitat info maintained and managed by the agency (GIS data, observation database, etc.)
- ☐ Best professional opinion of agency personnel
- ☐ Other (Please identify: _____)

6. Were conflicting technical, regulatory, or oversight guidelines identified during the planning process?

- ○ Yes
- ○ No

If yes, to what degree did this conflict affect the adoption of agency guidance?

- ○ Led to complete rejection of guidance
- ○ Led to partial rejection of guidance
- ○ Had little or no effect on guidance

Additional comments (optional):

Suggestions Incorporated into Land Use Decisions

7. Was a final land use plan developed from this planning process?

- ○ Yes (Please provide the title: _____)
  (Which agency/organization is responsible for maintaining this plan? _____)
- ○ No

8. Approximately what percentage of the wildlife agency's recommendations was incorporated into the final land use plan?

- ○ 75% to 100%
- ○ 50% to 74%
- ○ 25% to 49% (Please explain below)
- ○ 10% to 24% (Please explain below)
- ○ fewer than 10% (Please explain below)

If fewer than half of the wildlife agency's recommendations were incorporated into the final plan, please provide a brief explanation regarding these decisions.

9. During the course of this planning, were other statutory, regulatory, or oversight guidelines identified that superseded the wildlife-related comments? *(check all that apply)*

   ☐ Federal: (Briefly identify _____)
   ☐ State: (Briefly identify _____)
   ☐ Local: (Briefly identify _____)

Development Impacts Minimized

10. What threat(s) were you hoping to address through land use planning, and do you have evidence that your land use planning efforts are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org. *Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.*

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	
7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	
11 Climate Change & Severe Weather	☐	y/n/don't know	

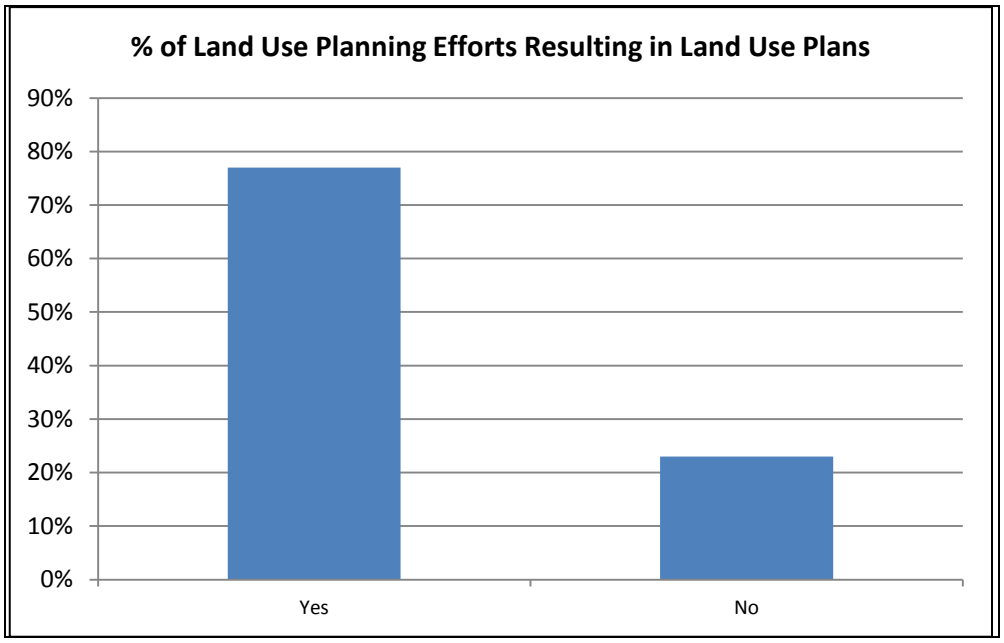
Additional Information

11. Please provide any narratives, case studies, or additional comments you may have related to your work in land use planning (optional).

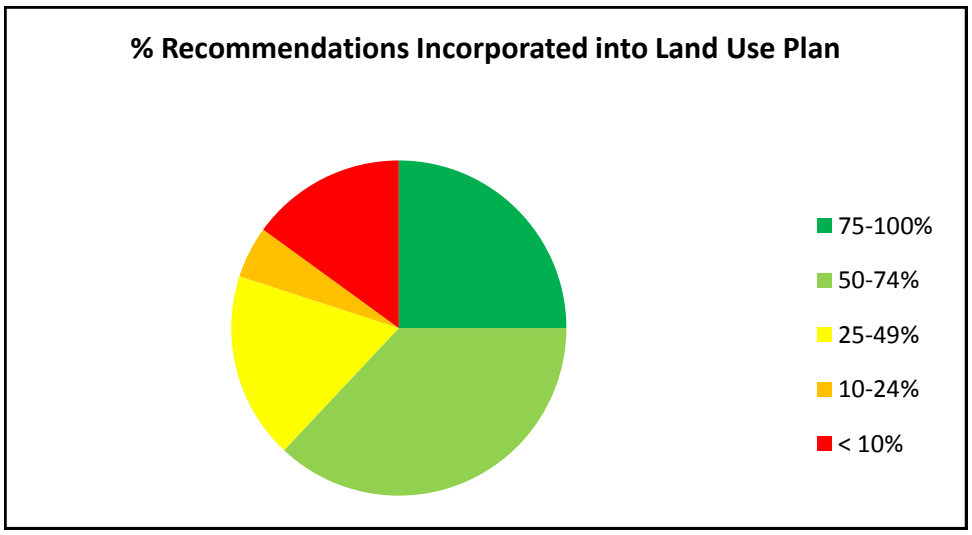
G. Example Graphs and Charts for Reports for Land Use Planning

Potential graphs and charts for a report could include:

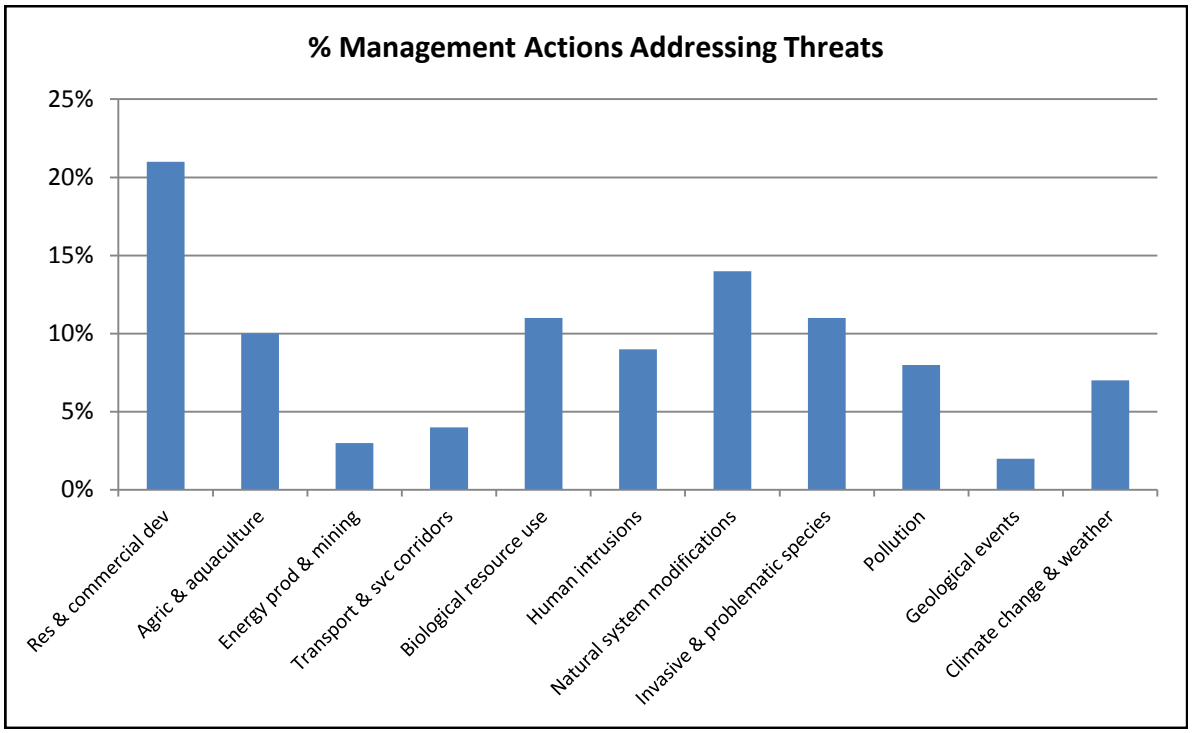
LANDUSE 03 (Decision makers incorporate suggestions into land use decisions): Bar graph or pie chart to show % of projects with land use plans developed



LANDUSE 03 (cont.) Pie chart to show percentage of recommendations incorporated into the final land use plan



LANDUSE 04 (Development impacts minimized): Table or histogram with IUCN-CMP threat categories & # being addressed through land use planning actions, do not report (in graph) on evidence of threat reduction. Note, this figure could also be shown as the total number of initiatives, rather than as percents within that total number.



9. Training & Technical Assistance

A. Definition of Training & Technical Assistance:

Training is defined as "Skills development for professionals, key stakeholders, or others to facilitate needed management activities and techniques." It does not include training that is minor or a routine component of implementing another action. It does include certification, or apprenticeship models. It is not the same as *information delivery* (education or outreach), although training could lead to an education or outreach conservation action for threat reduction.

Technical Assistance (TA) is defined as "Tangible, practical support (skills, knowledge, recommendations) delivered by experts to professionals or key stakeholders for the purpose of helping them implement specific conservation actions."

Both Training and Technical Assistance are precursors to improve the effectiveness of other conservation actions. Although the two are closely related:

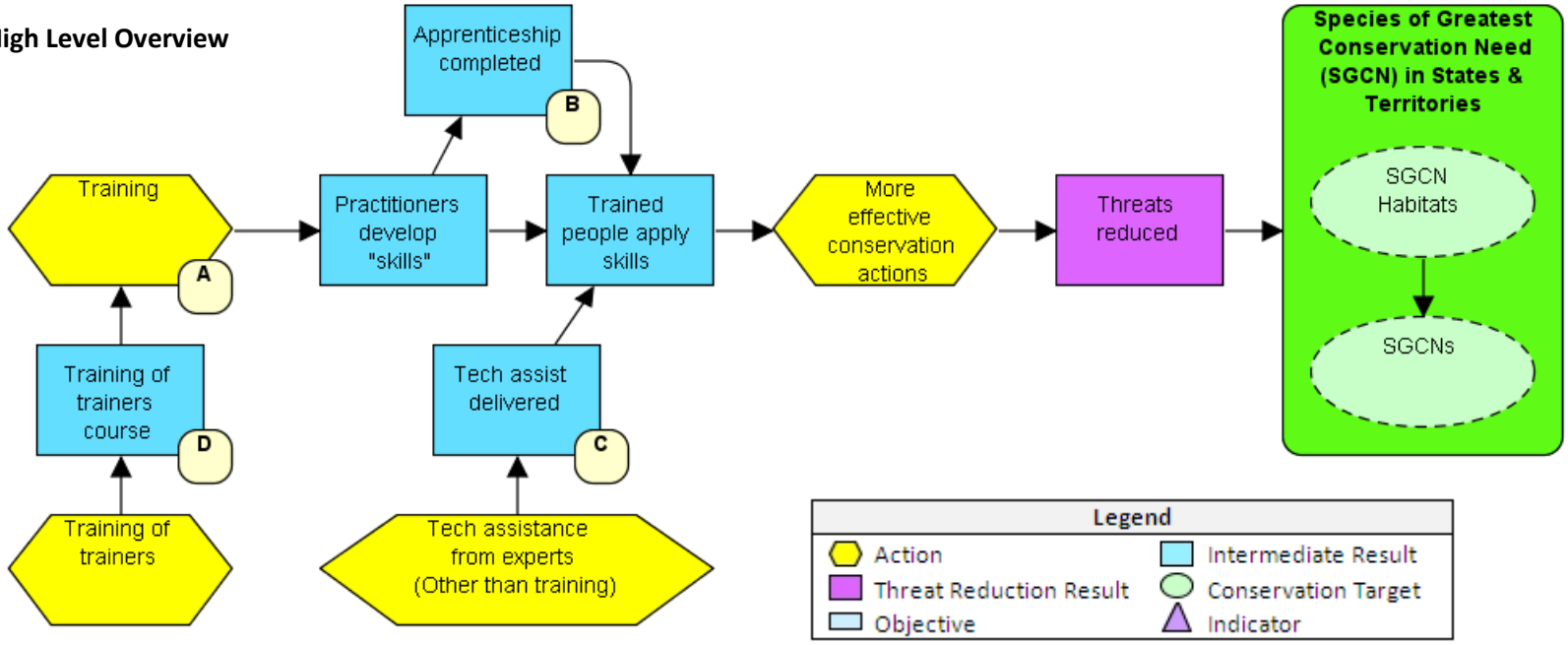
- Training is where you provide skills and hope managers will apply them to their issues – it's primarily about capacity building. Some training might require a formal or informal "apprenticeship" period in which there is more detailed direct training and skills delivery (e.g., step-wise learning process, series of classes leading to practical testing).
- TA is a special case within "training" where the trainer/expert works directly with managers, stakeholders, etc. to solve specific problems, often using skills that might be harder to teach in a group setting (e.g., engineering, prescribed fire, monitoring methods) *or* when delivering advice or recommendations for addressing a specific conservation action.
- The two overlap in that TA can be a way to further improve the skills of the trainee following a training session, and there may be some TA that occurs without a training component upon request from or to a recipient, as part of addressing a specific conservation action.

B. Specific Examples of Training and Technical Assistance:

1. Provide training for agency staff in reptile and amphibian assessment techniques
2. Provide classroom training in elements of prescribed fire qualifications (e.g., planning, tool familiarity, weather) to resource professionals who will eventually take "next steps" to become site-based Fire Operators and Leaders (e.g., Crew Leaders, Burn Bosses)
3. Provide qualified prescribed fire operators with an "apprenticeship" in field skills (e.g., leading crews, ignition, fire management, safety and emergency response) leading toward Fire Leader (Burn Boss) certification or qualification
4. Provide technical assistance in successful techniques to assess (field surveys, boundary document reading, conservation value rapid assessment), write successful terms and conditions, and monitor (timeframes, techniques, etc.) a conservation easement
5. Provide technical assistance in the form of one-on-one engineering consultation for dam removal
6. Provide technical assistance in the form of consulting advice and recommendations for specific Conservation Actions to a private landowner for them to do themselves (or to subcontract)

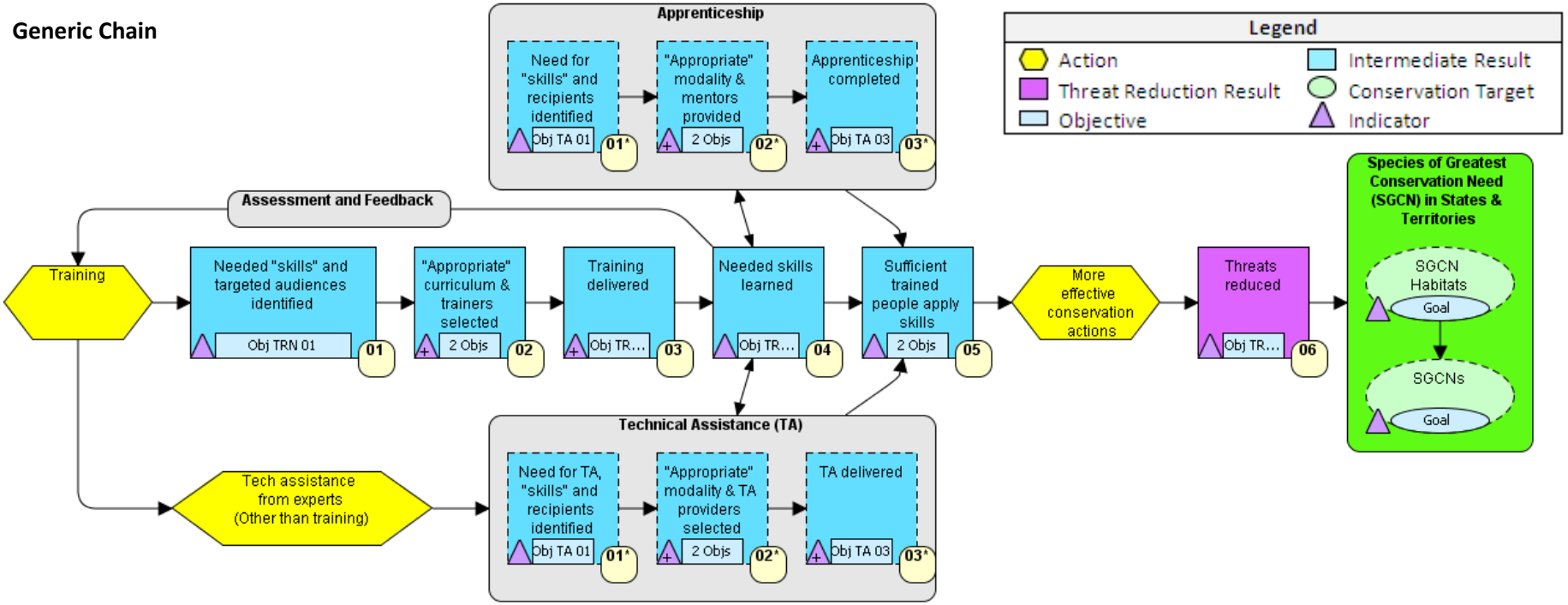
C. Generic Results Chain for Training & Technical Assistance:

High Level Overview



Description: In the High Level Overview Results Chain, training is fundamentally about providing targeted practitioners with the skills needed to more effectively implement other conservation actions to reduce threats or restore wildlife (A). In some cases, training courses also need to be supplemented with a formal or informal "apprenticeship" period in which the trainee gets additional coaching and experience (B). This apprenticeship is conceptually very similar to technical assistance (TA) in which needed skills are shared with key practitioners through direct work together (C). In effect, training is when the focus is on capacity building to solve future problems whereas TA is when the focus is addressing immediate problems. Finally, Training of Trainers is a special case in which the skills being delivered are the ability to train other practitioners (D).

Generic Chain

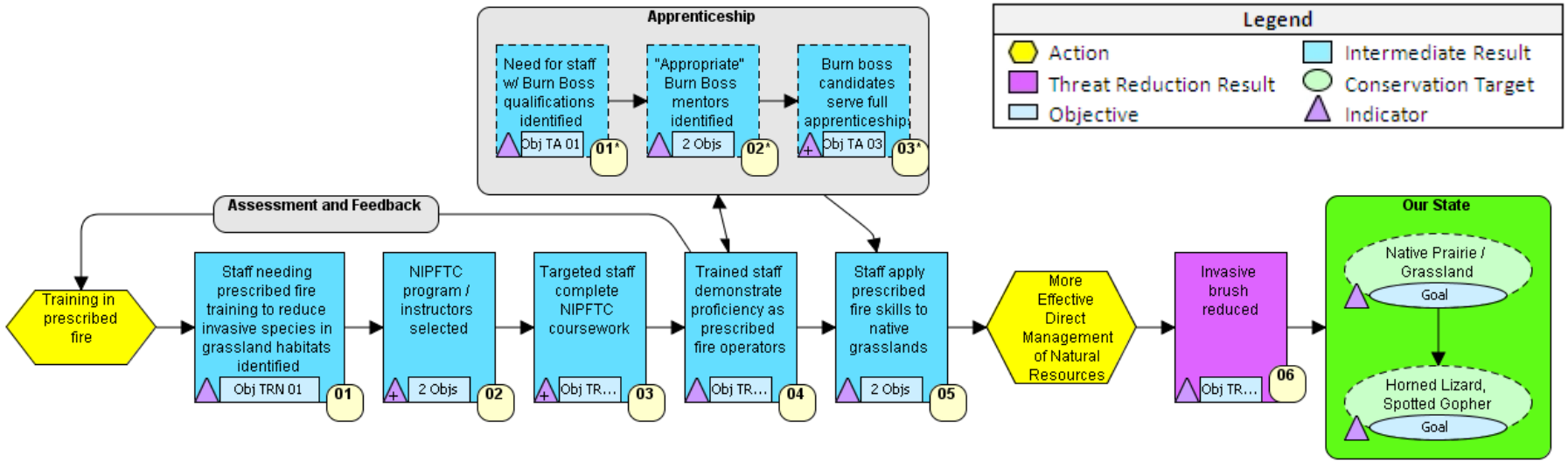


As shown in the Training Results Chain, prior to developing and conducting the training sessions, a justification or compelling argument for training must be created, and specific skills to be delivered and audiences to receive these must be identified (01). Once these are determined the curricula can be selected from existing sources or newly developed, and suitable trainers must be identified (02). Once the training itself takes place (03), trainees must demonstrate learning of the new skills (04) and then ultimately apply these skills to on-the-ground problems (05). In the case where skills are not learned, an assessment or feedback loop requires the training developers to determine whether the skills taught or methods of teaching were appropriate for the audience (and vice-versa), and to modify these accordingly. In some cases, an “apprenticeship” in which the trainee undergoes additional training under the guidance of an experienced mentor is required for certification or professional development. Ultimately, the objective is to have sufficient people with the ability to apply their skills which leads to more effective conservation actions, which in turn will reduce threats and improve SGCN and habitat status (06).

As depicted in the Technical Assistance Results Chain, technical assistance follows a similar pattern to training, but focused more on solving immediate problems and practical skills delivery “on the ground” rather than developing capacity. First, a justification or compelling argument for technical assistance must be created, and specific skills to be delivered and audiences to receive these must be identified (01*). Once these are determined, the modality and providers must be identified (02*) before the TA takes place (03*). Once the TA takes place, trainees must demonstrate learning of the new skills (04) and then ultimately apply these skills to on-the-ground problems (05).

D. Specific Example Results Chain for Training & Technical Assistance:

This fictitious example is based on a case of training and Burn Boss apprenticeship for prescribed fire.



E. Cross-walk of Generic and Real-world Example Results, Objectives and Measures for Training & Technical Assistance:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
TRN 01	**Generic:** Needed "skills" and targeted audiences identified	Before training is initiated, a compelling argument is laid out for specific "skills" needed by specific targeted individuals who will reduce threats / do restoration	"Compelling" argument developed: Appropriate needs / skills to solve a pressing threat reduction or restoration problem; Appropriate individuals are targeted	None	APP 1. Will this proposal include training, technical assistance, or both? APP 2. Describe the threat reduction / restoration problem you are facing. a. What conservation actions are needed to solve this problem? b. What skills are needed/missing in order to apply these actions? APP 3. Who will be trained? a. Who are the targets of these trainings? b. What are the participant prerequisites needed to attend this training? *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *Staff needing prescribed fire training to reduce invasive species in grassland habitats identified*	*Six months before the training, at least 15 land managers who need prescribed fire training for their jobs have been identified*	*"Compelling" argument developed in terms of skills needed and trainees selected*		
TRN 02-1	**Generic:** "Appropriate" curriculum selected	Before the training is initiated, an "appropriate" curriculum is selected or developed for the audience's learning style including delivery method, location, timing, examples	Qualitative assessment of "appropriate" curriculum development	% types of curricula sorted by actions	APP 4. What curriculum will you use for your training? APP 5. Describe the rationale for selecting this curriculum. *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *NIPFTC program selected*	*The National Interagency Proscribed Fire Training Center (NIPFTC) offers professional-grade training that meet our needs to partners including our agency; costs are within our budget and the timing meets our needs*	*Qualitative assessment of "appropriate" curriculum development*		
TRN 02-2	**Generic:** "Appropriate" trainers selected	Before the training is initiated, "appropriate" trainers are selected. Appropriate = With relevant skills, teaching competence, etc.	Qualitative assessment of "appropriate" trainers selected	None	APP 6. Describe the knowledge, skills, and teaching ability qualifications of the proposed trainers. *Note: these are suggested questions for the SWG proposal process.*

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
	Fire Example: *NIPFTC trainers available*	*NIPFTC professional trainers, who are nationally recognized as the most capable for prescribed fire instruction to address natural resources threats/restoration, are available for this course*	*Qualitative assessment of "appropriate" trainers selected*		
TRN 03	**Generic:** Sufficient trainees trained	At the end of the training period, xx% of targeted individuals have attended required number of training modules	a. # of trainings b. # of individuals trained c. % of targeted individuals trained	a. Number of trainings conducted sorted by topic/action b. Number of individuals trained sorted by topic/action c. Average % of target audience met across project sorted by topic/action	1. How many training modules were conducted for each action? 2. How many individuals participated in and COMPLETED the training module/sessions for each action? 3. What % of your targeted audience completed all trainings proposed as part of this project?
	Fire Example: *Targeted staff complete NIPFTC coursework*	*By the end of the training period, at least 13 of the 15 targeted individuals have attended the 3 NIPFTC training courses*	a. # of NIPFTC trainings attended b. # of individuals completing all 3 NIPFTC courses c. % of 15 targeted individuals trained		
TRN 04	**Generic:** Needed skills learned	At the end of the training, at least xx% of trainees demonstrate minimum proficiency in the needed skills	% of trainees demonstrating proficiencies	Average % of targeted trainees that demonstrate minimum threshold proficiencies	4. What % of trainees demonstrated minimum threshold proficiencies at the end of the training? 5. How did you make this assessment? 6. What were the barriers keeping trainees from passing?
	Fire Example: *Trained staff demonstrate proficiency as proscribed fire operators*	*At the end of the training, at least 13 targeted staff members have proficiency in basic proscribed fire skills*	*% and total # of trainees who demonstrate proficiency in basic proscribed fire skills*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
TRN 05	**Generic:** Sufficient trained people apply skills	Within X months of the training, xx% of trainees successfully apply their new skills at least once to appropriate problems Within X months of the end of the training, there are sufficient numbers of trained individuals to meet the threat reduction / system restoration needs who are actively applying their skills	# / % of trained individuals applying skills % increase in capacity of people with skills	Average % of targeted trainees that have applied skills	7. What % of trainees who completed the training have applied their skills at least once? 8. How did you determine whether trainees have applied skills? 9. What is the % increase in capacity (people sufficiently trained) who have the skills to undertake needed conservation actions? *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *Staff apply prescribed fire skills to native grasslands*	*Within 6 months of the training, at least 12 of the trainees successfully apply their new skills at least once to manage a controlled burn on land that they manage; Within 6 months of the end of the training, there are sufficient numbers of trained fire operators and crew leaders to use prescribed fire to remove invasive brush from key sites in our state*	*# / % of trained individuals applying skills* *% increase in capacity of people with applied fire skills*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
TA 01*	**Generic:** Need for TA, "skills" and recipients identified	Before TA is initiated, a compelling argument is laid out for specific "skills" (skills, knowledge, advice) needed by specific targeted individuals that are needed to reduce threats / do restoration	"Compelling" argument developed: Appropriate needs / skills to solve a pressing threat reduction or restoration problem; Appropriate individuals are targeted	None	APP 2.* Describe the threat reduction / restoration problem you are facing. a. What conservation actions are needed to solve this problem? b. What skills are needed/missing in order to apply these actions? APP 3.* Who will receive technical assistance? a. Who are the targets of this technical assistance? b. What are the participant prerequisites needed to receive technical assistance? *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *Need for staff with Burn Boss qualifications identified*	*After the initial training, at least 3 staff who could serve as Burn Bosses are identified*	*"Compelling" argument developed*		
TA 02-1*	**Generic:** "Appropriate" modality selected	Before the TA is initiated, an "appropriate" modality is selected	Qualitative assessment of "appropriate" modality selection	None	APP 4.* What modality will/did you use for your assistance? APP5.* Describe the rationale for selecting this modality. *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *"Appropriate" modality selected*	*Before the apprenticeship is initiated, an appropriate mentorship model is selected*	*Qualitative assessment of "appropriate" modality selection*		
TA 02-2*	**Generic:** "Appropriate" TA providers selected	Before the TA is initiated, "appropriate" provider(s) are selected	Qualitative assessment of "appropriate" trainers selected	None	APP 6.* Describe the knowledge, skills, and teaching ability qualifications of the proposed technical assistance providers. *Note: these are suggested questions for the SWG proposal process.*
	Fire Example: *"Appropriate" Burn Boss mentors identified*	*Before the apprenticeship is initiated, at least two qualified burn boss mentors are identified*	*Prescribed burn mentors identified*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
TA 03*	**Generic:** Sufficient recipients receive TA	At the end of the TA period, xxx individuals have received needed TA	a. # of individuals receiving TA b. % of targeted individuals receiving TA	a. Number of individuals receiving TA sorted by topic/action b. Average % of target audience met across project sorted by topic/action	1.* What was the total number of individuals receiving TA? 3.* What % of your target audience received necessary TA proposed as part of this project?
	Fire Example: *Burn Boss candidates serve full apprenticeships*	*For the six months following the training sessions, the three Burn Boss candidates apprentice on at least 5 burns each*	*a. # of individuals completing apprenticeship* *b. % of targeted individuals completing apprenticeship*		
TRN 06	**Generic:** Threats reduced	Within X years of the training, the desired threat reduction is seen	Evidence that training is reducing threats	% of initiatives that show a reduction in key threats being addressed	10. Do you have evidence of this training action leading towards reductions in any of these threats? Please describe.
	Fire Example: *Invasive brush reduced*	Within 2 years of the training, invasive brush in grassland systems in 5 key sites is reduced	Presence of invasive brush		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Fire Example: *Viability of grassland SGCN (Horned Lizard, Spotted Gopher) improved*	***Goal:*** *Within 5 years, viable populations of Horned Lizard, and Spotted Gopher exist in at least 5 sites within the State*	*Population size of Horned Lizard and Spotted Gopher at key sites*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Fire Example: *Viability of grassland habitat*	***Goal:*** *Within 3 years, grassland habitat quality improves to at least "fair"*	*Habitat quality index*		

F. Measures Questionnaire for Training and Technical Assistance:

SWG APPLICATION

Compelling Argument

APP 1. Will this proposal include:

- ❍ Training
- ❍ Technical Assistance

a. Both

b. Neither

APP 2. Describe the threat reduction or restoration problem you are facing.

APP 2a. What Conservation Actions will be applied to the threat or restoration problem following the Training or during/following the Technical Assistance – see AFWA Effectiveness Measures Report Appendix I ?

(Check all that apply and provide the number of trainings you will complete per action)

- ❍ Conservation Area Designation
- ❍ Acquisition/Easement/Lease
- ❍ Data Collection/Analysis
- ❍ Management Planning
- ❍ Direct Management of Natural Resources
- ❍ Species Reintroduction
- ❍ Creating New Habitat/Natural Processes
- ❍ Outreach/Education
- ❍ Land Use Planning
- ❍ Environmental Review
- ❍ Partner Engagement
- ❍ Data Management and Maintenance

APP 2b. What skills are needed/missing in order to apply these actions?

APP3. Who will be trained?

a. Who are the targets of these trainings?

b. What are the prerequisites for this training?

APP 4. What curriculum will you use for your training and why (e.g., available, cost-effective, in-house trainer available, etc.)?

- Established curriculum – citation/source (author, date):
- New curriculum – contact information (name, affiliation, email):

APP 5. Describe the rationale for selecting this curriculum.

APP 6. Describe the knowledge, skills, and teaching abilities/qualifications of the proposed trainers.

SWG REPORTING

Note – May need to restate application questions in past tense for report.

Training or Technical Assistance Implemented

1. How many training modules/sessions were conducted in the reporting period for each action?
2. How many individuals participated in and COMPLETED the training module/sessions for each action?
3. What % of your target audience completed all trainings proposed as part of this project?

Type of Management Action Requiring Training	1. # of Training Modules Conducted	2. # of Individuals Completing Modules	3. % of Target Audience	4. % of Trainees Demonstrating Proficiency

Proficiency Demonstrated

4. What % of trainees demonstrated minimum threshold proficiencies at the end of the training?
5. How did you make this assessment?

6. What may have been barriers to trainee completion and/or passing minimum proficiencies?

Training Applied: Meeting the Objective

7. What % of trainees who completed the training has applied their skills at least once?
8. How did you determine whether trainees have applied skills?
9. What is the % increase in capacity (people sufficiently trained) who have the skills to undertake needed conservation actions?

Type of Management Action Requiring Training	7. % of Trainees Who Have Applied Skills	8. How Did You Determine Whether Skills are Applied?	9. % of Increase in Capacity of Trained People

Threat Reduction

10. What threat(s) were you hoping to address through the management action(s), and do you have evidence that the trainings / management actions are leading toward reductions in any of these threats? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org.

Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example). Only show "evidence of reduction" and "please explain" options if they check that the threat is relevant.

Direct Threat	Check if relevant	Evidence of reduction?	Please explain
1 Residential & Commercial Development	☐	Drop down: y/n/don't know	
2 Agriculture & Aquaculture	☐	y/n/don't know	
3 Energy Production & Mining	☐	y/n/don't know	
4 Transportation & Service Corridors	☐	y/n/don't know	
5 Biological Resource Use	☐	y/n/don't know	
6 Human Intrusions & Disturbance	☐	y/n/don't know	
7 Natural System Modifications	☐	y/n/don't know	
8 Invasive & Other Problematic Species & Genes	☐	y/n/don't know	
9 Pollution	☐	y/n/don't know	
10 Geological Events	☐	y/n/don't know	
11 Climate Change & Severe Weather	☐	y/n/don't know	

11. Additional comments or anecdotes (optional)

Evidence of Expected Response

9. Did you achieve your objectives regarding **target SGCNs** response to the trainings and ultimate direct management actions?

- ○ Most or all SGCN responded to the desired level (comments, optional)
- ○ Most or all SGCN responded but not to the level desired (comments, optional)
- ○ Some SGCN responded fully or partially but not all responded (comments, optional)
- ○ SGCN did not respond as expected (please explain _____)
- ○ Don't know (please explain_____)
- ○ Not applicable (main focus of action was on habitats/processes)

Programming notes: Depending upon response, bring up an additional field for comments (optional) or please explain, as indicated above. For roll-up, SGCNs that at least partially benefit should fall into one of the first 3 categories.

10. Did you achieve your objectives regarding **target habitats/processes** responses to the trainings and ultimate direct management actions?

    - ○ Most or all habitats/processes responded to the desired level (comments, optional)
    - ○ Most or all habitats/processes responded but not to the level desired (comments, optional)
    - ○ Some habitats/processes responded fully or partially but not all responded (comments, optional)
    - ○ Habitats/processes did not respond as expected (please explain _____)
    - ○ Don't know (please explain_____)
    - ○ Not applicable (main focus of action was on SGCNs, not their habitats or processes)

Programming notes: Depending upon response, bring up an additional field for comments (optional) or please explain, as indicated above. For roll-up, habitats/processes that at least partially benefit should fall into one of the first 3 categories.

11. Additional comments or anecdotes (optional)

10. Data Collection and Analysis

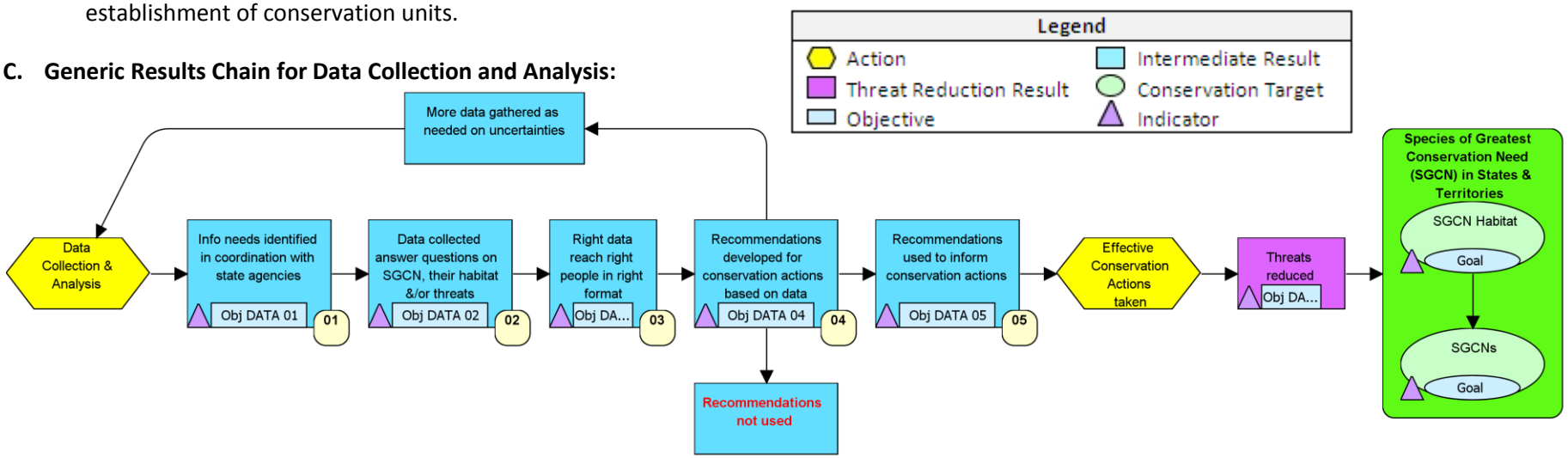
A. Definition of Data Collection and Analysis:

Data Collection and Analysis is defined as "Collecting data about species and habitats and the threats to them to fill information needs; includes compilation, management, synthesis, analysis, and reporting of spatial and nonspatial data."

B. Specific Examples of Data Collection and Analysis:

1. Gather data on the Shenandoah Salamander to define current distribution and survey methodologies, and understand habitat use and threats.
2. Conduct surveys and genetic assessments of three North American minnow SGCNs to determine baseline population data to assist in the establishment of conservation units.

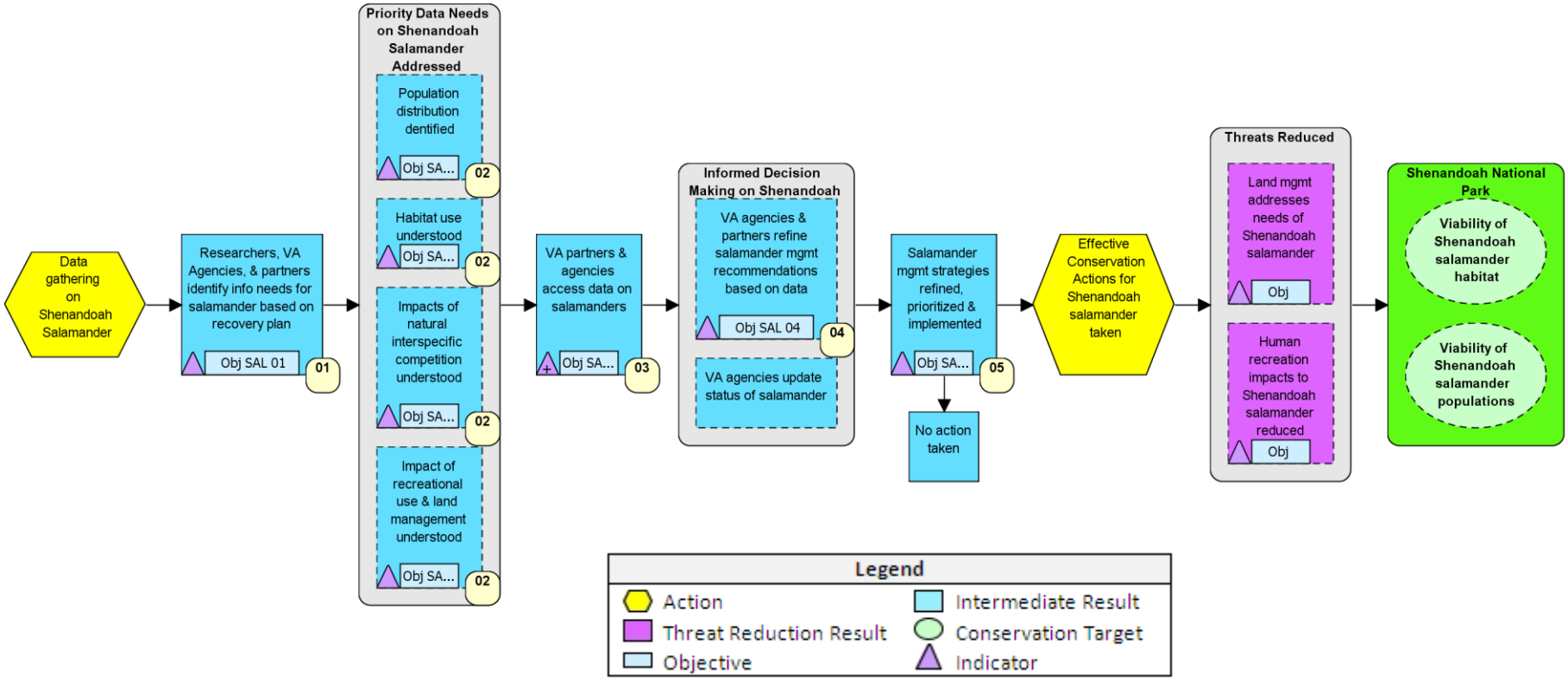
C. Generic Results Chain for Data Collection and Analysis:



Description: The development and implementation of effective conservation actions requires that state natural resource managers and their partners have data available to them that answer specific resource management questions related to species and habitats, and the threats to them. The critical first step in any data collection initiative is clearly defining the management needs and the questions the data collection and analysis will answer (01). For this to happen, relevant data users should be involved upfront in the development of the data collection proposal. (01). Having addressed the foundation for a successful data collection effort, the result chain focuses on how the data was collected. Did the researchers address the relevant questions and how well did the data answer those questions (02)? The final section of the result chain brings home the importance of data being used by people to implement and improve the effectiveness of conservation actions. For this critical final RESULT to be realized, the right data needs to reach the right people in the right format (03), who then apply it through recommending (04) and implementing (05) a course of action based on the data. There is, of course, the possibility that recommendations were not developed or used and capturing the reasons for this can provide important learning for improving future data collection initiatives. Applying these practices to a data collection initiative should result in effective conservation actions that reduce threats and positively impact SGCN and their habitats.

D. Example Results Chain for Data Collection and Analysis:

This fictitious example is based on a case of collecting data on the Shenandoah Salamander in Shenandoah National Park.



E. Cross-walk of Generic and Example Results, Objectives and Measures for Data Collection and Analysis:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
DATA 01	**Generic:** Info needs identified in coordination with state agencies	The grant application includes clear management needs and outcomes that have been identified with input from relevant data users	Evidence that clear management needs and outcomes have been identified with input from relevant data users	N/A – this is a question for grant application process	APP1. What relevant question or information need is this Conservation Action addressing?
	Salamander Example: *Researchers, Virginia agencies, & partners identify information needs for salamander based on recovery plan*	*Within 3 months of the start of the salamander data collection effort, clear research needs and desired outcomes have been identified with input from the VA Dept of Game & Inland Fisheries, USFWS, and NPS*	*Evidence that the salamander data collection effort has clear research needs and desired outcomes identified with input from VA Dept of Game & Inland Fisheries, USFWS, and NPS*		
DATA 02	**Generic:** Data collected answers relevant questions on SGCN*, their habitat and threats	By the end of the project/grant funding cycle the researcher clearly provides answers to relevant questions on needs identified	Evidence that the researcher clearly provides answers to relevant questions.	% of Information and Data Collection Actions in which researcher provided relevant answers to questions.	1. Did the Data Collection & Analysis appropriately answer the relevant research question?
	Salamander Example: Population distribution identified	Within 6 months of the start of the data collection, researchers clearly provide data on the current distribution of Shenandoah Salamander populations	Evidence that researcher provided data on the current distribution of Shenandoah salamander populations		
	Salamander Example: *Habitat use understood*	*Within 6 months of the start of the data collection, researchers clearly provide data on habitats used by Shenandoah Salamander populations*	*Evidence that researcher provided data on habitats used by Shenandoah salamander populations*		
	Salamander Example: *Impacts of natural interspecific competition understood*	*Within 2 years of the start of the data collection, researchers provide data on impacts of natural interspecific competition on*	*Evidence that researcher provided data on impacts of natural interspecific competition on Shenandoah Salamander populations*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
		Shenandoah Salamander populations			
	Salamander Example: *Impact of recreational use & land management understood*	*Within 2 years of the start of the data collection, researchers provide data on impacts of recreational use & land management on Shenandoah Salamander populations*	*Evidence that researcher provided data on impacts of recreational use & land management on Shenandoah Salamander populations*		
DATA 03	**Generic:** Right data reach right people in right format	Within X months/years of start of research, appropriate audiences are accessing data	Evidence that data are reaching relevant audiences (by audience)	% of data collection efforts in which data are reaching relevant audiences (by audience)	2. Who is the intended end user of the data? 3. Which end users have access to the data? 4. Comments/anecdotes
	Salamander Example: *VA partners & agencies access data on salamanders*	*Within 2.5 years of the start of the Shenandoah Salamander data collection, a reporting framework for synthesizing and sharing data is in place, and appropriate audiences are accessing that data*	a. *Evidence that data are reaching VA Dept of Game & Inland Fisheries, USFWS, and NPS* b. *Existence of a reporting framework for synthesizing and sharing data on Shenandoah Salamander populations*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
DATA 04	Generic: Recommendations are developed for Conservation Actions based on data	Within X months/years of the start of the data collection effort, (delete unless we can define good quality) recommendations for conservation action have been developed	Evidence that data collection effort resulted in conservation action recommendations Utility of recommendations	% of Information and Data Collection Actions that resulted in recommendations	5. Have recommendations for Conservation Actions (other than additional research) been developed based upon the data provided by this Data Collection & Analysis effort? If no, specify why.
	Salamander Example: *VA agencies & partners refine salamander management recommendations based on data*	*Within 3 years of the start of the data collection effort, VA agencies & partners develop &/or refine Shenandoah Salamander management recommendations based on data collected*	*Evidence of management recommendations for Shenandoah Salamander based on data collection*		
DATA 05	**Generic:** Recommendations used to inform conservation actions	Within X months of the end of the data collection project, recommendations to revise or maintain conservation actions have been developed	Evidence data are being used to inform conservation actions	% of data collection projects in which data have been used to inform conservation actions	6. Have *end users* used the data to inform *conservation actions*? If no, why. If yes, tell us how.
	Salamander Example: *Salamander mgmt strategies refined, prioritized, & implemented*	*At least 60% of management recommendations developed for the Shenandoah Salamander as a result of the data collection are being implemented*	*% of management recommendations developed for the Shenandoah Salamander as a result of the data collection that are being implemented*		

F. Measures Questionnaire for Data Collection and Analysis:

Research Need

APP1. What relevant question or information need is this Data Collection & Analysis effort addressing? Check all *uses of information that apply: (Programming note: This is an application question)*

- ☐ Inform habitat acquisition
- ☐ Inform habitat management
- ☐ Inform status of habitat quality
- ☐ Track habitat status
- ☐ Inform species and habitat interactions
- ☐ Track species population status or distribution
- ☐ Inform species management
- ☐ Inform species vulnerability assessment
- ☐ Inform species relocation
- ☐ Inform efforts to mitigate a threat and/or stressor
- ☐ Adding new SGCN species
- ☐ Removing SGCN species
- ☐ Support environmental review
- ☐ Inform new state or federal legislation or policy
- ☐ Inform species or habitat recovery plan
- ☐ Assess effectiveness of previously applied conservation actions
- ☐ Other (please describe:_____)

Describe the specific research question or information need (max 1000 characters):

1. Did the data collected appropriately answer the relevant research question(s)?

- ○ Fully answered all research questions
- ○ Mostly to Somewhat answered all research questions
- ○ Provided partial answers to research questions
- ○ Did not appropriately answer the research questions

2. Who is the intended **end user(s)** of the data? *Check all intended users that apply:*

- ☐ Agency Administrators (Director, Deputies, Chiefs, etc)
- ☐ Agency Program Managers
- ☐ Agency Regional Supervisors
- ☐ Agency Field Biologists/Land Managers
- ☐ Agency Environmental Review staff
- ☐ Private Landowners
- ☐ Local, State or Federal Elected Officials
- ☐ State or Federal Regulators
- ☐ Municipality/County Land Use Planners
- ☐ Federal Partners
- ☐ Federal Funders
- ☐ NGO Partners (Private Sector)
- ☐ NGO Funders (Private Sector)
- ☐ Law Enforcement Personnel
- ☐ Colleges/Universities
- ☐ Environmental Regulators
- ☐ Other (please describe:_____)

3. Which **end user(s)** have access to the data? *Check all intended users that apply:*

- ☐ Agency Administrators (Director, Deputies, Chiefs, etc)
- ☐ Agency Program Managers
- ☐ Agency Regional Supervisors
- ☐ Agency Field Biologists/Land Managers
- ☐ Agency Environmental Review staff
- ☐ Private Landowners
- ☐ Local, State or Federal Elected Officials
- ☐ State or Federal Regulators
- ☐ Municipality/County Land Use Planners
- ☐ Federal Partners
- ☐ Federal Funders
- ☐ NGO Partners (Private Sector)
- ☐ NGO Funders (Private Sector)
- ☐ Law Enforcement Personnel
- ☐ Colleges/Universities
- ☐ Environmental Regulators
- ☐ Other (please describe:_____)

4. Additional comments or anecdotes (optional)

Management Recommendations

5. Have recommendations for *Conservation Actions* (other than additional research) been developed based upon the data provided by this Information Collection and Analysis effort? (*Programming note: flag this question for follow-up inquiries by the Service. Were recommendations made at the end of the project? Within three years of the project's end? Within five years of the project's end?)*

- ○ Yes, recommendations made
- ○ No, because: *(programming note: if "no" selected, auto drive back to project description w/ prompt – "you're being taken back to justify why recommendations were not made. If Reasoning and justification has already been made, click here↑ ")*
  - ☐ Too early in the process to make recommendations
  - ☐ Inadequate funding to complete data collection or analysis
  - ☐ Logistical obstacles prevented sufficient completion of the data collection or analysis
  - ☐ Data collected did not meet management objectives
  - ☐ Data collected insufficient for management decision
  - ☐ Other (please describe:_____)

6. Have *end users* used the data to inform *conservation actions*? (*Programmers note: flag this question for follow-up inquiries by the Service. Were recommendations made at the end of the project? Within three years of the project's end? Within five years of the project's end?)*

○ Yes, *end users* have used the data

○ No, because: *(programming note: if "no" selected, auto drive back to project description w/ prompt – "you're being taken back to justify why recommendations were not made. If Reasoning and justification has already been made, click here↑ ")*

- ☐ Spatial scale of data collected was not adequate to inform agency actions
- ☐ Agency or *end user* priorities no longer required the data provided
- ☐ Recommendations for data use were not in line with Agency or *end user* priorities
- ☐ Agency had insufficient personnel to help end users incorporate the data into their conservation priorities
- ☐ End users did not have the ability/capacity to incorporate the data into their conservation priorities
- ☐ Other (please describe:_____)

○ Unknown

If "Yes," Tell us how! (*1000 character limit)*

Additional Information

7. Please provide any narratives, case studies, or additional comments you may have related to your work in direct management of natural resources (optional)

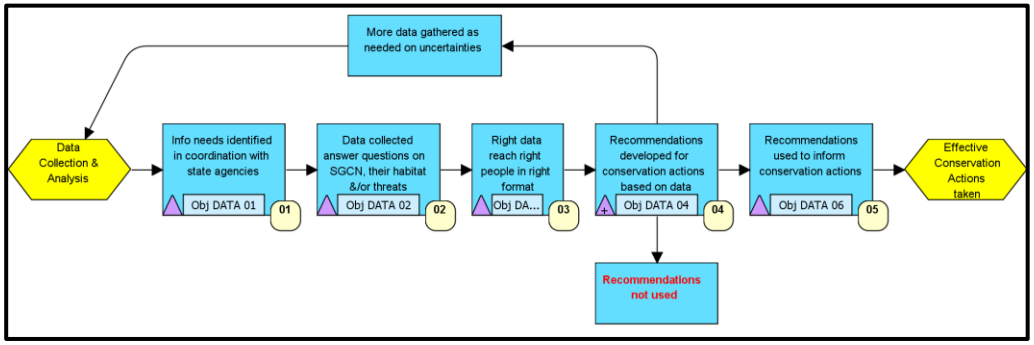
G. Example Graphs and Charts for Reports for Data Collection and Analysis:

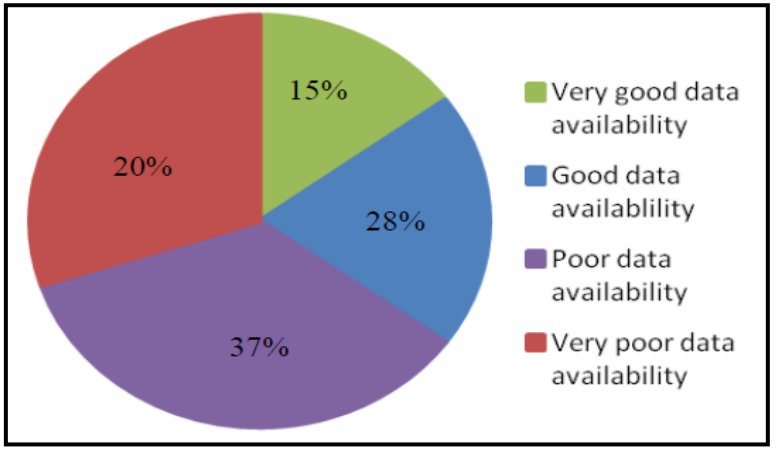
Effectiveness of Data Collection & Analysis

What Does This Include?

Efforts to fill information needs about SGCN and their habitats through the collection of data about species, habitats, and threats, including the compilation, management, synthesis, analysis, and reporting of spatial and nonspatial data. Examples include:

- Data gathered on the Shenandoah Salamander to define current distribution, survey methodologies, and understand habitat use and threats.
- Survey and genetic assessments of three North American minnow species of greatest conservation need to determine baseline populations for the purpose of establishing conservation units.





Progress to Date: Results Chain for Data Collection & Analysis

215 data collection and analysis grants to 40 states were made from 2008-2010. The majority of those led to data providing appropriate or useful recommendations to inform conservation actions.

Effectiveness of funded data collection efforts

1. 93% of the efforts provided appropriate answers to the relevant research question
2. In 89% of the efforts, the data reached the relevant audience
3. 68% of the efforts provided recommendations for conservation actions based on the data acquired
4. 85% of recommendations were useful or appropriate for the conservation action

Where do we go from here?

State Wildlife Action Plans, completed in 2005, identified more than 12,000 Species of Greatest Conservation Need (SGCN). These are species for which populations are declining, or face serious threats. SGCN designation and conservation strategies for these species were based on information available when the plans were developed. For many of these species, data collection and analysis is essential to improve manager's knowledge of SGCN population status and reproduction, habitat requirements, and response to threats in order to develop and implement effective conservation actions and measure their effectiveness.

11. Outreach to Key Resource Users

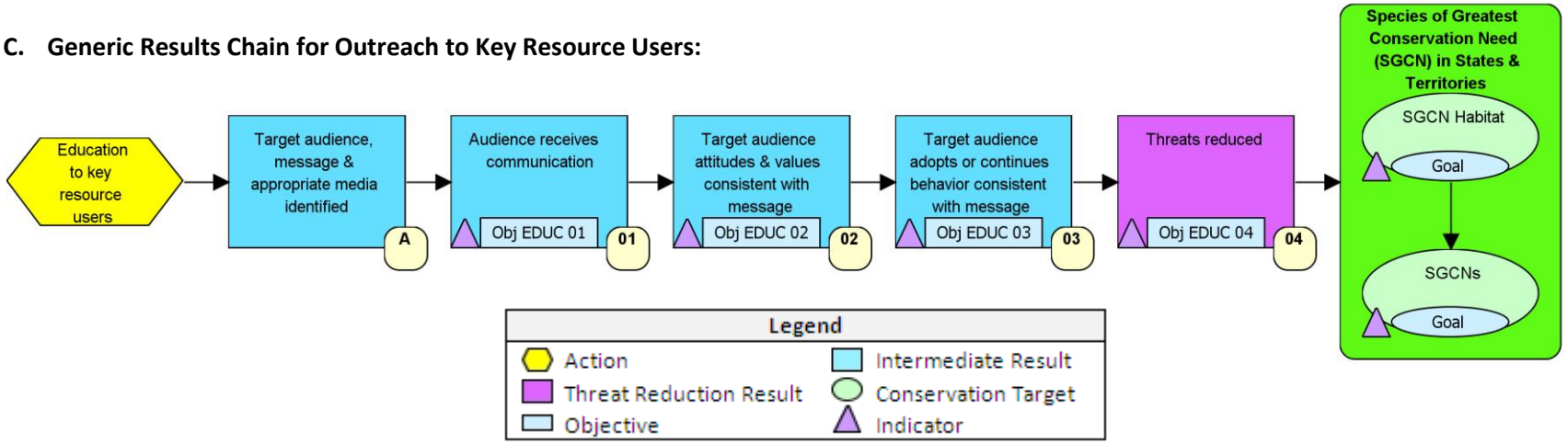
A. Definition of Outreach to Key Resource Users:

Education is defined as "Actions or efforts to increase knowledge or understanding and encourage practices in support of SGCN conservation through instruction or distribution of materials or to provide general information in response to inquiries from the public or partners about SGCN conservation programs, actions, or activities." *Includes both formal (classroom) and non-formal education efforts.*

B. Specific Examples of Outreach to Key Resource Users:

1. Implement a Timber Rattlesnake educational program that includes developing educational materials, conducting workshops on conservation efforts, and conducting habitat management demonstration tours to NGOs interested in implementing Timber Rattlesnake conservation projects.
2. Conduct outreach to landowners to implement land management practices to benefit species.
3. Provide decision makers with data about pollution impacts on at-risk aquatic species to help them set water quality standards for key water bodies.

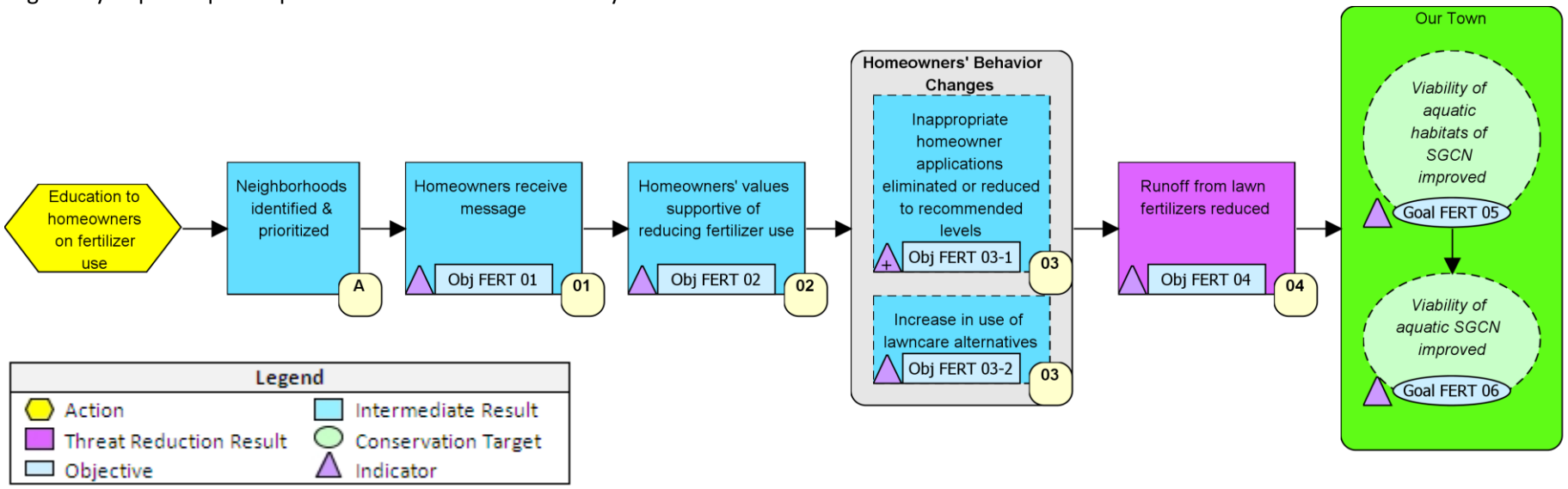
C. Generic Results Chain for Outreach to Key Resource Users:



Description: This action involves providing information and materials to key resource users, with the hope that they will use that information and material to adopt or reinforce behaviors supportive of SGCNs and their habitats. The start of any outreach initiative involves being clear about who the target audience is, what message they need to hear, and what the most appropriate method of reaching them is (A). Though this is shown as the first result of implementing this action, a project team should have already completed this result prior to applying for funding, and any application review should ensure that this is the case. The remainder of the chain follows a typical "knowledge-attitudes-practices" model for behavior change or reinforcement. If the audience receives the message (01), then the first expectation is that they will have the desired knowledge, attitudes, and values (02). This will, in turn, lead them to adopt or continue a practice that is consistent with the message (03). The practice should lead to a reduction in threats (04), which would have positive impacts on SGCN habitats and/or SGCNs.

D. Example Results Chain for Outreach to Key Resource Users:

This fictitious example is based on a case of reaching out to homeowners to help them understand how lawn fertilizer practices contribute to runoff and negatively impact aquatic species and habitat and what they can do to reduce fertilizer runoff.



E. Cross-walk of Generic and Example Results, Objectives and Measures for Outreach to Key Resource Users:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
A	**Generic:** Target audience, message, & appropriate media identified	N/A – should be part of application and review process	N/A	N/A	App1. Identify your target audiences for this outreach effort (incl. how many you intend to reach) App2. Identify what message you intend to share and the expected change App3. Identify how you will share that message App4. Identify how many individuals' attitudes and values you expect to influence App5. Identify how many individuals' behaviors you expect to influence *Note: these are suggested questions for the SWG application process. If the application process changes to incorporate these, duplicate questions below for the reporting process should be removed*
EDUC 01	**Generic:** Target audience receives message	Within X months/years of campaign, at least X% of target audience receives the message	% of target audience that receives message	% of outreach actions where target audience "reach" objectives were met	1. Identify your target audiences for this outreach effort 2. For each target audience, identify the primary methods used to reach the audience 3. For each target audience, identify approximately how many individuals or entities you: a. Wanted to reach with this effort b. Were able to reach *(% objective met autocalculated and categorized)* 4. If *Somewhat* or *Did not meet*: a. Indicate why your outreach effort did not reach as many individuals or entities as hoped. b. Describe what you learned and whether you would (or did) do anything differently based on what you learned. 5. Additional comments or anecdotes (optional)
	Fertilizer Example: *Homeowners receive message*	*Within 4 months of the start of the fertilizer campaign, at least 90% of homeowners receive message about fertilizer impacts and alternatives*	*% of homeowners that receive message about fertilizer impacts and alternatives*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
EDUC 02	**Generic:** Target audience attitudes & values consistent with message	Within X months/years of campaign, there is an increase from X% to Y% in target audience desired attitudes & values	% of target audience that has desired attitudes & values	% of outreach actions where target audience attitude/value objectives were met	6. For each target audience, identify approximately how many individuals with the desired **attitudes and values**: a. You had <u>before</u> your campaign b. You *wanted* to have after the campaign c. You *actually* had <u>after</u> your campaign. 7. What is the perception of **attitudes and values** based upon? 8. If *Somewhat* or *Did not meet*: a. Indicate why your outreach effort did not lead to the changes in **attitudes and values** you had hoped. b. Describe what you learned and whether you would (or did) do anything differently based on what you learned. 9. Additional comments or anecdotes
	Fertilizer Example: *Homeowners' values supportive of reducing fertilizer use*	*Within 6 months of fertilizer campaign, at least 70% of homeowners surveyed has attitudes & values supportive of limiting conventional fertilizer use and/or using alternatives*	*% of homeowners surveyed that has attitudes & values supportive of limiting conventional fertilizer use and/or using alternatives*		
EDUC 03	**Generic:** Target audience adopts or continues behavior consistent with message	Within X months/years of start of campaign, there is an increase from X% to Y% in the amount of target audience that has adopted or continued the desired behavior	% of target audience that has adopted or continued desired behavior	% of outreach actions where target audience behavior objectives were met	10. For each target audience, identify approximately how many individuals with the desired **behaviors**: a. You had <u>before</u> your campaign b. You *wanted* to have after the campaign c. You *actually* had <u>after</u> your campaign. 11. What is the perception of **behaviors** based upon? 12. If *Somewhat* or *Did not meet*: a. Indicate why your outreach effort did not lead to the changes in **behaviors** you had hoped. 13. Describe what you learned and whether you would (or did) do anything differently based on what you learned.
	Fertilizer Example: *Inappropriate homeowner applications eliminated or reduced to recommended levels*	*Within 1 year of fertilizer campaign, at least 50% of homeowners state they no longer use or have reduced their use of conventional fertilizers*	a. *% of homeowners who state they no longer use conventional fertilizers* b. *% of homeowners who state they have reduced their use of conventional fertilizers*		
	Fertilizer Example: *Increase in use of lawn care alternatives*	*Within 1 year of fertilizer campaign, at least 25% of homeowners indicate they are using lawn care alternatives instead of conventional fertilizers*	*% of homeowners who indicate they are using lawn care alternatives instead of conventional fertilizers*		

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
EDUC 04	**Generic:** Threats reduced	Within X years of the start of the action, the desired threat reduction is seen	Threat reduction measures	% of initiatives that show a reduction in key threats being addressed by outreach efforts	14. Do you have evidence of this outreach action leading towards reductions in any of these threats? Y/N; Please describe
	Fertilizer Example: *Runoff from lawn fertilizers reduced*	*Within 18 months of start of fertilizer campaign, concentration of fertilizers in runoff from target neighborhoods has decreased by 25% at discharge point*	*Concentration of fertilizers in runoff from target neighborhoods at designated discharge point*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN improved	**Goal:** Within X years of the start of the action, the species of interest have improved viability	Species measures (e.g., population size, reproductive success)	Status measure – will not be rolled up	N/A
	Fertilizer Example: *Viability of aquatic SGCN improved*	***Goal:*** *Within 3 years of the start of the fertilizer campaign, toxic tolerance levels for benthic macro-invertebrates (as measured by the Hilsenhoff Biotic Index) are no higher than "moderately impaired" (4-6 range)*	*Toxic tolerance levels for benthic macro-invertebrates (as measured by the Hilsenhoff Biotic Index)*		
N/A - Conser-vation targets	**Generic:** Viability of SGCN habitats improved	**Goal:** Within X years of the start of the action, the desired habitat improvement is seen	Habitat measures (e.g., size, condition)	Status measure – will not be rolled up	N/A
	Fertilizer Example: *Viability of aquatic habitats of SGCN improved*	***Goal:*** *Within 2 years of the start of the fertilizer campaign, the stream condition index in designated water bodies consistently (at least 85% of measurements per year) falls in the "good" to "very good" range*	*Stream condition index*		

F. Measures Questionnaire for Outreach to Key Resource Users:

Target Audience Reach

1. Identify your target audiences for this outreach effort

   Audience 1: ☐

   ☐ Add another audience

   Programming note: Allow them to identify as many audiences as they wish. Then, ask the following questions for each audience. Ideally, the audiences would be identified in the grant application process and could be auto-filled here.

2. For each target audience, identify approximately how many individuals or entities you wanted to reach with this effort and how many you were able to reach.

Audience	**Target # individuals to reach**	**Actual # reached**	**% Objective Met**
Audience 1 *(programming note: autopopulate from response above)*	☐ Individuals/ entities	☐ Individuals/ entities	Autofilled with % and category (see programming note)
Audience 2 *(programming note: autopopulate from response above)*	☐ Individuals/ entities	☐ Individuals/ entities	Autofilled with % and category (see programming note)
Etc.			

Programming note: Divide actual # reached/ target number to get % objective met and classify as follows:
Completely met: 100% or more of target individuals reached
Mostly met: 75-99% of target individuals reached
Somewhat met: 30-74% of target individuals reached
Did not meet: 29% or fewer of target individuals reached

3. Please indicate why your outreach effort did not reach as many individuals or entities as expected. Check all that apply.
   Programming note: Show this question if one or more audience reach objectives (col. 4 in table above) are below 75% met.

   ☐ Too early in the process to expect to meet our objective
   ☐ Audience was more difficult to reach than expected
   ☐ Wrong audience was defined
   ☐ Insufficient funding to reach as many individuals/entities as hoped
   ☐ Logistical problems in reaching the audience
   ☐ Internal agency or project management issues
   ☐ Other (Please specify _____)

4. If applicable, please describe what you learned and whether you did (or would do in the future) anything differently based on what you learned. *Programming note: Show this question if one or more audience reach objectives (col. 4 in table above) are below 75% met*

5. Additional comments or anecdotes (optional)

Target Audience Attitudes and Values

6. For each target audience, please identify approximately how many individuals had the desired **attitudes and values** before and after your outreach effort.

Audience	**# individuals with desired attitudes before outreach**	**Target # individuals for desired attitudes**	**Actual # individuals with desired attitudes after outreach**	**% Objective Met**
Audience 1 *(programming note: autopopulate from response above)*	Individuals/ entities	Individuals/ entities	Individuals/ entities	*Autofilled with % and category (see programming note)*
Audience 2 *(programming note: autopopulate from response above)*	Individuals/ entities	Individuals/ entities	Individuals/ entities	*Autofilled with % and category (see programming note)*

Programming note: Divide actual # reached/ target number to get % objective met and classify as follows:
Completely met: 100% or more of target individuals reached
Mostly met: 75-99% of target individuals reached
Somewhat met: 30-74% of target individuals reached
Did not meet: 29% or fewer of target individuals reached

7. Upon what is the perception of **attitudes and values** based?

- ○ Rough guess
- ○ Attitude survey or similar data collection effort
- ○ Other (please specify _____)

8. Please indicate why your outreach effort did not lead to the changes in **attitudes and values** you had expected. Check all reasons that apply. *Programming note: Show this question if one or more attitude/values objectives are below 75% met (col. 5 above).*

   ☐ Too early in the process to expect to meet our objective

   ☐ Change in context affected attitudes and values

   ☐ Target audience was more resistant to adopting values and attitudes than expected

   ☐ Internal agency or project management issues

   ☐ Not as successful in reaching target audience as expected

   ☐ Other (Please specify _____)

9. If applicable, please describe what you learned and whether you did (or would do in the future) anything differently based on what you learned. *Programming note: Show this question if one or more attitude/values objectives are below 75% met (col. 5 above).*

10. Additional comments or anecdotes (optional)

Target Audience Behaviors

11. For each target audience, please identify approximately how many individuals had the desired **behaviors** before and after your outreach effort.

Audience	**# individuals with desired behaviors before outreach**	**Target # individuals for desired behaviors**	**Actual # individuals with desired behaviors after outreach**	**% Objective Met**
Audience 1 *(programming note: autopopulate from response above)*	Individuals/ entities	Individuals/ entities	Individuals/ entities	*Autofilled with % and category (see programming note)*
Audience 2 *(programming note: autopopulate from response above)*	Individuals/ entities	Individuals/ entities	Individuals/ entities	*Autofilled with % and category (see programming note)*
Etc.				

Programming note: Divide actual # reached/ target number to get % objective met and classify as follows:
Completely met: 100% or more of target individuals reached
Mostly met: 75-99% of target individuals reached
Somewhat met: 30-74% of target individuals reached
Did not meet: 29% or fewer of target individuals reached

12. Upon what is the perception of **behaviors** based?

- ○ Rough guess
- ○ Attitude survey or similar data collection effort
- ○ Other (please specify _____)

13. Please indicate why your outreach effort did not lead to the changes in **behaviors** you had expected. Check all reasons that apply.
Programming note: Show this question for those efforts that fall into the somewhat met or did not meet categories.

- ☐ Too early in the process to expect to meet our objective
- ☐ Change in context affected behaviors
- ☐ Target audience was more resistant to adopting behaviors than expected
- ☐ Obstacles to behavior adoption were too great
- ☐ Internal agency or project management issues
- ☐ Not as successful in reaching target audience as expected
- ☐ Not as successful in changing attitudes or values as expected
- ☐ Other (Please specify _____)

14. If applicable, please describe what you learned and whether you did (or would do in the future) anything differently based on what you learned.
Programming note: Show this question for those efforts that fall into the somewhat met or did not meet categories.

15. Additional comments or anecdotes (optional)

Threat Reduction

16. What threat(s) were you hoping to address through the direct management of natural resources? For a more detailed description of the threat categories provided, see the Conservation Measures Partnership's website: www.conservationmeasures.org.
Programming note – provide check box of IUCN CMP Taxonomy of threats (level 1 or level 2 – level 1 shown in this example).

Direct Threat	Check if relevant
1 Residential & Commercial Development	☐
2 Agriculture & Aquaculture	☐
3 Energy Production & Mining	☐
4 Transportation & Service Corridors	☐
5 Biological Resource Use	☐
6 Human Intrusions & Disturbance	☐
7 Natural System Modifications	☐
8 Invasive & Other Problematic Species & Genes	☐
9 Pollution	☐
10 Geological Events	☐
11 Climate Change & Severe Weather	☐

17. Do you have evidence of this outreach action leading towards reductions in any of these threats?
☐ Yes ☐ No

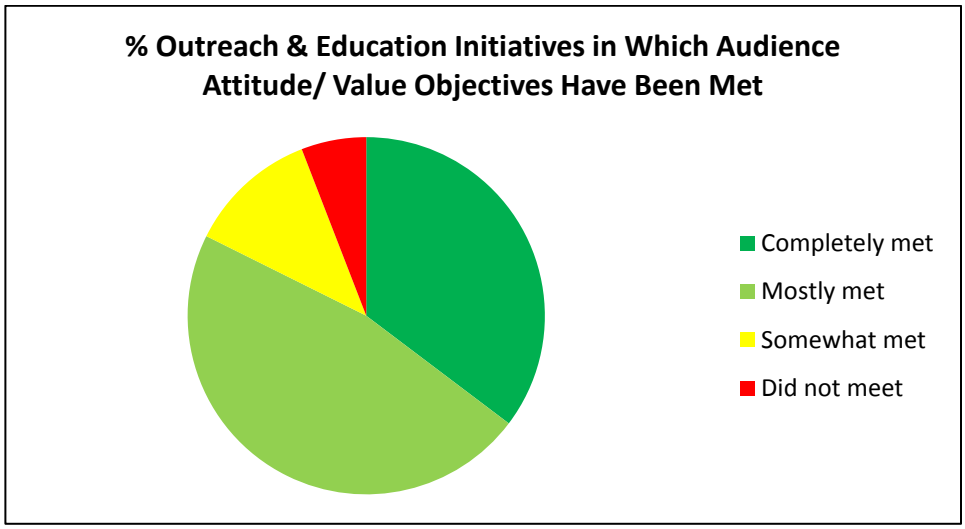
If yes, please describe:
Programming note: Only show this question if they checked "yes" above

Additional Information

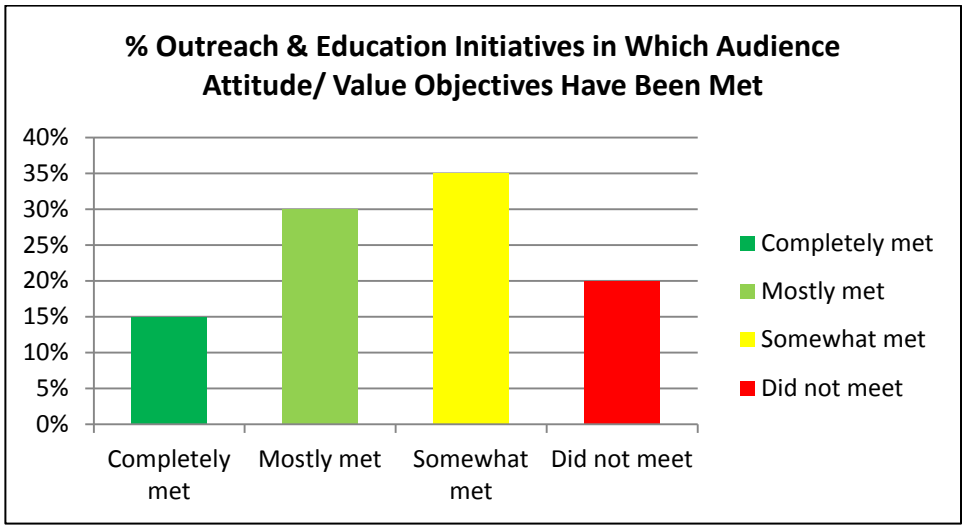
18. Please provide any narratives, case studies, or additional comments you may have related to this outreach effort (optional)

G. Example Graphs and Charts for Reports for Outreach to Key Resource Users:
Potential graphs and charts for a report could include:

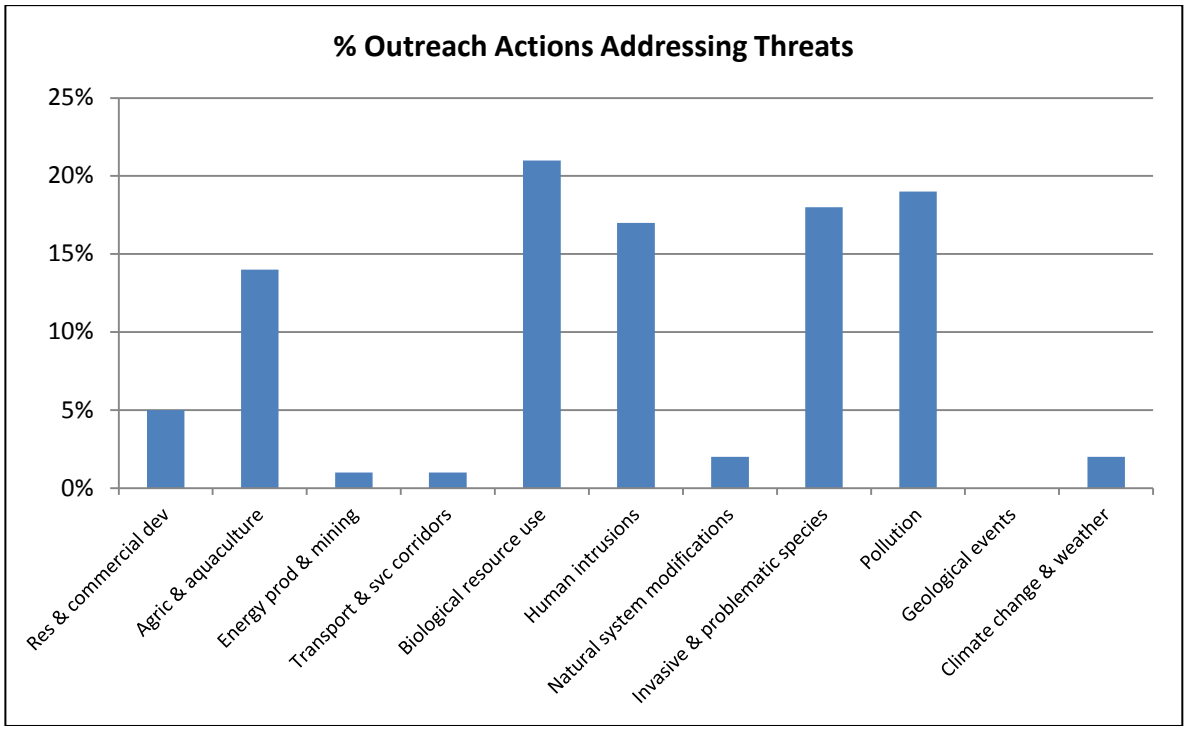
EDUC 02 (Target audience attitudes & values consistent with message): Pie chart (preferred) or bar graph showing % objective met - colors indicative of % of objective met (green = v. good; red = v. poor)



EDUC 03 (Target audience adopts or continues behavior consistent with message): Pie chart (preferred) or bar graph showing % objective met - colors indicative of % of objective met (green = v. good; red = v. poor) – bar graph shown here to vary from previous figure.



EDUC 04 (Threats reduced): Table or histogram with IUCN-CMP threat categories & # being addressed through education, do not report on evidence of threat reduction (except anecdotally). Note, this figure could also be shown as the total number of initiatives, rather than as percents within that total number.



A. INCENTIVES (partial chain to be inserted into others)

A. Definition of Incentives:

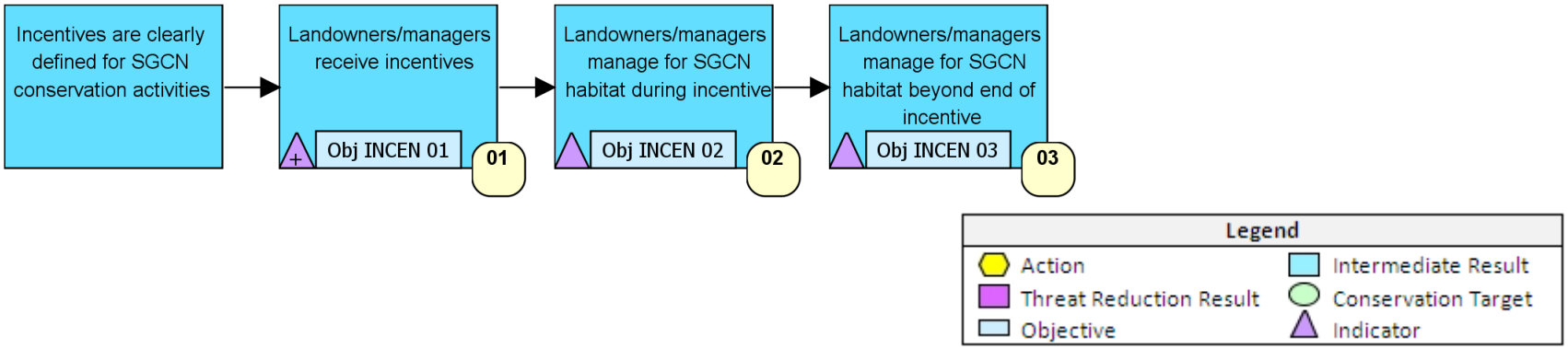
Incentives are defined as "Development and delivery of incentives to private landowners to influence responsible stewardship of land/water and specific species."

B. Specific Examples of Incentives:

1. Tax breaks
2. Stewardship payments to landowners (doing the right thing, continue to do the right thing)
3. Management infrastructure & practices incentives ($ to build a fence, infrastructure, delay hayfield)
4. Restoration incentives ($ to restore wetland)
5. Regulatory streamlining
6. Technical assistance

C. Generic Results for Incentives:

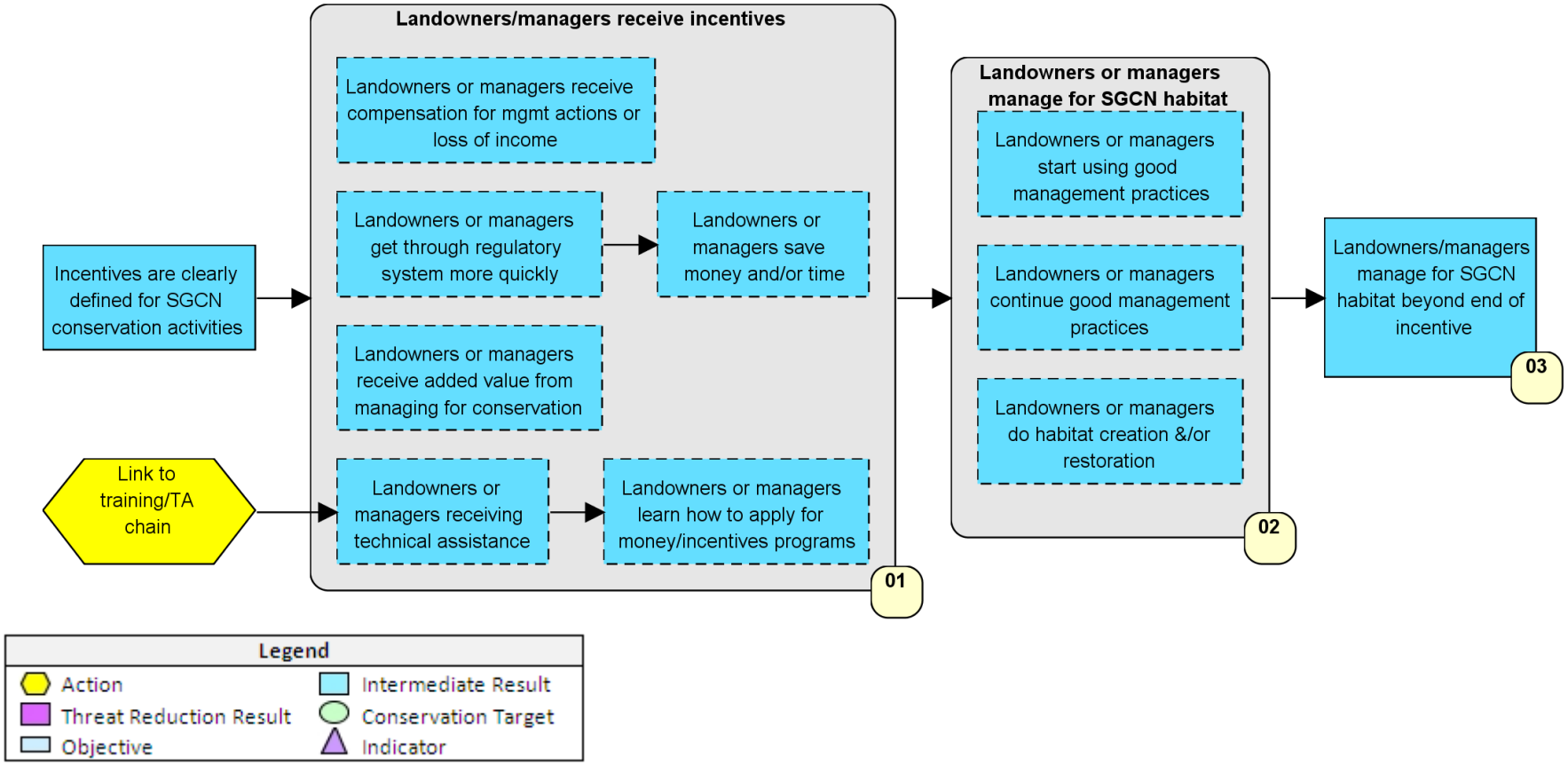
Note: This is not presented as a full chain, but rather as a series of boxes that could be used in various chains where incentives might be part of a broader strategy (e.g., direct management of natural resources; creation of new habitat; acquisition/ easement/ lease)



Description: Regardless of what broader action is being implemented, it is possible to think of incentive-oriented components of those broader actions in a series of four generic results. First, it is assumed that a project team would clearly define appropriate incentives for conservation actions designed to influence species of greatest conservation need. If those are defined, then the next assumption holds that landowners or land managers receive those incentives (01). As shown in the more detailed figure in Section D, those incentives can come in a variety of forms, including: compensation for management actions or loss of income; assistance in getting through the regulatory system more efficiently, which allows them to save money and/or time; added value from managing for conservation (e.g., ability to get certified, attract hunters, attract ecotourists); and technical assistance, which could also help them to apply for money or other incentives programs. Assuming the landowners or land managers receive the incentives, then it is expected that they would manage for SGCN habitat during the timeframe in which they are receiving the incentive (02). Again, referring to the more detailed figure

in Section D, management might include starting to use good management practices, continuing to use good management practices, and/or doing habitat creation and/or restoration. An important assumption in this chain is that the landowners or managers will continue to manage for SGCN habitat beyond the end of the incentive (03). Thus, it is hoped that the incentive provides the impetus to start or continue good management, but that landowners or managers would see benefits in continuing those practices over the longer term.

D. Generic Results (More detail) for Incentives:



E. Generic Results, Objectives and Measures for Incentives:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
INCEN 01	Landowners/managers receive incentives	Within X timeframe, sufficient incentives are available to get enough landowners to participate	a. # of landowners/managers receiving direct compensation b. # acres of SGCN habitat covered by direct compensation c. Amount of money spent on direct compensation d. Amount of additional money needed for direct compensation	a. # of landowners/managers receiving direct compensation b. # acres of SGCN habitat covered by direct compensation c. Amount of money spent on direct compensation d. Amount of additional money needed for direct compensation	1. Considering where the on-the-ground action covered by the incentives took place: a. How many landowners/managers are receiving direct compensation? b. How many acres of SGCN habitat are covered by direct compensation? c. How much money was spent on direct compensation? d. Was there more demand than you were able to provide via direct compensation? If yes, approximately how much more money was needed?
INCEN 02	Landowners/managers manage for SGCN habitat during incentive	Within X timeframe of receiving the incentive, at least 90% of landowners/managers are complying with their incentive agreement	% of landowners/managers who are complying with their incentive agreement	% of initiatives in which at least 90% of landowners/ managers are complying with their incentive agreement	How many landowners/managers receive an incentive? (see earlier question – 1a) 2. How many landowners/managers are complying with their incentive/agreement?
INCEN 03	Landowners/managers manage for SGCN habitat beyond end of incentive	After the end of the incentive, it is at least somewhat likely that the landowner/manager will continue mgmt of SGCN habitat without incentive	Likelihood that landowner/manager continues mgmt of SGCN habitat without incentive *Note: Ideally, you should measure this landowner by landowner (not across a group of landowners)*	% of initiatives in which landowner/manager is at least somewhat likely to continue mgmt of SGCN habitat without incentive	3. Given current trends, to what degree do you think the landowner or manger will continue to manage for SGCN habitat beyond the end of the incentive? 4. What is the basis for your response?

F. Measures Questionnaire for Incentives:

Incentives Received

1. Considering where the on-the-ground action covered by the incentives took place, please answer the following questions:
   a. How many landowners/managers are receiving direct compensation? _____
   b. How many acres of SGCN habitat are covered by direct compensation? _____
   c. How much money was spent on direct compensation? _____
   d. Was there more demand than you were able to provide via direct compensation?

      ○ Yes. If yes, approximately how much more money was needed? _____

      ○ No

Managing for SGCN Habitat (during incentive)

2. How many landowners/managers are complying with their incentive/agreement? _____

Managing for SGCN Habitat (beyond incentive)

3. Given current trends, to what degree do you think the landowner or manger will continue to manage for SGCN habitat beyond the end of the incentive?

   ○ Very likely

   ○ Somewhat likely

   ○ Somewhat unlikely

   ○ Not likely

   ○ Don't know

4. What is the basis for your response?

   ☐ Poll with landowners

   ☐ Personal opinion

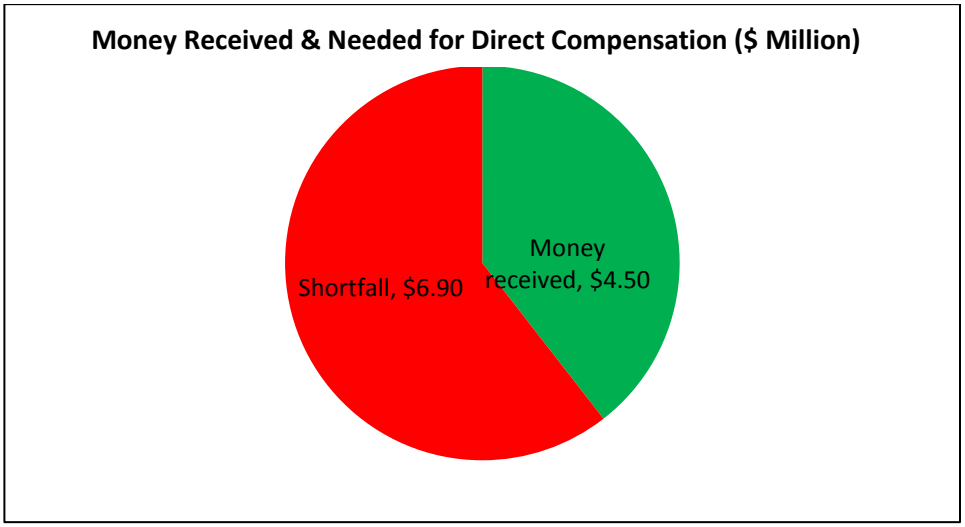
   ☐ Other (specify) _____

G. Example Graphs and Charts for Reports for Incentives

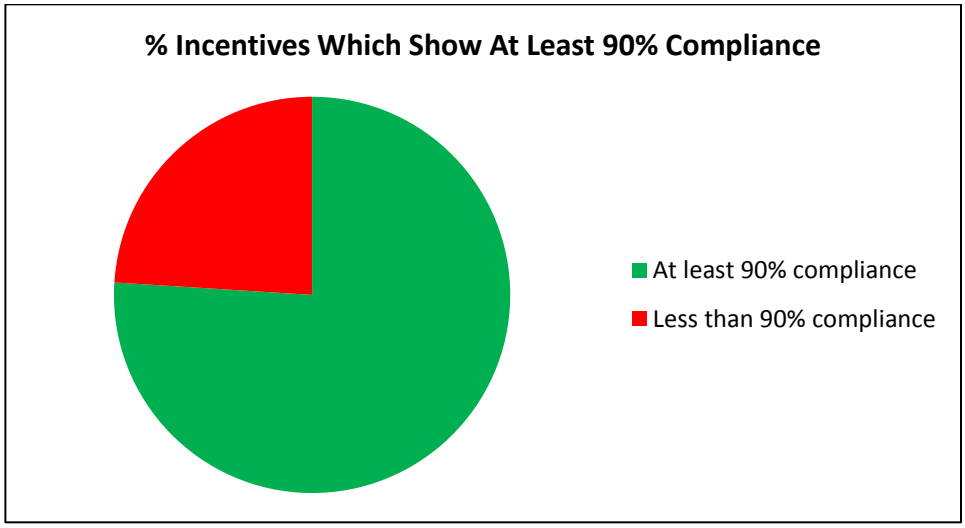
INCEN 01 (Landowners/managers receive incentives.) Table to show summary figures

# Landowners or managers receiving direct compensation	563
# Acres of SGCN habitat covered by direct compensation	3.2 million hectares
Money spent on direct compensation	$4.5 million

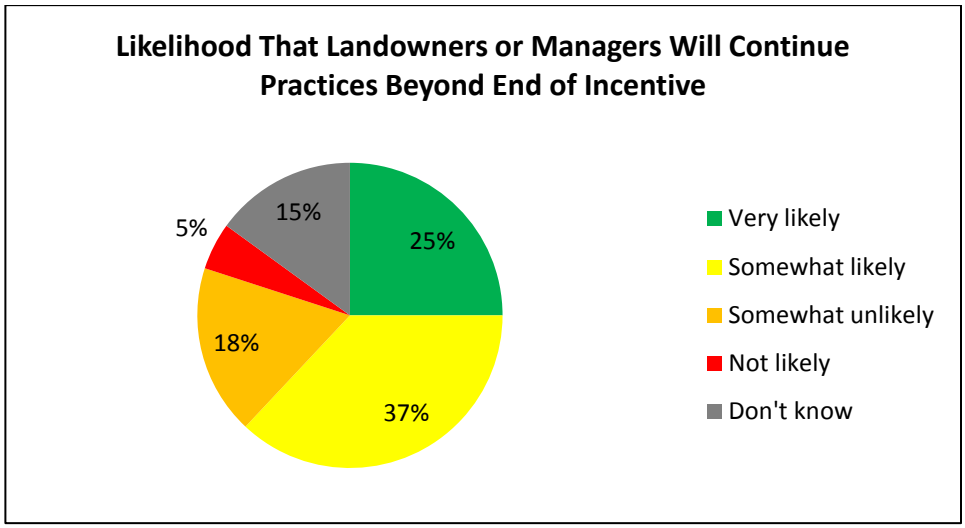
Pie chart to show money received for direct compensation and shortfall



INCEN 02 (Landowners/managers manage for SGCN habitat during incentive) Pie chart (or bar graph) to show % of initiatives in which at least 90% of landowners or land managers are complying with their incentive agreement



INCEN 03 (Landowners/managers manage for SGCN habitat beyond end of incentive) Pie chart to show % of initiatives in which landowner/manager is at least somewhat likely to continue mgmt of SGCN habitat without incentive. *Note: this pie chart shows full distribution, not just the "at least somewhat likely" category.*



B. STAKEHOLDER INVOLVEMENT (partial chain to be inserted into others)

A. Definition of Stakeholder Involvement:

Stakeholder involvement is defined as "Engaging state and federal agencies, tribal entities, the NGO community, and other partners to achieve shared objectives and broader coordination across overlapping areas."

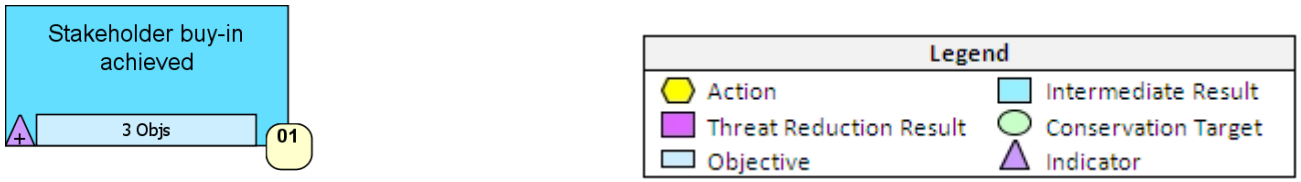
Note: This was listed as a separate action (partner engagement) in the Phase 1 report, but the workgroup concluded that partners were most often engaged through active participation in the other Conservation Actions. Many of the conservation actions include "stakeholder buy-in or involvement" as a component of their results chain. The work group concluded that, at least from the standpoint of SWG/SWAP, there was not sufficient distinction between partner engagement and stakeholder involvement to warrant Partner Engagement as a separate conservation action.

B. Specific Examples of Stakeholder Involvement:

1. Establish decision making processes with state agencies
2. Outreach with tribal governments
3. Convene an advisory committee to assist with implementation of a State Wildlife Action Plan

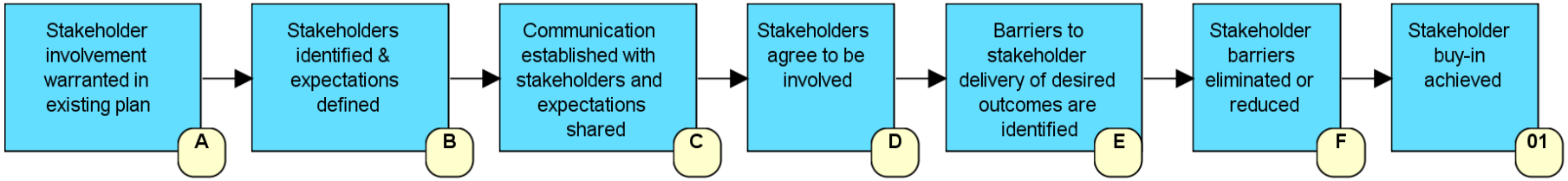
C. Generic Result for Stakeholder Involvement:

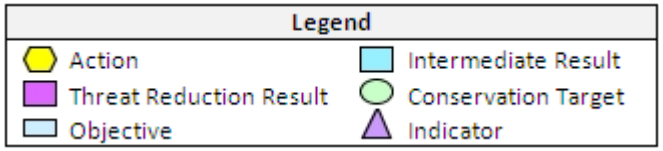
Note: This is not presented as a full chain, but rather a box that could be used in various chains where stakeholder involvement might be part of a broader strategy (e.g., land use planning, direct management of natural resources,)



Description: Many conservation actions require the involvement of various stakeholders and achieving their buy-in. Using this generic result in all conservation actions that include stakeholder involvement assures consistency across result chains for objectives, measures, rolled-up measures, and survey questions. The most important result to include is that stakeholder buy-in has been achieved (01). Still, there are a series of steps and results that lead up to stakeholder buy-in. These are presented in a more detailed chain in Section D. This chain was developed to encourage the use of best practices when engaging stakeholders in conservation actions. The chain shows the importance of determining if stakeholder involvement is warranted (A) and if so, identifying stakeholders and defining their expectations (B). Once this happens, it is then assumed that a project team would effectively communicate with stakeholders and share expectations with them (C), which would lead to their agreement to be involved in the effort (D). If stakeholders are involved in the conservation action, then this would facilitate the identification of barriers (E) and their elimination (F). The final and key result is that all of these steps and results would lead to the achievement of stakeholder buy-in (01). For more information on stakeholder involvement, IAP2.org is a good resource http://www.iap2.org/. See IAP2 public participation spectrum at http://www.iap2.org/associations/4748/files/IAP2%20Spectrum_vertical.pdf.

D. Generic Results (More detail) for Stakeholder Involvement:





E. Generic Results, Objectives and Measures for Stakeholder Involvement:

Label	Result	Objective	Specific Measure (Indicator)	Rolled Up Measure	Monitoring Questions
STAKE 01-1	Stakeholder buy-in achieved	By {target date}, expectations for X% of identified stakeholders have been established and communicated.	a. # stakeholders/ stakeholder groups identified b. % stakeholders with whom communication has been achieved and expectations shared	% projects which meet their objectives for contacting stakeholders and sharing expectations	1. This project identified stakeholders by: (drop-down) 2. How many stakeholders did you identify for this project? 3. Of the stakeholders you identified, how many were you able to communicate with?
STAKE 01-2	Stakeholder buy-in achieved	By {target date}, of those who have received communications, at least X% have agreed to participate	% of contacted stakeholders who agree to participate	% projects which meet their objective for stakeholder agreement	4. Of the number you communicated with, how many stakeholders agreed to participate in your action?
STKAKE 01-3	Stakeholder buy-in achieved	By {target date}, of participating stakeholders, at least X% have fulfilled their commitments to the project	% of participating stakeholders who fulfill commitments	% projects which meet their stakeholder commitment objective	5. For participating stakeholders, how many fulfilled their commitments to your project? 6. Were participating stakeholders recognized for their involvement? If yes, please share!

F. Measures Questionnaire for Stakeholder Involvement:

Stakeholder Buy-In Achieved

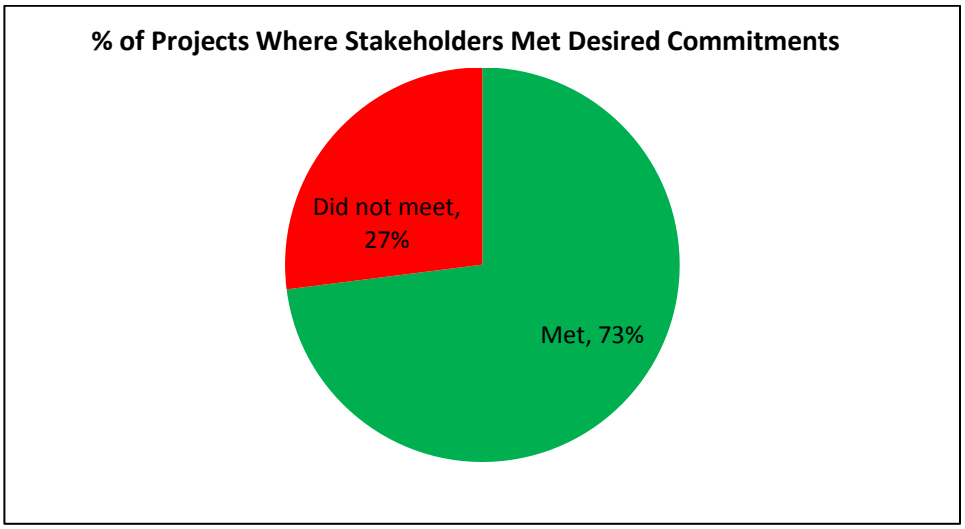
1. This project identified the following stakeholders :
   - ○ Internal/Agency Partners
   - ○ Community members at large
   - ○ Financial contributor/ capital commitment holder
   - ○ Special interest group
   - ○ Other _____
2. How many stakeholders were identified for this project? _____
3. Of the X#* stakeholders identified, how many were you able to communicate with? _____
   **Programming note: Auto populate X# with number from Question 2*
4. Of the X#* stakeholders you communicated with, how many agreed to participate in your action? _____
   **Programming note: Auto populate X# with number from Question 3*
5. For the X#* participating stakeholders, how many fulfilled their commitments to your project? _____
   **Programming note: Auto populate X# with number from Question 4*
6. Were participating stakeholders recognized for their involvement?
   - ○ Yes
   - ○ No

   If "Yes," please describe: _____

G. Example Graphs and Charts for Reports Stakeholder Involvement:

STAKE 01-3(Stakeholder buy-in achieved) Pie chart to show % projects which meet their stakeholder commitment objective

Note: Could do something similar for other objectives/measures, but this seems to be the most important one.



Appendix III. Example of Effectiveness Measures Report

The following diagram shows a mockup of a potential roll-up report for species restoration.

Mock-up Example of 2-Page Layout for Reporting on Conservation Actions

Effectiveness of Species Restoration Efforts

What Does This Include?

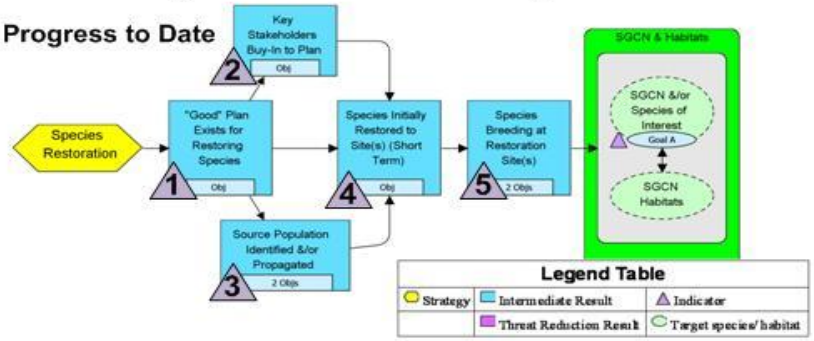
Efforts to reintroduce, relocate, or stock native animals or plants or translocate animals to an area where they are not currently found. Some examples include:

- Translocating/breeding in captivity black-footed ferrets to establish new populations in suitable habitat.
- Restoring mussel assemblages to historically occupied stream stretches

How Do We Measure Effectiveness?

Establishing good effectiveness measures for conservation actions requires being clear about the linkages among conservation actions, changes in threats those actions are designed to address, and the status of the relevant species and habitats. Laying out this "theory of change" isolates and limits the key factors that need to be monitored in order to assess whether our conservation actions are leading to the intended outcomes or changes.

Progress to Date



115 species restoration grants to 28 states were made from 2008-2010. The majority of those led to species breeding at restoration sites.

Effectiveness of Funded Species Restoration Efforts

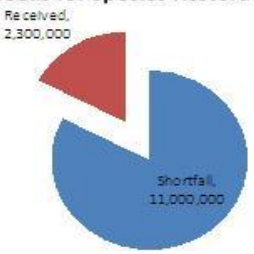
1. 90% of efforts have "good" plans that meet key criteria
2. 70% have stakeholder support to move the efforts forward
3. 81% have identified or propagated sufficient species to meet restoration needs
4. 65% have released sufficient species for initial restoration
5. 47% show restored species are breeding successfully

For more info: www.swgdb.org/species-restoration/

Where Do We Go From Here?

While much has been accomplished with funding for species restoration, the support is currently not adequate to meet conservation goals established by states to protect Species of Greatest Conservation Need and their habitats. Consequently, species restoration efforts are falling short. Specifically, it is estimated that states require an additional $11 million dollars to meet their goals for species restoration activities.

Funding Needs for Species Restoration



Stories from the Field

Washington Department of Fish and Wildlife and partners, with SWG support, are helping conserve and restore western pond turtle populations - a state endangered species that has been impacted by habitat loss and non-native predators like large-mouth bass and bullfrogs which eat young turtles.

As part of their recovery strategy, managers implemented a "head start" program for captive bred and wild hatchlings. The young turtles are raised in captivity until they are too large to be eaten by bass and bullfrogs – at which point, the turtles are released into suitable habitats to augment existing or create new populations.

In 2007, Washington achieved goals for restoring at least four self-sustaining populations in the Columbia Gorge. Although efforts to restore this species to Puget Sound recovery areas continue, meeting the Columbia Gorge recovery goals means it is unlikely this species will be extirpated or require protection under the Federal Endangered Species Act

Photos by Kate and Frank Slavens

Questions to Explore

- How can states better engage stakeholders and explain practical benefits of species restoration to improve support?
- Under what conditions does it make sense to do species restoration versus other less labor and cost intensive, like outreach or economic incentives?

APPENDIX IV. CRITERIA FOR EVALUATING DATABASES

This Appendix contains a brief summary of the characteristics and criteria we developed for evaluating databases. State IT developers and their partners in federal and private organizations should design systems based on the following best practices:

- **Wherever possible, integrate use of information systems into existing business processes.** One challenge will be to fit data needs into a broader system that are beyond the control of individual agencies (e.g., integrating basic information about a grant application collected at grants.gov with more specific information needed for state wildlife agency purposes).
- **Focus on collecting data with known uses.** Instead of trying to collect all possible data, design systems to collect data that will be used by key audiences. It is often helpful to design the final reports that the system will produce before building the system.
- **Avoid double entry of data.** Whenever possible, it is better to link to existing data sets than to have users enter the data manually. For example, rather than try to collect new information about the distribution of key species, link to the existing NatureServe databases and Natural Heritage Program databases that already contain this information.
- **Develop systems looking forward, not backward.** It is often more effective to design systems to collect future data, without worrying about the backlog of existing information.
- **Ensure long-term access to both data and information systems.** Data from projects and actions funded with public dollars need to be placed in data systems that guarantee appropriate access, with safeguards for legitimately sensitive information.

As an aid to states in using common data structures and terms, the Working Group identified the following characteristics and criteria to guide the selection of tools best suited for measuring effectiveness.

CHARAC-TERISTIC	DEFINITION	CRITERIA			
		Poor	Fair	Good	Ideal
KEY DATA FIELDS					
Units of Analysis	Basic units for records within the database, e.g., actions, projects, sites or targets				
Systems Supported	Types of planning systems supported by the database, e.g. Open Standards, Logic Models				
What is the model of the unit of analysis	Description for each system				
Basic Information	Basic project summary info and meta data	None	Some fields	All fields	Many more
Context Information	Targets, viability, threats, contributing factors	None	Some fields	All fields	Many more
Action Information	Description of actions being taken with target, threats, and actions	None	Some fields	All fields	Many more
Workplan Tools	Levels of effort going into the action; ability to assign tasks to different people; ability to assess work load	None	Some fields	All fields	Many more

CHARAC-TERISTIC	DEFINITION	CRITERIA			
		Poor	Fair	Good	Ideal
Budgeting Tools	Ability to track funds needed	None	Some fields	All fields	Many more
Actual Financials	Actual funds spent	None	Some fields	All fields	Many more
Action/Project Status	Fields for tracking the current status of the action or project	None	Some fields	All fields	Many more
SPATIAL DATA					
Spatial Data	Degree to which the system allows spatial data analyses	None or basic project coordinates	Allows map-based search for projects	Allows import/export and basic GIS capabilities (e.g., points and polygons on a base map)	Full GIS capabilities
Base Maps	Types of spatial base maps that the system supports, e.g., ESRI, Google	None	Only custom	One standard	All standard
Graphical Diagrams	Support for results chains and similar graphical data, e.g., Miradi, Visio	None	Static images (JPG, PNG, etc.)	Full Files	Editable in place
Reports	Support for standard and custom reports	None	Limited standard reports from templates	Full standard reports and limited custom	Full suite of standard -AND- Custom
Customizability	Ability to add custom fields and terms	None	Custom programming work	User experts	All users
DATA MNGMT					
Ease of Use	Degree to which system is easy to use	Extensive training required	Some training required	Easy for most users	Easy for all users
Granularity of Data Privacy Flags	Level at which data can be tagged as private	None	Entire record	Certain types of fields within a record	All fields
Levels of Privacy	Different settings for data privacy	No control	Little control	Some control	Full control
Public Input of Data	Degree to which public can add data	None	Selected public can apply to enter data	Most can enter data	Anyone can enter data
Project Data QA/QC	Degree of editorial control over data	None – project team enters data	Some – Data entered through external site	Basic – Editor gives review (flagging)	Editor gives full review plus peer reviewed
Data Importing	Capacity to import data in a variety of formats, e.g., sql, mpz, xls, shp	No formats	Some formats	Most formats	All formats
Data Export	Capacity to export data in various formats, e.g., sql, mpz, shp	No formats	Some formats	Most formats	All formats
BUSINESS MODEL					
License Type	License type and requirement, e.g., none, commercial, open source				
Hosting Model	Hosted, on individual server				
License Cost	Cost per user or organization over time (all in)	Very expensive	Expensive	Moderate	Free
Funding source	Sources of funding for the database, e.g., user fees	None	Limited	Short-term secure	Long-term secure
Current status	Current status of the system development	Planned	Pilot	Deployed 1-3 years	Deployed > 3 years
Number of users	How many organizations, or projects are using the database	None	Some	Few	Many

Database Systems that Use Projects as the Main Unit of Analysis
(Tools are listed in alphabetical order)

- **ConPro** (conpro.tnc.org) – ConPro is an online database originally developed by the Nature Conservancy (TNC) to track its conservation projects. The basic unit of analysis is the project. Project records are based on TNC's Conservation Action Planning (CAP) methodology, which is closely related to the Open Standards for the Practice of Conservation. Project records contain summary information about the project, as well as specific details about facets of the project including scope, targets, target viability, threats, contributing factors, goals and objectives, strategies, monitoring plan, work plan and budget, and progress reports. Users can attach maps, results chain diagrams, and other information to project records. ConPro has a powerful search tool that enables users to find projects based on any combination of the above facets. Projects are also geo-referenced and can be found using a map interface. Users can seamlessly upload and download data between ConPro and Miradi Software. ConPro is now working with the Conservation Measures Partnership and Miradi to open up the system to non-TNC users under a business model currently in development. This will include the ability to create custom portals for organizations as well as the ability to set granular data access controls. There are currently over 1000 projects in ConPro from around the world, several hundred of which are currently available to the public.

- **Conservation Registry** (www.conservationregistry.org) – The Registry is an online application designed to promote sharing of information and knowledge about conservation actions. As such, the Registry aims for broad access and ease of use. There are no limitations on who can use the Registry. The tool uses Google Maps to map the locations of projects. The mapped projects are accompanied by text that describes each project, the actions associated with the project, and the status of the actions (e.g., "in progress"). Project descriptions can be supplemented with hot links and reference materials. All projects must have at least one conservation target using common ecological classifications at both national and state scales. Species targets are supported, but not required. Threat/stressor data are not yet included, but this is a desired future component. Organizations can use the standard portal, or set up a customized portal that contains the basic Registry data fields but is otherwise designed to meet their specific needs. Custom portals also enable users to set access restrictions on the data. The tool can import/export spatial data in ESRI formats as well as KML. The system is maintained by Defenders of Wildlife (www.defenders.org) with funds from a variety of sources, including Oregon Department of Fish and Wildlife SWG funds and NFWF. Although the tool is free now, the business plan calls for a yearly maintenance fee to ensure long-term viability. The Registry was developed using all open source technology, written in Ruby. The back-end database is postgre SQL/postgis, with Rex Space cloud hosting.

- **HabITS** – HabITS is a centrally-hosted, geo-spatial database for the USFWS Partners for Fish and Wildlife and Coastal Programs to track agreements, projects and sites. Actions, conservation targets, and monitoring design are defined, prioritized and tracked spatially within the system. Base maps include ESRI files and Bing. The conservation targets are all USFWS trust species that are expected to benefit from the actions, which are defined as habitat treatments in the field. HabITS also includes work plan and budgeting tools that track staff days and financial contributions (both USFWS funds and partner match). Reporting is highly flexible, including standard and user-defined formats, as well as charts (pie, bar, etc.). At this time, access to the system is limited to the Partners for Fish and Wildlife Program with a high level of privacy protection, but some level of public access is being considered for the future. HabITS is easy to use. There are approximately 700 users within the USFWS, all of whom received training aimed mostly at quality control. The business model is based on organizational support from USFWS, leveraged across ECOS programs.

- **Miradi** (www.miradi.org) – Miradi is a project management, desktop software application designed to help program managers organize and track project activity based on the Conservation Measures Partnership's Open Standards for the Practice of Conservation. It is not a database in the strict sense, but rather is a data aggregation tool that can then feed into other databases. It includes several views of a project including summary information, diagrams (conceptual models and results chains), and planning/work plan tools (for example, all of the results chains diagrams in this report were produced using Miradi). Users typically develop strategies for conservation, specific actions within the strategies and indicators of project effectiveness. Strategies are explicitly structured to lead toward improvement in the viability of

conservation targets, and the system can track supplementary information about the targets and their viability status. Threats/stressors are classified and prioritized using open standards. Among all the software evaluated, Miradi has the most highly developed set of tools for developing and tracking indicators of project performance. It does not include spatial GIS data, but that is a planned enhancement for the future. Nor does it include any data security tools/restrictions, beyond the fact that it resides on a desktop. Built-in wizards help guide users through the software's planning and reporting modules. Miradi produces XML output that can be imported into other databases. For example, Miradi currently produces an XML output that can be directly imported into TNC's ConPro system. Miradi is a non-profit joint venture between the Conservation Measures Partnership (conservationmeasures.org) and Benetech (www.benetech.org). Miradi runs on Windows, Mac, and Linux Operating Systems. Miradi is released under an Open Source License. Although the source code is freely available, Miradi's business model involves having user fees support the ongoing development and improvement of the software. Compiled versions of the software are available for a small annual fee. Organizational licenses that allow unlimited ability to use the software and custom data fields and training are also available.

- **Wildlife TRACS** (Tracking and Reporting Actions for Conservation of Species) (www.fws.ekosystem.us) – Wildlife TRACS is a new, online database under development by the USFWS and being piloted by Washington Department of Fish and Wildlife. A prototype is planned for release at the 2010 AFWA Annual Meeting. Completion of a version deployable to the states is expected in 2011. Wildlife TRACS is the only data management tool that is explicitly being designed to facilitate WSFR/FWS tracking and reporting on federal assistance grants, including SWG, with the ultimate purpose of strategically directing SWG funds to meet SWAP priorities. The design team includes representatives from state fish and wildlife agencies, AFWA, and many of the organizations that maintain the other data management tools listed here (Conservation Registry, HabITS, Miradi, Biotics) to create a forum for planning future interoperability among these systems. Because the design of Wildlife TRACS is occurring in concert with the AFWA Effectiveness Measures Working Group, it will incorporate most or all of the key recommendations of this report over time, including capability to manage data about projects, actions, conservation targets (in the context of projects), threats/stressors, monitoring design, and project context. The tool will have both a public access interface, as well as a more controlled, security enabled interface for the States and WSFR. Only the States and WSFR will be able to enter or edit data. States and WSFR will have control over the types of data displayed on the public website. The business model is based on organizational support by the USFWS, including implementation assistance to the states. The USFWS will hold all rights to the software in perpetuity.

Other Important Systems

- **Biotics 4** (www.natureserve.org/prodServices/biotics.jsp) – Biotics 4 is a desktop application designed to integrate into the workflow of state natural resource agencies for tracking the location and status of species and ecosystems. The fundamental data unit is the conservation target, which can be either a species or ecological element. The targets are mapped in GIS following published standards for Element Occurrences (www.natureserve.org/prodServices/eodata.jsp) and are accompanied by extensive text information in an Oracle database. Users can add their own, custom data tables to the standard core without restriction. Data security tools are highly refined to support the variety of state-specific data privacy rules, and most states restrict access to the primary data set. To provide data access, NatureServe and the states publish Biotics data through websites such as NatureServe Explorer (www.natureserve.org/explorer) or the Montana Online Field Guide (fieldguide.mt.gov). Biotics 4 incorporates open standards for a variety of data types, including species taxonomy, ecological classification, threats/stressors, conservation status, population viability and ecological integrity, spatial data formats, and metadata. Data about actions are captured in unstructured text fields. Project descriptions, budget and work plan details are not part of the data model. System enhancements under development include improved handling of field observation data, as well as a significant redesign to a hosted web application with a streamlined user experience. Biotics's contribution to measuring SWG/SWAP effectiveness is its ability to track changes in the status of a conservation target over time based on scientifically sound, nationally consistent, peer reviewed methods that allow status and trends to be compared among places and among conservation targets, and support rollup for multi-state reporting and analysis. Biotics 4 installations are licensed from NatureServe (www.natureserve.org) for an annual maintenance fee. The system is currently deployed in 46 US states and Puerto Rico, six Canadian provinces, three countries in Latin America, and a handful of other institutions (e.g., Navajo Nation and

Parks Canada). The remaining states all use fully compatible and interoperable systems. Biotics 4 is relatively complex, and requires user training that emphasizes data QA/QC. Most states employ a full-time or part time Biotics data manager. Licensed users receive full support services including online help, regularly-scheduled webinar training, customer service/phone support during business hours, system maintenance upgrades, and have the opportunity to participate in system design teams.

- **DataBasin** (http://databasin.org) – This is an online tool for sharing and visualizing spatial data, currently in beta version. DataBasin's larger objective is to create a vibrant, online community of conservation practitioners who self-organize into interest groups that share and improve spatial data, thereby reducing the time and effort it takes to find and access relevant data sets. The general public can browse the available datasets and preview maps, but users must register (for free) to access interactive maps, upload or download spatial data. Attributes of the data sets are not standardized, so DataBasin requires users to provide metadata with uploaded data sets to ensure proper use. The current version of the tool was built by the Conservation Biology Institute in partnership with ESRI, and is powered by ArcServer and ArcGIS Online. Thus registering with DataBasin also registers users with an ESRI global account, which includes 2 GB of free, personal data storage space for uploaded data. Although DataBasin is not currently set up to deliver data via web services, it should be a valuable source of quality spatial data that states can integrate into their SWAP analyses.
- **NatureServe Explorer Web Service** (http://services.natureserve.org/index.jsp) – This tool provides free and open access to virtually all of the data maintained in the Biotics 4 data system, except for sensitive spatial data. This web service provides direct access to data on the status, distribution, range, taxonomy (including synonyms), habitat preferences, threats and management needs of over 53,000 species of the United States in easy to manipulate XML format for incorporation into state-based data systems or other tools such as Wildlife TRACS. This information and the full national vegetation classification are also freely searchable by the public on the NatureServe Explorer website (www.natureserve.org/explorer) with search results downloadable in PDF or XML formats.

APPENDIX V. WORKING GROUP CHARTER

Purpose

The Working Group will develop, test, and roll-out a performance reporting framework for assessing the effectiveness of State Wildlife Grants and the broader Wildlife Action Plans.

Working Group Members

AFWA Staff: Mark Humpert, Terra Rentz
Contractor-Foundations of Success: Nick Salafsky, Caroline Stem
Working Group Members:

Faith Balch, *Minnesota Department of Natural Resources*
Dana Baxley, *Kentucky Dept. of Fish & Wildlife Resources*
Tara Bergeson, *Wisconsin Dept of Natural Resources*
Chris Burkett, *Virginia Dept of Game & Inland Fisheries*
Wendy Connally, *Texas Parks and Wildlife Dept*
Jenny Dickson, *Connecticut Dept. of Environmental Protection*
Mike Harris, *Georgia DNR, Wildlife Division*
Eric Rickerson, *Oregon Dept of Fish & Wildlife*
Tracey Tomajer, *New York Dept of Environmental Conservation*
Ron Essig, *US Fish & Wildlife Service*
Karl Hess, *US Fish & Wildlife Service*
Connie Young-Dubovsky, *US Fish & Wildlife Service*
Matthew Birnbaum, *National Fish & Wildlife Foundation*
Amielle DeWan, *Defenders of Wildlife*
Shelley Green, *The Nature Conservancy*
Mary Klein, *NatureServe*
Tess Present, *National Audubon Society*
Priya Nanjappa, *Association of Fish & Wildlife Agencies*

Working Group Advisors:

Jon Kart, Vermont
Jon Ambrose, Georgia
Dee Blanton, USFWS
Cindi Jacobson/Mary Rabe, Alaska
Dennis Figg, Missouri
Mike Hickey, OMB**
Kelly Rezac, Florida
Jeff Lerner, Doris Duke Charitable Foundation**
** ex officio

Working Group/Advisor Roles

Working Group members will collaboratively develop effectiveness measures and an implementation plan for roll out of an effectiveness measures framework. Working Group members will attend monthly conference calls, attend 2-3 multiday working group meetings, assist with work products and contribute knowledge and expertise. Advisors will serve as first-line reviewers, contribute their knowledge and expertise, and potentially serve on subcommittees. Advisors may be invited, but not required, to attend conference calls or a workshop.

Relationship of Working Group to AFWA

The Effectiveness Measures Working Group under the Teaming With Wildlife Committee (approval by Directors)

Background

State Wildlife Action Plans were completed by all states and territories in 2005. In the plans, states were required by Congress to include a proposed monitoring plan for at-risk species and their habitats and for monitoring the effectiveness of proposed conservation actions and for adapting these conservation actions to respond appropriately to new information or changing conditions (Required Element 5). Arguably, implementation of the monitoring plan has been one of the greatest challenges that states have faced. In addition, reporting of performance measures for federal programs has taken on greater significance during the last four years. There is a need to demonstrate that federal investments in Wildlife Action Plans through the State and Tribal Wildlife Grants are having a measureable impact. This project will build on and use the processes developed in the northeast as part of the Regional Monitoring and Performance Reporting Framework project. The ultimate goal of the project is to develop an agreed upon effectiveness measures framework that is national in scope and can be used to report progress and successes of Wildlife Action Plans and the State and Tribal Wildlife Grants Program.

Workgroup Charges

1. Develop an initial iteration of a monitoring framework that strategically prioritizes audiences, information needs, methods and potential indicators to measure the effectiveness of conservation interventions.
    a. Identify who the audiences are
    b. Clearly define what each audience needs to know and how each audience will use the information they get and how detailed an answer they will need
    c. Review current monitoring efforts and identify additional monitoring needs to feed the framework
2. Test this monitoring framework with a mixture of different kinds of projects
3. Agree on process and next steps for implementing this framework across all states
4. Identify pilot program states to initiate rollout of monitoring framework

Who Will Be Served

Member states of the Association of Fish and Wildlife Agencies, US Fish and Wildlife Service, Office of Management & Budget, Congress, Partners

Measures of Success

To be determined by Working Group

Products/Deliverables

Final Report & Implementation Plan

Duration

The Working Group was established at AFWA's Annual Meeting in Austin, TX in September 2009. It will remain active until AFWA's 2010 Annual Meeting unless extended by the establishing committee. An interim report will be presented at the 2010 North American Wildlife and Natural Resources Conference in Milwaukee, WI.

Anticipated Timeline

Timeframe	Task	Location	Milestone
September 2009	AFWA & FOS staff meet	DC	Initial Scoping – develop plan; identify working group needs; review background information
September 2009	TWW committee approval	Texas	Working group established by the Teaming With Wildlife Committee
Mid-October '09	Meet with FOS to complete charter/determine working group members	DC	First draft of Charter is completed; working group members identified and confirmed
November 19, '09	Conference call with working group members	N/A	Review/revise draft charter; draft agenda for first in-person meeting; reading assignments
December 8-10, 2009	First working group meeting	DC	Introductions, ID audiences, examine past work on indicators, begin developing indicators
Mid-Jan, Feb & Mar '10	Web/conference call	N/A	Report on work assignments
March	North American NRE Conference	Wisconsin	Interim progress report at TWW Committee mtg.
Mid-April '10	Web/conference call	N/A	Report on work assignments
Mid-May '10	Second working group meeting	N/A	Pilot measures developed
Mid-June '10	Web/conference call	N/A	Report on work assignments
Mid-July '10	Third Working group meeting	TBA	Measures and framework refined
Mid-August '10	Web/conference call	N/A	Develop final report; identify next steps
Mid-Sept '10	Presentation/Approval at AFWA Annual Meeting	Michigan	Present final product at AFWA Annual meeting
Oct-December '10	TBD		Implement rollout plan

Objectives from Policy Grant from Doris Duke Charitable Foundation.

Issue 4-Develop Indicators of Success. Development of State Wildlife Action Plans in each state and territory was a major milestone. However the success of this planning effort is dependent upon showing results to policy makers, partners, and the public. To date there are no national effectiveness indicators that can be used to show progress. The development of measures would enable AFWA, the states, and their partners to assess performance and communicate successes.

Background: Increasingly, federal and state governments are using performance and effectiveness measures to assess how well programs are working. The use of performance measures gained attention in the Clinton Administration which used balanced measures as part of its National Partnership for Reinventing Government. The Bush Administration has been using the Program and Reporting Tool (PART) for its performance-based budgeting process. President-elect Obama has stated his intent to make government more accountable and efficient so it's likely that the use of performance measures to assess government programs will continue. The Northeast Association of Fish and Wildlife Agencies contracted with Foundations for Success to develop performance measures for State Wildlife Grants, the only regional association to do so. We propose to work with Foundations of Success to develop national effectiveness measures for State Wildlife Action Plan implementation using a similar process that was used in the northeast.

Goal: Develop key national effectiveness measures to help assess and communicate the performance of State Wildlife Action Plans.

Proposed Action: Assemble a national workgroup to develop measures and communicate State Wildlife Action Plan effectiveness.

Strategy 1. Hire a contractor (i.e., Foundations of Success) to assemble a workgroup and facilitate a process to develop and test national effectiveness measures for State Wildlife Action Plans.

Strategy 2. Develop and implement a communication strategy for implementing national effectiveness measures.

Strategy 3. Provide training to interested states on how to use and report State Wildlife Action Plan performance.

Strategy 4. Begin rollout and implementation of effectiveness measures in interested states.

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