Evaluation of The Nature Conservancy's Rapid Action Conservation Plan: The South Sound Inlets Case Study

by

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ABSTRACT

Comprehensive conservation plans cover all of the characteristics of an area such as the biophysical, the human, and the institutional ecologies. A Conservation Action Plan (CAP) is The Nature Conservancy's (TNC) comprehensive process for planning, implementing, and measuring success for their conservation projects. This paper evaluates the Washington Chapter of TNC's Rapid CAP for the nearshore marine habitats of the South Sound Inlets of Puget Sound and provides recommendations. Findings are that the planning process was flexible enough to meet changing needs and time constraints, but did not remain objective enough to be justifiable. The planners had trouble dealing with all of the different perspectives and interests of the stakeholder representatives in the South Sound. The planners could have improved their contact relations by doing more pre-planning research into the conservation activities already in the area and by constructing a more robust system for including stakeholders in the planning process.

INTRODUCTION/BACKGROUND

Definition

Comprehensive conservation plans cover all of the characteristics of an area. For a small area this is an immense amount of information, but for a large project area a comprehensive plan can be overwhelming. Despite this, a comprehensive approach to conservation planning is more efficient than looking at individual threats or species because there are often common solutions to multiple problems. Comprehensive plans have also evolved to include the development of alternatives and subsequent ranking to decide on a course of action (House, 1976).

To understand all of the characteristics of an area, the total ecology must be researched. The total ecology of an issue or area is the combined biophysical, institutional, and human ecologies put together. Biophysical ecology represents the traditional definition of ecology: the interactions of the abiotic environment and the biotic communities. Neither could exist without the other, just as the biophysical ecology of an area cannot be addressed without considering its institutional and human ecologies. Institutional ecology is made up of the public agencies and policies that have jurisdiction over that area. All other stakeholders including non-governmental organizations and individuals make up the human ecology. Without full knowledge of the total ecology of an area, a comprehensive conservation plan cannot hope to succeed because it would not address all stakeholders.

History

The comprehensive plan originated as a tool for urban development planning and guidance. The traditional use has been to direct the public and private uses of urban land (Rodgers, 1976). The earliest comprehensive plan was the 'Master Plan', which integrated the plans of all technical fields interested in the physical layout of a region. It was a guide rather than a blueprint for the development and growth of the subject area. A plan is really a goal for the area (House, 1976). This was intended to include the natural environment, but it was many years before this became common practice. These urban plans were inadequately covering environmental pollution and inefficient resource use, so programs such as NEPA had to step in. It wasn't until the 60's that the natural environment was included in comprehensive plans and that was only because it was made necessary because urban growth, waste disposal, and pollution were becoming problems that needed to be dealt with (Rodgers, 1976).

With the same evolution as the urban comprehensive plan, the ecosystem-based management plan became the standard for the environment. The ecosystem-based management plan has the same components and definition as the comprehensive plan. However, instead of combining different aspects of urban planning for a developed area, it integrates all of the components of ecosystem and resource use and users for a natural area (Boesch, 2006). Although they were not the first to suggest it, it was only after Agee and Johnson published their book in 1988 concerning ecosystem management that the scientific community responded. The ecosystem-based concept came much later than the

comprehensive plan, but has had the same revolutionizing effect on resource management (Grumbine, 1994).

The comprehensive approach to environmental planning is preferable to the species- and issue-specific approach for several reasons. Separately planning for each aspect of the environment such as different species, pollution, and development is inefficient. It duplicates efforts and can even impede progress. The National Environmental Policy Act (NEPA) of 1969 authorizes and directs all agencies to address environmental assessments or problems with an interdisciplinary approach. Each decision made is with consideration of its application to the system as a whole. Often times common solutions are found to multiple problems. The inclusion of all components of an ecosystem provides guidelines for current decisions and directs the project area to the desired end state. A model of prudence, the comprehensive approach is planning for environmental crises rather than reacting to them (House, 1976).

Purpose

The purpose of this paper is to evaluate the Washington Chapter of The Nature Conservancy's (TNC) Rapid Conservation Action Plan (CAP) for the nearshore marine habitats of the South Sound Inlets of Puget Sound as a case study of a comprehensive plan and to provide recommendations. The evaluation will be based on how well the Rapid CAP accomplished its purpose, reflected the Rapid CAP guidelines, and produced objective results. It will evaluate how effectively TNC dealt with the difficulties of developing and coordinating a comprehensive conservation plan with many different stakeholders in addition to the many ecological aspects of the project area. I will also provide recommendations on which parts of the process could have been done better and how.

Case Study Description

TNC's mission is to preserve plants, animals, and natural communities by protecting the habitats they need to survive. Historically, TNC conserved the environment through direct purchase or donation of land. Land acquisition protects important parcels, but natural processes occur at scales too large to protect solely through the establishment of preserves. Therefore, TNC is now concentrating more on ecosystem-wide conservation. Generally a CAP has been used to plan for land that TNC has acquired, so the total ecology of that land was less complicated. Because of TNC's interest in ecosystem-based management, they are looking at conserving areas that they do not own. To determine strategies without a significant time investment, TNC decided to do a Rapid CAP in this case, which is a shorter, more general adapted version of the original CAP. This is a more difficult undertaking in its own way, as there could be many project area activities that are already underway and less time to deal with all of the relevant stakeholders. Private enterprises, governmental agencies, and the public own various parcels of the land area. (TNC, 2007a).

A CAP is TNC's comprehensive process for planning, implementing, and measuring success for their conservation projects. It is an objective, consistent, and transparent process intended to be an account of conservation actions and the outcomes of projects. There are five steps to a CAP: define focal conservation targets, assess viability, identify threats, create strategies, and implementation (TNC, 2007b).

CASE STUDY

South Sound Inlets Nearshore Conservation Action Plan

The Nature Conservancy of Washington

March 16, 2008

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INTRODUCTION

The Nature Conservancy (TNC) initiated a conservation planning process for a number of reasons. The primary goal was to set priorities for current projects. In addition, a crucial outcome was to establish the potential direction for future projects and continued investment in the area. Ultimately, this plan will also assist in directing the Russell Family Foundation grant funding, while ensuring effective marine conservation in the South Puget Sound nearshore environment.

The Conservancy initiated a Conservation Action Plan (CAP) in the South Sound Inlets due to an ecological interest in the area and an availability of necessary resources. The source of the ecological interest was the Willamette Valley-Puget Trough-Georgia Basin (WPG) Ecoregional Assessment. TNC, partnering with The Washington Department of Fish and Wildlife and The Nature Conservancy of Canada, conducted the assessment. It highlighted certain marine, freshwater, and terrestrial areas as 'portfolio sites', or those sites with the highest ecological value. The results of this assessment identified a number of marine regions with high ecological value, one of which was the South Sound Inlets. A CAP is typically developed for regions or preserves where there is high biological significance for conservation and a need for more information to develop specific strategies for the area. In this case, we used a Rapid CAP to determine strategies for the South Sound nearshore region, an area that the ecoregional assessment identified as valuable and with a potential for successful conservation outcomes for marine biodiversity.

BACKGROUND

Puget Sound is an extremely large and deep estuary located in northwestern Washington State. More specifically, it is a glacial fjord with an average depth of 450 feet where freshwater mixes with saltwater brought in from the Pacific Ocean through the Straits of Juan de Fuca. Puget Sound covers 50 miles of coastal Washington, with more than 2500 miles of shoreline and marine resources. It is home to many species of charismatic megafauna such as Pacific salmon, orcas, Pacific white-sided dolphins, Harbor seals, and marine birds. Also, Puget Sound is home to many bivalve species that are harvested recreationally and commercially, making the area important to people for its abundant natural resources. For example, there are bivalves such as the Olympia oyster that only grow in Puget Sound, more specifically in the south sound. Many of the marine birds that inhabit Puget Sound either year-round or seasonally such as scoters, loons, and grebes use the South Sound Inlets as resting and aggregation areas.

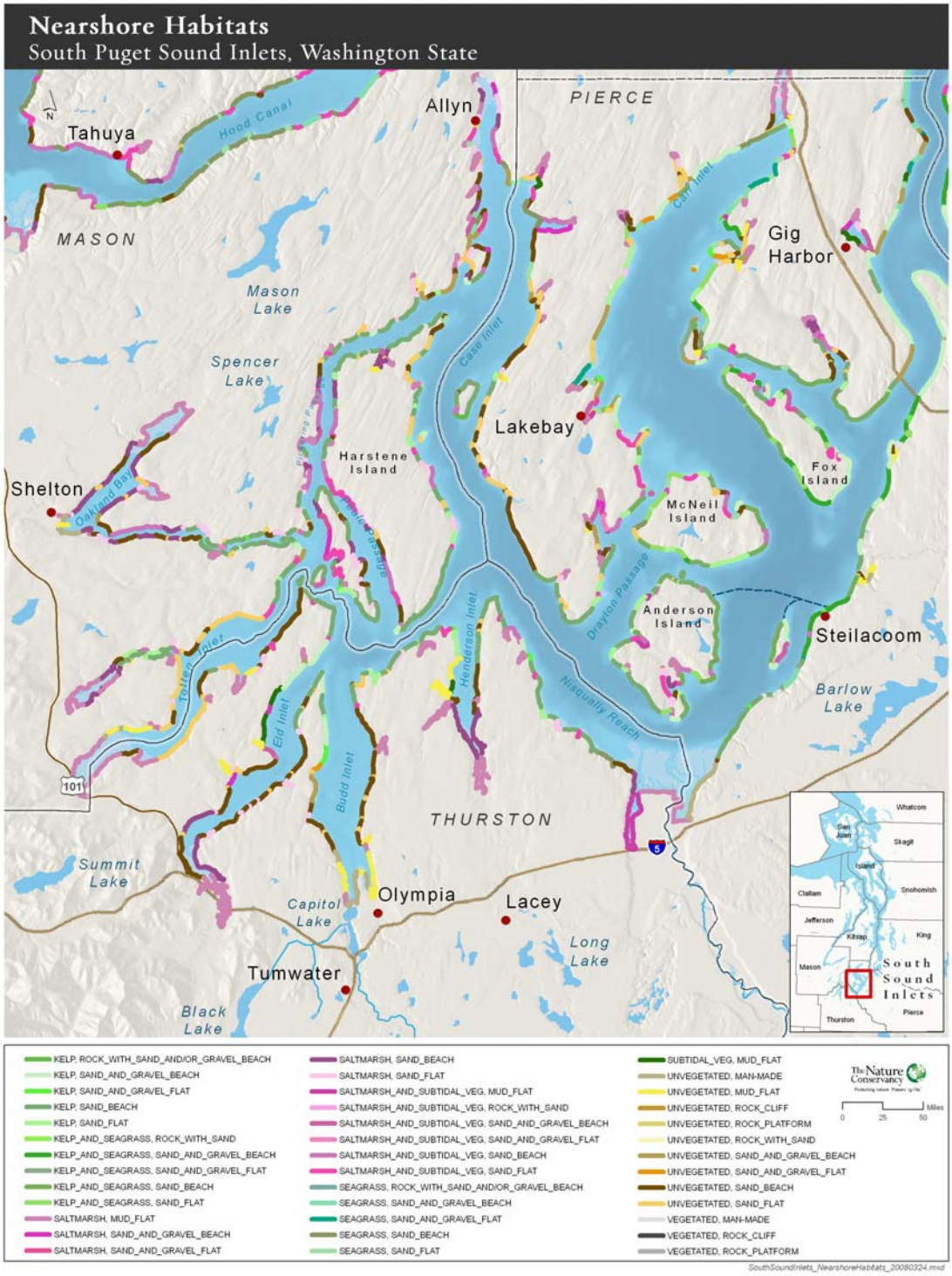
The species that rely on the South Sound Inlets are supported by a vast array of habitats (Figure 1). Shallow inlets and embayments with many islands and extensive shorelines characterize the basin. Extending from coastal wetlands to the depth of light penetration, the nearshore habitats are about 10 meters deep (Figure 2). Because the marine habitat is defined by the mixing of fresh and salt water, much of the area has estuarine habitat

characteristics with numerous mudflats and saltmarshes along the shorelines. The largest river entering this basin is the Nisqually, which brings in a significant portion of the area's freshwater. Most of the shoreline is sand, gravel, and cobble beaches, but docks and marinas are common near the cities of Shelton, Olympia, and Tacoma.

While there are many ecological and social values in this area, there are also many threats to the marine habitats of the South Sound. Much of the waters of the South Sound are under stress from human activities, including development, invasive species, climate change, and the input of toxic contaminants from industry and urban runoff. Many sites in the South Sound have impaired waters due to pathogens, toxics, and low dissolved oxygen content. The overall dissolved oxygen concentrations in Puget Sound are continuing a downward trend that began about 10 years ago. The Washington Department of Natural Resources estimates that 34% of the shoreline has been modified by human activities, so it is clearly important to protect such a significant source of natural resources.

The South Sound Inlets comprise all Puget Sound waters south of the Tacoma Narrows straits. This area encompasses waters in Mason, Thurston, and Pierce counties. It includes Totten Inlet, Case Inlet, Budd Inlet, Eld Inlet, Carr Inlet, Hammersly Inlet, Henderson Inlet, Oakland Bay, Colvos Passage, Pickering Passage, Hale Passage, Peale Passage, Dana Passage, Drayton Pasage, Balch Passage, Nisqually Reach, and North Bay. There is an Indian Reservation at the head of Totten Inlet on Squaxin Island and also along the Nisqually River. With all of the rich resources and individual jurisdictions, the South Sound Inlets is a challenging and rewarding project area for a Conservation Action Plan.

Figure 1. The nearshore habitat types of the South Sound Inlets of Puget Sound.



PLANNING PROCESS

Conservation Action Plan

The Nature Conservancy developed the CAP process for planning, implementing, and measuring success for their conservation projects. The framework is a way of thinking strategically to focus actions where they are likely to have the most impact. It is an objective, consistent, and transparent process intended to be an account of conservation actions taken to get to powerful results. There are five basic steps to a CAP, including defining focal conservation targets, assessing viability, identifying threats, creating strategies, and implementation.

The first step is to define the scope of the project by delineating boundaries and selecting focal conservation targets. Focal conservation targets are a limited list of species, ecological communities, and ecological systems that represent the overall biodiversity of the project area. Typically, eight or fewer focal targets adequately define the biodiversity of the conservation plan's region. More than eight targets would complicate the entire planning process, as the later stages of the plan are based on these focal targets.

The next step involves assessing the viability of each of these targets. In this stage of the planning process the group defines each target's current ecological status and determines how to measure the status over time. This step ultimately provides the information necessary to measure success and identify the targets most in need of conservation action for long-term sustainability.

Step three is comprised of the identification of the critical threats to targets in the project area. Threats to each target are identified and then ranked based on scope, severity, irreversibility, and the number of targets they affect. The threats are compared to each other based on these rankings and the number of targets they affect. Only those with the highest rankings are considered critical threats and used in the following step.

The development of strategies is the next step. Strategies are created to abate the critical threats and to enhance the viability of targets with degraded key ecological attributes. These strategies are then ranked based on such variables as feasibility, cost, effectiveness, contribution to all threats and viability enhancement. Indicators are created to measure the success of the strategies, along with specific action steps to complete the strategies.

The last step of a CAP is implementation. Work plans are created using specific action steps, with the identification of a project leader for each step. These plans are then executed within the constraints of logistics and resources. Monitoring plans are also created at this step so the overall plan can consistently be updated and adapted.

At each of these steps, the CAP data is stored in an excel-based Conservation Action Planning Workbook. The workbook contains all of the information in organized tables and in the ranking and evaluation processes. The workbook format is the same for all CAPs that TNC develops, which makes it simple to compare and share information.

Perhaps the most important function of the workbook is that it guides planners through the process with directions and descriptions.

Rapid Conservation Action Plan

TNC had not previously been involved in the South Sound Inlets, which made this plan the first foray into the area. To determine strategies without a significant time investment, TNC decided to complete a Rapid CAP. This is a condensed and accelerated version of the full CAP. A Rapid CAP is used to define the conservation goals of an area that will be implemented when and if the Conservancy decides to become involved. It provides the opportunity to quickly develop strategic priorities for conservation action. Therefore, it was the perfect tool for the conservation planning process in the South Sound Inlets to learn more about the critical strategies in the area without a time commitment.

The purpose of the Rapid CAP was to determine the conservation priorities of the project area and use them to guide future priorities and investments in the area. We followed TNC's Guidance for a Rapid CAP and included the key components necessary to develop a well-constructed product: a core planning team, critical review, drafted targets ahead of time, maps, a commitment to an iterative approach, and use of the CAP planning Excel workbook. To better follow the Rapid CAP guidelines, we used the Basic Version of the workbook Version 5 rather than the full version. This version was specifically designated for the Rapid CAP process.

There are specific areas where the normal CAP can be condensed or abbreviated to produce a Rapid CAP. We used the best information available and rated the key ecological attributes qualitatively, rather than being specific and quantitative. When defining the critical condition ratings, it is important to describe what would be a good key attribute rating and the current condition of the attribute or if applicable, the indicator of that attribute, but not every conditional rating must be defined if the information is not available. The identification of stresses was skipped so our focus and ranking were on the sources of stress (threats). We developed strategies only for critical threats and those targets with low viability that could be feasibly restored. Normally a shortened situation analysis is conducted to describe the current understanding of the human and biological context of the project situation. This can be done by asking probing questions and including notes for the objectives from the results. However, we decided to skip the formal analysis. According to the guidelines, only a short list of action steps that are likely to be undertaken in the near future should be developed for each strategic action. Our plan has not yet developed past strategic actions.

As is standard practice when developing a CAP, the core planning team wanted to involve local experts. This adds scientific credibility and fosters cooperative relationships. We decided that the most efficient way to involve the local experts was to hold a workshop in the South Sound and invite them to aide in the development of the CAP. The South Sound locals provided area-specific information that was greatly appreciated.

Workshop

After forming the core planning team and holding a meeting to discus the purpose, scope, and vision of the CAP, we began to develop the draft list of focal conservation targets. Once these targets were established, the Conservancy held a two-day workshop to go through the key components of the Rapid CAP process.

The workshop was held on July 10 and 12, 2007. They were planned 2 days apart so the core team could summarize, research, and organize the information gained from the first day before beginning the second day. The agenda for the two-day workshop was adapted from the Rapid CAP guidelines to fit our planning goals and time frame (Appendix A). At the workshops, we first presented background information about the CAP process to familiarize the participants.

To get the most out of our local experts in a short amount of time, the first day we separated them into three smaller groups based on their interests and knowledge. The groups were assigned the most appropriate targets and asked to discuss the nested targets, develop key ecological attributes, indicators, and rankings, and come up with a list of threats for each target. Each small group included a member of the core planning team to facilitate the discussion and follow the CAP guidelines. The Project Manager guided the overall process and answered questions. The information gathered from the participants that day was recorded by hand in tables that would later be added to the CAP workbook.

On the second day we grouped all of the participants together to develop the threats for all of the targets, rank those threats and reach a consensus on the critical threats. All comments and qualifications from the workshop were added to the workbook in the comments section. Originally we had planned to begin developing strategies for the critical threats and degraded key ecological attributes later that day. However, threat-ranking took longer than anticipated. The core team decided to develop strategies at a later date with all of the comments from the workshop in mind.

In addition, we met with a regional group with expertise on salmonids after the workshop. This group assisted us during their South Puget Sound Salmon Recovery Group technical committee meeting on July 23. We went over the threats to salmonids and then ranked them as a group.

TARGETS

Focal conservation targets are chosen to represent and encompass the biodiversity in the project area. They are the basis for all other goals and action of the CAP. Throughout the process of choosing focal targets, one must consider the various levels of biological organization, spatial scale, and terrestrial, freshwater, and marine systems. Targets that span these spectrums will better represent the project area. There could potentially be many different focal targets that represent a location, so there is no one correct list of targets. The planning guide defines three levels of decreasing complexity of the targets: ecological systems, ecological communities, and species.

Ecological systems (ecosystems) are the most complex and broad-ranging focal target. Ecosystems are defined as assemblages of ecological communities that exist in similar habitats on a landscape. These ecosystems can be terrestrial, freshwater, marine, or a combination. Ecological communities are the building blocks of ecosystems. They are populations of species co-occurring within an ecosystem. A species focal target is the most discrete and least complex choice. It is chosen when the species' needs cannot be subsumed under any of the other chosen targets.

TNC has a coarse filter and fine filter selection process to objectively determine the focal conservation targets. Coarse filter targets are those whose conservation also inherently conserves a suite of other communities or species. These communities and species are called nested targets because their needs are "nested" or subsumed under those of one or more focal targets' conservation strategies.

Fine filter targets are those that cannot be adequately covered by the coarse filter targets because they have unique ecological attributes or conservation requirements. For example, some species or communities are located in distinct habitats, have unique life-history characteristics, or face unique threats. Also, some species use wide-ranging habitats and resources so that their needs cannot be met by conservation of one ecosystem. These species are still integral to the project area because they are of high ecological value and provide connectivity across environmental gradients.

The core planning team came up with a draft list of targets and nested targets (Table 1). These were sent out to the workshop participants for comments before the workshops were held. Drafting a target list before the workshop allowed a consensus to be reached ahead of time so the workshop could focus on the next steps in the plan. The workshop participants arrived at the workshops prepared to discuss the key ecological attributes and viability of the targets.

Table 1. Chosen Focal Conservation Targets and associate Nested Targets for the South Sound Inlets CAP.

Focal Targets	Nested Targets	
Salmonids	Chinook salmon Bull trout Steelhead Cutthroat trout Coho salmon Chum salmon Pink salmon	
Marine Fish	Pacific herring Pacific sand lance Surf smelt Pacific hake Copper rockfish Quillback rockfish	Anchovy Lingcod Spiny dogfish Dover sole Walleye pollock Pacific cod
Marine Birds	Marbled murrelet Western grebe Red-necked grebe Scoters Diving/bay ducks	Pigeon guillemot Red-throated loon Common loon
Nearshore Sand/ Gravel Communities	eelgrass marine mammals Olympia oyster Polyorchis jellyfish Pacific sand lance native bivalves Pacific herring Surf smelt	
Mudflat/Tidal Marsh Ecosystem	coastal streams emergent vegetation Olympia oysters salmonids eelgrass	shorebirds dabbling ducks Orange sea pen
Shoreline Forest Communities	North Pacific Dry Douglas-fir Forest and Woodland system North Pacific Maritime Dry-Mesic Douglas-fir-Western Hemlock Forest North Pacific Maritime Mesic-Wet Douglas-fir-Western Hemlock Forest coastal streams marine birds salmonids Bald eagles Great Blue Heron	

South Sound Inlets Target Descriptions

Mudflat/Tidal Marsh Ecosystem

This focal target comprises the ecological communities found in the mudflat and marsh systems that occur primarily along the estuarine shorelines. Tidal marsh habitats are located near the high tide line and typically transition into intertidal mudflats which extend to the subtidal zone. Tidal marshes are influenced by freshwater input and saltwater mixing which determine the marsh vegetation composition. Marshes are characterized by emergent vegetation that provides food and habitat for marine birds and fish. For example, salmonids use this ecosystem for juvenile foraging and shelter before entering the oceanic environment. Vegetated or unvegetated mudflats are essential habitats for marine bird, shorebird, and fish foraging and are crucial for nutrient cycling processes. This ecosystem represents such nested targets as coastal streams, emergent vegetation, shorebirds, and salmonids.

Nearshore Sand/Gravel Communities

This focal target describes the ecological communities found in the soft-bottom habitats of this region that typically occur along embayments or beaches with low wave and current energy. Sand and gravel communities in this region are either unvegetated or have associated vegetation such as eelgrass beds and kelp. The target encompasses marine species that live in or depend on sand and gravel habitats such as native bivalves and forage fish. Also, the shoreline processes that maintain the sediments and physical structure of these areas are represented by this target.

Shoreline Forest Communities

Shoreline forest communities consist of the Ecological Assessment-identified dry evergreen forests and woodlands and Douglas Fir-western hemlock-western redcedar forests. This target encompasses only those areas of the forest that provide marine services and act as the interface between terrestrial and marine ecosystems. The shoreline forest communities also include the animals that live within and depend upon both forest and marine systems such as marine birds for nesting and salmonids for large woody debris. These communities are a key source of woody and vegetation debris, which help protect species against variable hydrography and provide necessary nutrient inputs to the shoreline environment.

Salmonids

This focal target includes salmon species that use both the freshwater and marine habitats of the South Sound Inlets. The South Sound nearshore provides critical habitat for juvenile salmonid feeding and shelter. Following juvenile growth and development in riparian and estuarine habitats, salmonids migrate to the Pacific Ocean. Adult salmon species return to the region en route to their natal streams for spawning. Characteristic species are the federally threatened Chinook salmon, Steelhead, and Bull trout. The

primary threats to salmonids in this area are fragmentation of migratory corridors, habitat loss, overharvest, pressure from hatchery stocks, and non-native competition.

Marine Fish

This focal target includes forage fish and groundfish, several species of which were identified in the Ecoregional Assessment. Forage fish are keystone species in marine trophic interactions, providing a significant portion of the diet for salmonids and marine birds. After spawning, their eggs are deposited on eelgrass or the sand and gravel beaches of the South Sound. Groundfish, which include rockfish, cod, pollock, and dogfish, are those marine fish that live on or near the bottom for most of their adult lives. They are a major component of the food web in Puget Sound, as they connect nearshore and midwater elements to the bottom habitat. Forage fish and groundfish are declining in the South Sound area due to shoreline modification, habitat loss, overharvest, and climate change.

Marine Birds

Many species of marine birds including seabirds and seaducks are full or part-time residents of Puget Sound. This focal target represents marine birds with significant feeding aggregations or nesting sites in the South Sound area including: Marbled murrelets, scoters, Common murre, Harlequin ducks, western and Red-necked grebes, loons, dabbling ducks, and diving/bay ducks. Threats to this target include loss of nesting habitat, entanglement in fishing gear, and climate change.

Olympia oysters (*Ostrea conchaphila*)

This species was identified in the Ecological Assessment and is a Candidate Threatened Species in Washington State. Formerly abundant, the Olympia oyster was an important food source for many coastal Native American tribes and early settlers. As the only native oyster to Washington, the population was quickly decimated due to overharvest, pollution, non-native competition, and habitat loss. Although Olympia oysters are no longer harvested naturally, the species has never recovered to historic levels. In addition to their role as historic and cultural icons of the Pacific Northwest, the oysters may increase water quality by filtering out pollutants. Olympia oysters are typically located in low tidelands or estuaries in areas such as seeps or creek channels that remain moist during low tide. This very specific habitat of marine systems with freshwater input was not covered by the other coarse filter targets, so the oyster was chosen as a fine filter target. They are found only in the south Puget Sound region and so are especially important to conserve in this plan.

VIABILITY

At the workshop, we developed key ecological attributes using at least one of each of the three types of attributes for each target. The attribute categories are size, condition, and landscape context (Appendix B). These attributes are critical aspects of the target's biology or ecology that, if missing or altered, would lead to the loss of that target over time. Each group of workshop participants selected an appropriate indicator for each attribute and qualitatively defined the current and desired ratings (Table 2). The ratings options were: Very Good, Good, Fair, or Poor, which are defined in Appendix B. The groups rating the desired condition based it on the desired state of that attribute and the rating that could conceivably be reached within the extent of the project area and the time frame of the plan. The current indicator status field was skipped due to time limitations and guidelines within the Rapid CAP.

Table 2. South Sound Inlets Rapid CAP Viability Analysis.

Conservation Target		Category	Key Attribute	Indicator	Current Rating	Desired Rating
1	Olympia oysters	Landscape Context	Source populations	Number of sites that are exporting larvae to other areas (2-3 weeks in the water column)	Fair	Good
1	Olympia oysters	Landscape Context	Water regime (moisture)	Freshwater seep presence	Good	Good
1	Olympia oysters	Condition	Emergent settlement structure (hard surface)	Silt free, consolidated substrate	Fair	Good
1	Olympia oysters	Size	Recruitment	Multiple age classes within a population	Fair	Very Good
2	Salmonids	Landscape Context	Condition of small creek mouths/pocket estuaries	Distance between undisturbed/undegraded small creek mouths/pocket estuaries	Poor	Fair
2	Salmonids	Landscape Context	Distribution of small creek mouths/pocket estuaries	Distance between undisturbed/undegraded small creek mouths/pocket estuaries	Poor	Fair
2	Salmonids	Condition	Abundance of nearshore prey items (forage fish, insects)			
2	Salmonids	Condition	Abundance of pelagic prey items (anchovy, algae)			
2	Salmonids	Size	Wild salmon populations	Percent wild salmon returning	Fair	Good

Conservation Target		Category	Key Attribute	Indicator	Current Rating	Desired Rating
3	Marine fish	Landscape Context	Rockfish habitat	Percent historic structure maintained	Good	Good
3	Marine fish	Condition	Dogfish/other midwater species			
3	Marine fish	Condition	Forage fish habitat quality	Index of shade/access/slope/woody debris/armoring	Fair	Good
3	Marine fish	Condition	Forage fish population diversity	High diversity index	Good	Good
3	Marine fish	Size	Forage fish population size (herring, smelt, anchovy, lance)	Total biomass of all forage fish	Good	Good
3	Marine fish	Size	Rockfish population	Percent breeding age individuals	Poor	Fair
4	Marine birds	Landscape Context	Nocturnal resting areas	Number of primary and secondary resting areas associated with sheltered concentration areas	Fair	Good
4	Marine birds	Condition	Sheltered concentration areas	Number of birds in these areas	Good	Good
4	Marine birds	Size	Foraging habitat	Acres of accessible shellfish beds	Fair	Good
4	Marine birds	Size	Foraging habitat	Acres of submerged aquatic vegetation	Fair	Good
4	Marine birds	Size	Foraging habitat	Forage fish abundance	Fair	Good
4	Marine birds	Size	Population size of Pigeon Guillemot	Number of active nests	Fair	Good

Conservation Target		Category	Key Attribute	Indicator	Current Rating	Desired Rating
5	Nearshore sand/gravel communities	Landscape Context	Intact terrestrial connectivity/exchange	Percent undisturbed connectivity	Fair	Fair
5	Nearshore sand/gravel communities	Condition	Ecological health/diversity	Average seasonal secchi depth	Good	Good
5	Nearshore sand/gravel communities	Condition	Ecological health/diversity	Percent native species	Fair	Good
5	Nearshore sand/gravel communities	Condition	Intact sedimentation	Grain size and beach slope index within 10% of historic	Fair	Fair
5	Nearshore sand/gravel communities	Condition	Water clarity	Average seasonal secchi depth	Good	Good
5	Nearshore sand/gravel communities	Condition	Water quality	Index of dissolved oxygen concentration in water column/sediment	Fair	Good
5	Nearshore sand/gravel communities	Condition	Ecological health/diversity	Abundance of species present	Good	Good
6	Mudflat/tidal marsh ecosystem	Landscape Context	Area of tidal marsh	Diversity of different tidal marsh habitat types		
6	Mudflat/tidal marsh ecosystem	Landscape Context	Area of tidal marsh	Percent of historic acres	Fair	Good

Conservation Target		Category	Key Attribute	Indicator	Current Rating	Desired Rating
6	Mudflat/tidal marsh ecosystem	Landscape Context	Connectivity to/transport of sources of sediment	Availability of sediment	Fair	Good
6	Mudflat/tidal marsh ecosystem	Landscape Context	Connectivity to/transport of sources of sediment	Running water from shoreline	Good	Good
6	Mudflat/tidal marsh ecosystem	Condition	Community composition	Percent?	Fair	
6	Mudflat/tidal marsh ecosystem	Condition	Invertebrate community structure (species composition, distribution)	Invertebrate benthic diversity	Good	Good
7	Shoreline forest communities	Landscape Context	Forested marine shoreline	Percent forest cover within edge of marine input zone within each inlet	Fair	Good
7	Shoreline forest communities	Condition	Connection to marine system	Percent unarmored forested shoreline	Poor	Good
7	Shoreline forest communities	Size	Functional freshwater riparian forest	Number of acres in the Channel Migration Zone	Fair	Good
7	Shoreline forest communities	Size	Large trees for heron and eagle nesting and roosting	Number of active nests and roosts	Fair	Good

THREATS

In standard CAP procedure, this stage is made up of two components, the identification of stresses and sources of stresses or threats. Stresses represent altered or impaired key ecological attributes that reduce the viability of the focal conservation targets. The threats are the root causes of the stresses. In the Rapid CAP framework there is the option of skipping the stresses step and moving directly to the threats step. For the South Sound Inlets CAP, we decided to follow this option and only identify threats in the interest of time. This is an alternative methodology option available in the CAP workbook Version 5. Due to the nature of the relationship between stresses and threats, we still identified stresses mentally to determine the threats, but did not include this in the workbook.

The threats were agreed upon during the second day of the workshop and were rated based on scope, severity, and irreversibility (Appendix C). All ratings referred to the impact of the threat to the conservation target in the project area that could reasonably be expected within 10 years under current circumstances. The ranking options were Very High, High, Medium, and Low. Scope refers to the geographic extent of the impact, while severity represents the level of damage. Irreversibility level is the probability that the threat can be reversed. This ranking method was adapted for certain threats such as climate change that would not be realized over the 10-year time scale such. In this case, we rated climate change over a longer time frame to account for the nature of this threat.

To make the threat ranking process more straightforward, we created larger groupings of threats that were more consistent across targets for better comparison. Although this made the threats more broadly defined, it was essential for identifying the most critical threats across many targets and therefore the strategy development phase of planning. The following is a list of the less obviously defined broad threats:

1) Shoreline modification – Any development in the shoreline area such as docks, houses, hotels, jetties, or armoring
2) Development in the watershed – Upland development located above the shoreline that increases impervious surfaces and therefore decreases drainage, affecting natural freshwater and sediment flow patterns
3) Modified plant communities – Altering the natural plant community to selected plant types for aesthetic reasons such as lawn and garden creation or conversion to commercial plants for farming or forestry
4) Hydrologic alterations – Alterations affecting the freshwater flow regime, including sediment supply and transport via streams

After the threats were individually ranked, we linked the threats to the key ecological attributes they affected. The Excel workbook program automatically ranked the threats based on the individual rankings for each target and the influence across targets and organized the threats in order of their level of impact (Table 3). The threats that ranked as very high or high overall were considered a critical threat. Next, we established objectives and strategies for all of the critical threats.

Table 3. South Sound Inlets Overall Threat Ranking.

Summary Table: The Top Threats Across All Targets		Olympia oysters	Salmonids	Marine fish	Marine birds	Nearshore sand/gravel communities	Mudflat/tidal marsh ecosystem	Shoreline forest communities		Overall Threat Rank
Project-specific threats		1	2	3	4	5	6	7	8	
1	Shoreline modification	High	High	High	High	High	High	High	-	Very High
2	Hydrologic alterations	-	Very High	-	-	Low	High	Medium	-	High
3	Overharvest of fish	-	High	Very High	Low	-	-	-	-	High
4	Persistent organic pollutants from current industrial and historical sources (in biota and sediments)	-	-	Very High	High	-	-	-	-	High
5	Climate change	High	High	Medium	-	Medium	High	Medium	-	High
6	Polluted stormwater runoff (metals, pesticides, PAHs from land sources)	High	Medium	Medium	High	Medium	High	-	-	High
7	Development in watershed	-	-	-	-	-	-	Very High	-	High
8	Disease and pathogens	High	-	-	-	-	-	High	-	High
9	Eutrophication	High	Medium	Medium	-	Medium	Medium	-	-	Medium
10	Aquaculture netting and other exclusions to feeding	-	-	-	High	-	-	-	-	Medium
11	Modified plant communities	-	-	-	-	-	-	High	-	Medium
12	Predation	-	-	High	-	-	-	-	-	Medium
13	Invasive species	Medium	-	-	-	Medium	Medium	Medium	-	Medium
14	Shellfish aquaculture	-	Medium	-	-	Medium	-	-	-	Medium
15	Human disturbance (lights, noise, trampling, harrassment)	-	-	-	Medium	Low	-	-	-	Low
16	Hatchery fish	-	Medium	-	-	-	-	-	-	Low
Threat Status for Targets and Project		High	Very High	Very High	High	High	High	Very High	-	Very High

OBJECTIVES

Normally a short situation analysis would be completed before creating objectives, but that was skipped in order to save time.

Developing strategies is a method for describing what success looks like for the project area in a way that is specific and measurable. The first component of this process is creating objectives. The objectives are specific, measurable, feasible, relevant, and time limited statements that detail the conservation outcomes of the plan. We first developed objectives for all the threats that were rated high and very high overall across all targets. Next we reviewed the degraded key ecological attributes from the viability analysis. A degraded rating refers to any attribute that was rated as poor or fair. The core planning team added objectives for all degraded key ecological attributes that were not already covered under the threat-based objectives. We also developed objectives for those threats that were not rated as high, but for which the Conservancy could make a difference. So, in some cases an objective may contribute to the recovery of a degraded key ecological attribute but it will first be listed under the threat-based strategies. After objectives were created, strategic actions were developed for each. These are interventions that TNC would undertake to achieve the stated objectives if they were to be implemented.

After creating objectives and strategic actions, the process is typically ranking them in the workbook by comparing the benefits, feasibility, and cost information for each of the strategic actions. Then, the core group selects best strategic actions. The Basic Version does not allow this and skips to development of action steps for the strategies that will be implemented. There is also the option of an alternative ranking method that is not in the workbook. At this point the strategic actions have not been ranked due to the original intent of this conservation plan.

South Sound Inlets Threat-Based Objectives

1. Shoreline Modification

Objective: Maintain 95% of intact native forest cover in shoreline buffer zone (200 ft or the top of the bluff) and achieve a net gain of mature forest cover in each drift cell of developed shoreline buffer zones by 2017.

Strategic action: Develop an adequate objective (is 95% sufficient).
Strategic action: Improve Critical Areas ordinance enforcement and compliance.
Strategic action: Purchase shoreline habitat for protection.
Strategic action: Restore nearshore forest connectivity to sand beaches.
Strategic action: Acquire fee or easement of shoreline buffer area directly or through partner groups.
Strategic action: Promote and support private enterprise and development projects with lower than normal impacts on local natural resources.
Strategic action: Work with partners to revise town codes to require creation of vegetated buffers on developed shoreline properties.
Strategic action: Require native plantings where ecologically appropriate along shorelines as a permit condition.
Strategic action: Work with state/county to develop and educate the public about possible new incentives, for example, shoreline buffer zone tax incentives such as tree growth and open spaces or a re-vegetation fund.

Objective: No net increase of shoreline modification (armoring/structures) by 2017.

Strategic action: Purchase shoreline habitat for protection.
Strategic action: Create a public education campaign to develop a sense of urgency about the modification of natural shorelines.
Strategic action: Research and educate private landowners on available incentives and environmentally compatible development/land use.
Strategic action: Encourage the removal of armoring from public and privately owned sites.
Strategic action: When feasible, require the use of soft shore protection measures to preserve shorelines.
Strategic action: Expand, improve, and/or provide more money to state/federal programs that support this objective.
Strategic action: HTA permit should be enforced on all landowners.

2. Polluted Stormwater Runoff

Objective: Meet or exceed new standards being developed by the Washington Department of Health for toxic loading from stormwater and nutrients by 2017.

Strategic action: Implement a comprehensive street-sweeping program to reduce the amount of pollution in water runoff.
Strategic action: Work with the city/county on current programs to enhance toxic loading conditions.

Strategic action: Support public education efforts focusing on using Best Management Practices for preventing entry of pollution into nearshore and marine waters.

3. Overharvest of Fish

Objective: Increase Nisqually Fall Chinook to 1100-1200 wild spawners.

Objective: Increase rockfish populations to greater than 25% of unfished spawning biomass by 2037.

Strategic action: Implement a soundwide moratorium on rockfish harvest.
Strategic action: Designate marine protected areas for key rockfish habitat.

Objective: Increase spawning biomass of forage fish aggregations to "moderately healthy" status according to the Washington Department of Fish and Wildlife by X.

Strategic action: Support research to locate all sites used for forage fish spawning in the South Sound.
Strategic action: Purchase/protect properties identified as important for forage fish spawning.
Strategic action: Restore forage fish spawning habitat.

4. Development in the Watershed

Objective: All new development in the South Sound watershed meets the 65/10 impervious surface rule.

Strategic action: Work with the state/county to make sure this rule is implemented and enforced.

Objective: Direct drainages to the portfolio sites and other high quality areas have 95% pervious areas.

Strategic action: Promote and support private enterprise and development projects with lower than normal impacts on local natural resources.
Strategic action: Encourage the use of pervious building and paving materials.
Strategic action: Work with the county to support programs that address this objective.
Strategic action: Work with state/county to develop and educate the public about possible new incentives, for example pervious area tax incentives or a re-vegetation fund.

5. Climate Change

Objective: Episodic geological events and climate change impacts on the nearshore habitat are understood and mitigative actions are undertaken locally.

Strategic action: Ensure a network of protected areas is designed for resiliency in the face of climate change.
Strategic action: Direct research (on the ground) efforts to monitor impacts of climate change on the South Sound.

Strategic action: Sustain sediment supply from eroding bluffs to allow beaches and dunes to keep pace with sea level rise.
Strategic action: Establish appropriately-sized buffers to effectively mitigate against the effects of sea level rise and work with regulatory agencies to implement policies that modify buffer requirements over time, as needed.
Strategic action: Identify areas that are most at risk.
Strategic action: Work with regulatory permit agencies to get them to consider climate change impacts when issuing permits.
Strategic action: Incorporate climate change and episodic geological events into planning for restoration and acquisition.

6. Disease and Pathogens

Objective: Control or limit the spread of existing diseases.
Strategic action: Work with the State Invasive Species council.

Objective: Prevent the introduction of new diseases.
Strategic action: Work with the State Invasive Species council.
Strategic action: Identify areas that are most important for protection against diseases and pathogens.

7. Eutrophication

Objective: Reduce nutrient inputs into the South Sound by X% by 2017 (Betsy will check if covered by Dept. of Health standards).
Strategic action: Establish continuous water monitoring for non-permitted industrial discharges and other significant sources as a first step in reducing pollution.
Strategic action: Upgrade existing residential and institutional septics through increased maintenance and retrofits.
Strategic action: Encourage the retrofit of wastewater treatment plants to reuse reclaimed water.
Strategic action: Support public education efforts focusing on using Best Management Practices for preventing entry of toxic contaminants into nearshore and marine waters.

8. Invasive Species

Objective: Prevent existing invasive species expansion within the South Sound.
Strategic action: Implement a monitoring program for invasive species in the South Sound.
Strategic action: Investigate potential control options and restoration efforts.
Strategic action: Work with the State Invasive Species council on rapid response.

Objective: Prevent new invasive species establishment in the South Sound.

Strategic action: Implement a monitoring program for species diversity in nearshore sand/gravel communities.
Strategic action: Enhance ballast water treatment or at-sea exchange - voluntary and regulatory.
Strategic action: Support research to predict the invasion potential of exotic species currently present in the Pacific Northwest, but not established in the South Sound.
Strategic action: Identify habitats or conditions most vulnerable to plant invasion in priority and high quality habitats.
Strategic action: Work with the State Invasive Species council.

9. Hydrologic Alternations

Objective: Achieve 10% increase of accessible freshwater habitat and 50% increase of estuarine habitat by 2017.
Strategic action: Engage X partners to develop projects for removal of non-essential dams on South Sound tributaries.
Strategic action: Restore estuaries by removing levies and dikes.

Objective: Return in-stream sediment quality, quantity and transport to natural levels.

10. Persistent Organic Pollutants

Objective: Reduce persistent organic pollutants in marine life by 10% by 2037.
Strategic action: Support public education efforts focusing on using Best Management Practices for preventing entry of toxic contaminants into nearshore and marine waters.

Viability-Based Objectives

1. Marine Birds

Objective: Breeding pairs of pigion guillemot in the South Sound increase 25% over 2007 levels.
Strategic action: Protect and restore key nesting habitat.

Objective: Forage for marine birds, including accessible shellfish beds, submerged aquatic vegetation, and forage fish, are sufficient to support the marine bird community.
Strategic action: Demonstrate feeding and nocturnal aggregation locations and foraging needs to key stakeholders and regulators.
Strategic action: Protect key marine bird foraging areas along the shoreline.
Strategic action: Explore opportunities for more ecologically sensitive aquaculture practices with NRCS.

2. Shoreline Forest Communities

Objective: Large steams and functional riparian forests supply sufficient large woody debris to marine environment.

Strategic action: Maintain or improve existing regulations.
Strategic action: Obtain land through direct acquisition or easement.
Strategic action: Encourage land-owners to enroll in country-based tax benefit programs.
Strategic action: Engage in partnerships to restore riparian vegetation.

Objective: Mature forest covers X% of shorelines by X.

Strategic action: Identify the forests with the potential for the largest trees and develop incentives to maintain those forests.

3. Salmonids

Objective: Restore X% of X# of stream mouths by 2017.

Strategic action: Map the distribution of small stream mouths and monitor their condition over time.
Strategic action: Carry out surveys of stream mouth condition in the South Sound (use Anchor Environmental Assessment or PSNERP Change Analysis) and juvenile salmon use.
Strategic action: Develop and implement restoration projects for key small stream mouths.

Objective: Protect the connectivity of tributaries to nearshore areas.

Strategic action: Collaborate with partners to replace fish ladders with nature-like fishways wherever possible.
Strategic action: Remove barriers to fish passage.

4. Nearshore Sand/Gravel Communities

Objective: Ensure the natural sand delivery mechanism is functioning in drift cells where forage fish are known to spawn.

Strategic action: Protect feeder bluffs.
Strategic action: Restore sediment transport and delivery by removing structures or nourishing beaches.
Strategic action: Remove structures from streams that modify sediment supply and transport.

5. Olympia Oysters

Objective: X proportion of historic source populations of native oysters (larval export areas) present in the South Puget Sound by 2017.

Strategic action: Protect existing source populations in South Puget Sound

Strategic action: Increase abundance and density of oysters within or adjacent to existing source populations of native oysters where they historically existed.

Objective: X amount of suitable hard substrate is available for oyster recruitment in suitable locations throughout the historic range of native oysters.

Strategic action: Introduce hard substrate into suitable habitat surrounding existing but small populations of native oysters and in suitable locations where significant amounts of oyster larvae are likely present in the water column.

Strategic action: Conduct restoration experiments to test the efficacy of alternative cultch material (biodegradable concrete coated material)

Objective: Sites with multiple age-classes of oysters are distributed throughout the historic range of native oysters.

Strategic action: Enhance habitat surrounding existing but small populations of native oysters.

Strategic action: Reduce threats to natural recruitment and survival in priority areas.

6. Mudflat/Tidal Marsh Ecosystems

Objective: X proportion of historic mudflat habitats is present in South Sound.

Strategic action: Restore X amount of mudflat habitat.

Strategic action: Protect X amount of mudflat habitat.

Objective: X proportion of historic tidal marsh habitat types is present in South Sound.

Strategic action: Restore X amount of X type of habitat.

Strategic action: Protect X amount of X type of habitat.

IMPLEMENTATION/NEXT STEPS

In typical conservation plans, the development of action steps follows the identification of highly-ranked strategic actions. The core planning team then develops a workplan to implement these strategic actions. In this case, we are not currently developing action steps due to the original purpose of the plan, which was to set priorities and determine future investments in the South Sound. Once we determine our level of conservation involvement in the South Sound nearshore environment, we may return to this plan and further outline the action steps for implementation. Currently, internal and external reviewers are providing feedback on the entire plan (Refer to Page 2). Once these comments are integrated into the plan, the core team will detail next steps. We will use the Rapid CAP as a foundation for future plans concerning the South Sound Inlets. In addition, we will compare ongoing activities in the area to strategies in the plan and use this comparison to inform and potentially redirect these conservation actions. As the marine program at the Conservancy continues to grow over the next five to ten years, investment will increase in new regions of coastal Washington. This plan clearly represents the conservation value of the South Sound nearshore habitats, the threats to this area, and the most important strategies for future engagement.

Reviewers:

Internal

Randy Hagenstein, Director of Conservation, TNC AK
Jay Odell, Marine Ecologist, TNC
Kick Vander, Coastal and Marine Conservation Director, OR
Ken Popper, Conservation Planning Associate, OR

External

Doug Meyers, Puget Sound Action Team
Curtis Tanner, US Fish and Wildlife Service

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APPENDICES

A. Workshop Agenda

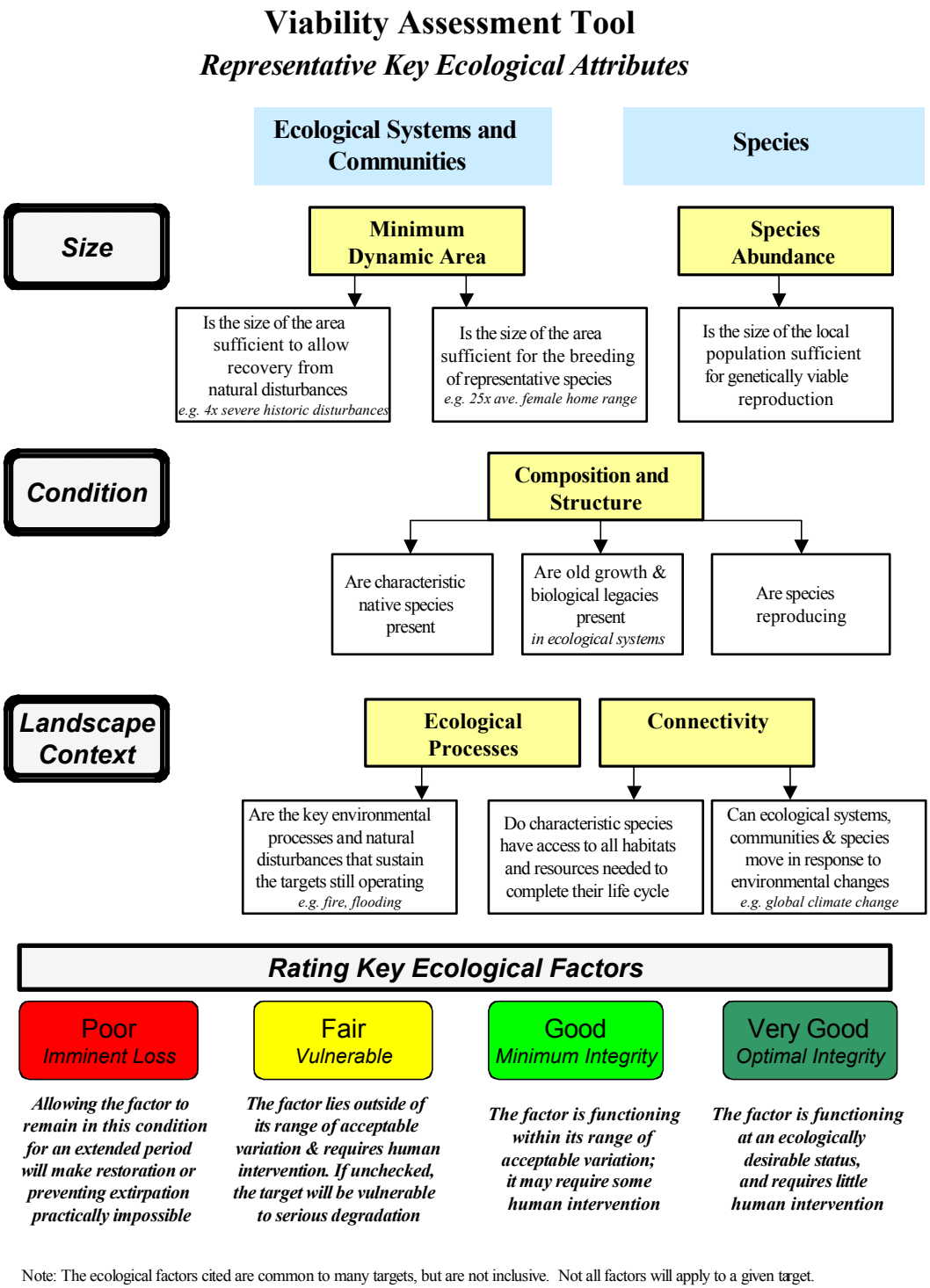
South Sound Inlets Rapid CAP Workshop

July 10 and July 12, 2007

Day 1:	Targets & Viability, Start Threat Analysis
9:00-10:00	Introduction - **Welcome Address from Jacques** - **Review Agenda, General Presentation on CAP, Proposed Outcomes, & Ground Rules/Logistics of day (Kara)**
10:00-11:00	Focal conservation targets & nested targets - ***Brief overview of targets and selection criteria (Leah)*** - ***Group Discussion: Review and agree on focal targets and nested targets***
11:00-12:00	Break Out Groups (see list): For each focal target develop up to 5 key ecological attributes with indicators and initial viability rankings - ***Give preliminary current rankings for each of these factors, based on your collective expert opinion (Very Good / Good / Fair / Poor)*****: See Viability Assessment Tool Handout for guidance and folders for maps etc.**
12:00-1:00	Lunch
1:00-3:00	Break Out Groups Continued (key ecological attributes, indicators and initial viability rankings
3:00-3:15	Break (coffee and treats)
3:15-5:00	Threats: Brief presentation on threat process. Start the identification of threats (break-out groups) for each of the focal targets.

Day 2:	Threats & Strategies
9:00-9:30	Revisit Day 1 Outcomes; Quick review of threat ranking protocol (presentation)
9:30-11:30	Complete identification and ranking of threats for focal targets (Rank collectively as the larger group)
11:30-12:30	Lunch
12:30-3:00	Conservation strategies –Brief presentation on strategy process- Start with setting the objectives - ***Develop key objectives to abate critical threats and/or restore the viability of a target (focus on threats)*** - ***Brainstorm potential strategic actions to achieve the objective (ONLY AFTER OBJECTIVES ARE DETERMINED)***
3:00-3:15	Break (coffee and treats)
3:15-5:00	Continue setting the objectives

B. Viability Analysis Tool



Note: The ecological factors cited are common to many targets, but are not inclusive. Not all factors will apply to a given target.

C. Threat Ranking Definitions

Severity of Damage -- the level of damage to the conservation target that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

Very High: Likely to destroy or eliminate the conservation target over some portion of the target's occurrence at the site.

High: Likely to seriously degrade the conservation target over some portion of the target's occurrence at the site.

Medium: Likely to moderately degrade the conservation target over some portion of the target's occurrence at the site.

Low: Likely to only slightly impair the conservation target over some portion of the target's occurrence at the site.

Scope of Damage -- the geographic scope of impact on the conservation target at the site that can reasonably be expected within 10 years under current circumstances (i.e., given the continuation of the existing situation).

Very High: Likely to be very widespread or pervasive in its scope, and affect the conservation target throughout the target's occurrences at the site.

High: Likely to be widespread in its scope, and affect the conservation target at many of its locations at the site.

Medium: Likely to be localized in its scope, and affect the conservation target at some of the target's locations at the site.

Low: Likely to be very localized in its scope, and affect the conservation target at a limited portion of the target's location at the site.

Irreversibility -- reversibility of the stress caused by the Source of Stress (or reversibility of the threat itself if using the alternative threat ranking methodology).

Very High: Not reversible (e.g., wetlands converted to a shopping center).

High: Reversible, but not practically affordable (e.g., wetland converted to agriculture).

Medium: Reversible with a reasonable commitment of resources (e.g., ditching and draining of wetland).

Low: Easily reversible at relatively low cost (e.g., off-road vehicles trespassing in wetland).

EVALUATION

Dealing with all of the various perspectives and interests of the representatives of the institutional and human ecologies of the South Sound Inlets was extremely difficult. TNC worked hard to make the workshops a professional and educational experience, but mistakes were made and lessons were learned. Many of the issues that came up could have been avoided, so an evaluation of the CAP workshops is necessary to prevent the same mistakes from happening again.

Everyone contacted and asked to share his or her knowledge with TNC to aide in the development of the CAP was upset about the short time frame. They were contacted about a month before the workshops were held, but would have preferred a longer time to get adjusted to TNC's involvement in "their" South Sound region. Also, the short time frame seemed disrespectful to many of the contacts. The Tribes especially were offended by the short-term notice and also by the status of the person contacting them. As self-governing entities, they should have been contacted by the highest-level TNC professional on the CAP team, rather than by an intern. Part of the reason people were upset was because they thought that TNC's plan was going to use their local information to take over management of the South Sound Inlets despite any efforts that were already in effect. This concern was widespread and significant enough that a meeting was held in the South Sound by most of the contacts to decide how to respond to TNC's request for their attendance at the workshops.

Because this was a rapid plan, the workshops were intended to be small and quick. However, once TNC contacted the people who were deemed best suited to attend the workshops, all of the people who were not contacted were offended. Sometimes someone who was invited would refuse to come unless others in the same field were also included. This was such a big issue to the environmental community in the South Sound that TNC had to hold a separate meeting for all of the salmon experts to share their extensive knowledge on salmon viability and threats. This should have been avoided because it gave the salmonid focal target a false sense of importance. The viability and threats for salmonids were more carefully thought about and had more time to be completed.

Once the workshops began, issues still came up with facilitation. It was difficult to get the local experts to talk generally about any topic and there wasn't enough time available to gather detailed information on any one target or species. Because the locals knew so much about their specific fields of study, they wanted to share that information and have it be used "correctly" in the CAP. The facilitators struggled to convince these people that less specific information would actually be more beneficial, since it was a more general comprehensive plan. They knew that there is so much uncertainty in their data that they sometimes would refuse to give their best opinion, which is necessary. Also, because the local experts had worked with each other in the past, they had preconceived notions about which people they would agree or disagree with. To prevent this from devaluing the discussions, the facilitators endeavored to expose each person's individual opinion.

An issue that came up when TNC was working through this process was keeping it objective. As House (1976) noted, the planning process is often the arena where

professional opinions collide with personal or local desires. Many of these local experts grew up in the project area and had their own priorities and emotional attachments to various species and communities, which is difficult to deal with in an objective plan. More importantly, the core planning team seemed to lose their objectivity very early in the planning process. The stated purpose of the plan at the beginning was basically to define TNC's priorities in the South Sound if they were to get involved there. However, the planning team chose which threats to make objectives for and has not adhered to the normal ranking process for strategic actions. Flexibility in the planning process is a strength of a private organization because not all guidelines make sense in every situation. However, not sticking to the CAP practices means that the plans are no longer considered objective.

Some of the local experts and one of the people on the core planning team worried from the beginning that once the Rapid CAP was completed, it would be used to implement strategic actions. This was despite the fact that the team stated that if TNC were to get involved in the area, they would complete a regular CAP so the information would be more detailed and have relevant data to back it up. It seems now that the team has decided to gather more information about those strategies that plan to be implemented rather than complete an entire CAP. The purpose of the plan loses meaning when the team goes against agreements they have made at the beginning. The problem here was that the purpose was not defined sufficiently at the beginning and kept being modified as the plan developed. The purpose should drive the design of the process including who should be on the planning team and whether or not a Rapid CAP is the right approach. Unfortunately, if the purpose changes during the process, the team members, design, and complexity of the plan do not.

There are many aspects of the CAP process that are impressive. All CAP plans are put into an online database that all TNC professionals can access. This can be helpful when researching a specific target or threat or when finding out which threats and strategies have been chosen for a similar area. Each threat in the plan has what is called a common taxonomy threat name in addition to the name that the planning team gives the threat. The common taxonomy name is specifically worded to be the same across all CAPs so that comparison among them is facilitated. Also, concentrating on certain focal targets that represent the entire project area is a good way to save time without losing the integrity of the plan. This is something that has to be done in a comprehensive plan because everything must be included and yet there is not enough time to use every detail.

The case study itself had admirable elements. According to TNC's Guidance for a Rapid CAP document, a well-constructed product must include these components: a core planning team, critical review, draft targets ahead of time, maps, and a commitment to an iterative approach (TNC, 2006). This is exactly what the Rapid CAP for the nearshore habitats of the South Sound Inlets of Puget Sound committed to. Also, despite the mistakes made, the focal targets were well chosen to capture the connectedness and interrelatedness of the various ecosystems. For example, shoreline forests are a terrestrial community that provides marine services and the salmonids target connects terrestrial, freshwater, estuarine, and marine habitats. The core team for the case study was also very good at incorporating people's comments and suggestions into the plan. They didn't let uncertainty restrict their progress, which often happens in the search for more research. At some point, action has to take place using the best knowledge available.

RECOMMENDATIONS

In the future, when a comprehensive plan such as TNC's Rapid CAP is created and there is a need to involve local experts, there are some general lessons learned that can be applied. Plenty of time should be given between the notifications of locals who would become involved and the actual involvement. People need time to adjust to a new idea, especially when it involves the possibility of new management entering a small area. To aide in this adjustment, all intentions should be made clear from the beginning including the purpose and use of the information obtained, the plan itself, and the details of implementation. North Carolina's Coastal Habitat Protection Plan (CHPP) coordinators first handed out education materials to the pubic before involving them to encourage understanding of the purpose and goals of the plan (Kelly, 2004).

When each stage of the plan is completed, it would be prudent to send the products to anyone who provided information that was used. This way, the locals feel included and have the opportunity to evaluate their own contributions for accuracy. The Albemarle-Pamlico National Estuary Program engaged the local public by creating two regional Citizen Advisory Committees to serve as liaisons to local agencies and interested parties regarding environmental and natural resources management concerns relevant to the implementation of their Comprehensive Conservation and Management Plan (CCMP) (APNEP, 2008, Easley, 2005, Koontz, 2004).

There were aspects of the CAP process that could have been improved. For example, contrary to TNC CAP recommendations, the team never actually went to the project area for a site-visit. Also, the beginning stages of the planning process should have included a review of the current conservation activities in the area including the applicable legislation such as the Endangered Species Act and the Shoreline Management Act. The US Fish and Wildlife Service (USFWS) requires this as part of the preplanning stage of a National Wildlife Refuge (NWR) Comprehensive Conservation Plan (CCP). The planners must obtain information from other sources that may relate to the project area and conduct a literature review (USFWS, 2000). In addition, NC's CHPP was developed to describe the current rules concerning each habitat before identifying management needs (NCDMF, 2008).

This lack of preparation became an issue when dealing with the local experts. Some of them were already involved in conservation efforts for the South Sound and felt that TNC was not acknowledging that. With more information ahead of time, the planning team could have spoken more knowledgeably about the projects already in motion in the area and alleviate concerns that the CAP would interfere with them. Contacting groups separately was part of the reason people got upset about who was invited and who was excluded. However, sometimes there were partnerships or coalitions that could have been contacted and asked to send one representative. With more advance preparation, this may have been more of an option. For example, to develop North Carolina's CHPP, each partner organization chose its own representatives for the committees involved (NCDMF, 2008).

According to the Rapid CAP guidance tool, it should not be used to resolve dissent. A standard CAP is better at facilitating a social process among dissenting stakeholders. In these cases, more time is usually required to establish relationships and build sufficient trust between different people and interests than is available in a two-day

workshop. If the core planning team had done more research ahead of time on the political and social climate of the South Sound Inlets and the local professionals, it may have been clear that they would be difficult to deal with. In that case, it would have been more prudent to commit to a full-blown CAP, although time was an issue.

The Rapid CAP never got to the point of strategic action ranking because nothing is currently being implemented. Without implementation plans, there is no need to go through a ranking process with information that could change by the time the implementation is going to happen. I strongly recommend that the strategies be ranked using an objective process, rather than just choosing those that TNC wants to implement. This would almost defeat the purpose of using the planning process to come up with the most ecologically necessary and most efficient strategies. The National Environmental Policy Act requires an equal and full analysis of all alternatives considered for implementation, which comes to fruition during the development of a CCP for a NWR. The CCP planners must give equal effort to development of each alternative including objectives and strategies so that they can then be compared realistically and objectively (USFWS, 2000). The NC CHPP uses public comments to narrow down and prioritize recommended management actions for implementation (Kelly, 2004).

Based on my evaluation, there is one thing the planners could have done to most improve their Rapid CAP. They should have gone over the purpose of the plan and what it takes to achieve that purpose at every meeting. If they decided to change the purpose at any point, they should have documented that decision and its justification. The USFWS requires a review of the vision and goals of CCPs after gathering information, to determine the need for revision (USFWS, 2000). This would make the most significant difference in the quality of the plan. If this had been the case, then they would conduct a regular CAP if TNC becomes interested in the area, because that was part of the goal in the beginning. My suggestion is not to just extend the Rapid plan strategic actions because they are based on too little information and have been compromised by a loss of objectivity and a changing purpose. At the very least, they should develop a list of information gaps and parts of the plan that need to be addressed in greater detail before anything is implemented.

CONCLUSION

It is difficult to develop a comprehensive conservation plan that includes all relevant stakeholders and their perspectives and interests. Yet, this was still not only attempted, but also planned with time constraints by TNC. An organization like TNC has the opportunity to remain flexible in planning because laws or regulations do not restrain it. However, it is difficult to be flexible without losing objectivity and therefore the justification of management actions. The Rapid CAP for the nearshore marine habitats of the South Sound Inlets of Puget Sound was an adapted planning process for a special situation where TNC did not already have jurisdiction. For this specific case, flexibility was more important than usual, so in that regard their approach was a success. The loss of objectivity, however, could have been lessened with more advanced preparation. In the future, hopefully TNC will devote more time and research even to a Rapid plan.

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