



Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

Technical Memorandum

November 2009

Authors of This Memorandum

This technical memorandum was prepared by members of the Puget Sound Partnership's Open Standards project team, including:

Martha Neuman, Puget Sound Partnership, Team Lead

David St. John, Puget Sound Partnership, Team Lead

Caroline Stem, Foundations of Success, Lead Author

Jennifer Knauer, Jones and Jones

Nick Salafsky, Foundations of Success

November 6, 2009

Dear Reviewer:

This is one of a series of technical memoranda released by the Partnership in conjunction with the 2009 State of the Sound Reporting.¹ These technical memoranda present the current products of work by staff from the Partnership and additional entities to implement Action Agenda activities addressing the development of the Partnership's performance management system (Action Agenda Chapter 3, Section E.1).

The audience for these memoranda includes the leadership of the Partnership; implementers of Action Agenda actions; elected officials, decision-makers and funders tracking progress in implementing the Action Agenda; and members of the scientific community whose work addresses the Puget Sound ecosystem or elements of it.

Outcomes we hope to achieve with these memoranda include:

- Broad ownership of the formative steps toward accountability for and adaptive management of the Action Agenda
- Maintained or increased levels of advocacy for the performance management system as a tool for helping ensure our investments are strategic and effective
- Awareness of technical, policy, and programmatic assumptions that are driving the Action Agenda, and the needs and opportunities to address inaccurate assumptions
- Early recognition of what will be used as performance measures, status indicators, benchmarks and targets to measure progress toward 2020 goals
- An initial sense of the implications of this work for key 2010 activities including budget development for the 2011-2013 biennium and consideration of the need to revise strategies in the 2008 Action Agenda

These technical memoranda represent an important advance toward having the performance management system assembled and informing strategic decisions by mid-2010. The Partnership is using the technical memorandum format to solicit feedback on the initial steps toward assembling the performance management system for the Action Agenda. The three memoranda focus on the application of the framework provided by the Open Standards for the Practice of Conservation. The parts of the framework addressed in these memoranda include: identification and rating of threats

¹ This 2009 report meets the statutory reporting requirements for the "State of the Sound Report."

to the 2020 goals; identification of ecosystem components and their indicators; and development of results chains linking strategies and actions to threats and ecosystem components.

Each memorandum includes a set of specific guidance questions that will serve as a guide for focusing the review. While reviewer feedback on the entirety of the content is welcome, feedback that addresses the guidance questions directly will be the most useful and relevant in informing future decisions driving the form and function of the performance management system. The feedback the Partnership receives will be used to both refine the material presented and help us set a prioritized work plan that will focus our work on building the performance management system.

To facilitate timely incorporation of review feedback into the next steps of the work, **comments are due to the Partnership by December 4, 2009**. Comments can be submitted to the Partnership at actionagenda@psp.wa.gov. Comments can also be sent through the regular mail to the Partnership at the following address:

Martha Neuman
Puget Sound Partnership
PO Box 40900
Olympia, WA 98504

Thank you for your interest in advancing the development of the performance management system for the Action Agenda. We look forward to working with you in the coming months to build the foundation for a robust and functional system that will advance our shared goal of a clean and healthy Puget Sound ecosystem by 2020.

Sincerely,



David D. Dicks
Executive Director

Guidance Questions for Reviewing this Memorandum

1. Do the individual results chains and the collective suite of results chains accurately portray the strategies and actions in the Action Agenda that contribute toward addressing the threats identified?
2. Are there performance measures currently in use in the region for the different results chains topics that should be added as performance measures (see tables in the individual sections for each results chain)?
3. Are the threat reduction objective measures/benchmarks/targets expressed in the individual chains sufficiently supportive of progress toward the 2020 goals?
4. What are the significant areas of uncertainty in the chains between the strategies and actions shown and the degree to which the threats will be addressed?
5. Do the suggested next steps presented ensure that the Partnership has a set of results chains that provide the best possible starting point for accountability and adaptation of strategies and actions?

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action
Agenda

Table of Contents

1. Introduction	2
2. Results Chains Theory and Application.....	3
2.1 Theory	3
2.2 Using Results Chains to Define Objectives and Performance Measures	4
3. Real-World Application.....	6
4. Rationale and Process	7
4.1 Organizing Near-Term Actions into Thematic Results Chain Groups.....	7
4.2 Developing Results Chains, Objectives, and Performance Measures.....	8
4.3 Review of Process and Interim Products.....	10
5. Status of Results Chains	12
5.1 Results Chain Development	12
5.2 Identification of Threat-Reduction Objectives.....	13
5.3 Common Themes from Results Chain Development	13
5.4 Overall Status of Results Chains, Objectives and Performance Measures	14
6. Presentation of Current Results Chains.....	17
7. Results Chain 1: Land Protection	17
7.1 RC 1a Land Protection: Acquisition & Protection of Lands Important for Structures, Processes, & Functions	17
7.2 RC 1b Land Protection: Regulatory	17
7.3 Objectives and Performance Measures.....	18
7.4 Related Results Chains.....	19
7.5 Issues to Address for Future Work	19
8. Results Chain 2: Flow Protection.....	29
8.1 RC2a Flow Protection: Demand.....	29
8.2 RC2b Flow Protection: Supply.....	29
8.3 RC2c Flow Protection: Regulatory, Monitoring, & Enforcement	29

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action
Agenda

8.4 Objectives and Performance Measures 30

8.5 Related Results Chains 30

8.6 Issues to Address for Future Work..... 30

9. Results Chain 3: Invasive Species37

9.1 RC3 Invasives (Terrestrial & Aquatic/Marine) – General & Ballast Water37

9.2 Objectives and Performance Measures37

9.3 Related Results Chains 38

9.4 Issues to Address for Future Work..... 38

10. Results Chain 4: River and Floodplain Restoration 42

10.1 RC4 River & Floodplain Restoration & Enhancement 42

10.2 Objectives and Performance Measures..... 42

10.3 Related Results Chains.....43

10.4 Issues to Address for Future Work43

11. Results Chain 5: Nearshore Restoration..... 48

11.1 RC5 Nearshore Restoration 48

11.2 Objectives and Performance Measures 48

11.3 Related Results Chains 49

11.4 Issues to Address for Future Work..... 49

12. Results Chain 6: Stormwater54

12.1 RC 6a Reducing Stormwater Loading and Runoff Through NPDES Implementation54

12.2 RC 6b Stormwater Monitoring and Adaptive Management.....54

12.3 RC 6c Retrofitting Stormwater Systems54

12.4 RC 6d Low Impact Development (LID)55

12.5 RC 6e. Reducing Agricultural and Forestry Runoff and Loading.....55

12.6 Objectives and Performance Measures.....55

12.7 Related Results Chains56

12.8 Issues to Address for Future Work56

13. Results Chain 7: Wastewater65

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action
Agenda

13.1 RC 7a Wastewater Treatment (Industrial and Municipal)65

13.2 RC 7b Wastewater Combined Sewer Overflows (CSOs)65

13.3 RC 7c On-Site Sewage Treatment65

13.4 Objectives and Performance Measures 66

13.5 Related Results Chains 66

13.6 Issues to Address for Future Work 66

14. Next Steps and Recommendations.....73

References75

Appendix A. Summary of Results Chains Strategies76

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action
Agenda

1. Introduction

The 2008 Action Agenda identified a prioritized list of 80 Near-Term Actions (NTAs), comprised of strategies and activities needed to advance ecosystem recovery objectives and goals for Puget Sound (see Table 4.1 in the 2008 Action Agenda). These priority NTAs did not include accompanying logic models or well-defined measurable objectives and outcomes. As a consequence, the Puget Sound Partnership (the Partnership) needed a framework for defining and measuring the effectiveness of these Near-term Actions. To address this situation, the Partnership decided in 2009 to apply the Open Standards for the Practice of Conservation to the 2008 Action Agenda (Conservation Measures Partnership, 2007).

This technical memo summarizes the work completed in 2009 to develop seven thematic results chains and associated sets of threat reduction objectives and performance measures. The intent of this exercise was to incorporate the majority of the 2008 Action Agenda NTAs within the seven sets of results chains, thereby constructing a performance management framework to track Action Agenda implementation effectiveness and progress made towards 2020 ecosystem recovery goals.

2. Results Chains Theory and Application

2.1 Theory

A results chain is a tool that shows how a project team believes a particular action taken will lead to some desired result. More specifically, a results chain depicts assumptions about how project or program strategies will contribute to reducing important threats and lead to the conservation of priority ecological components. In essence, results chains are diagrams that map a series of causal statements that link short-, medium-, and long-term results in an “if...then” fashion. (Foundations of Success, 2007; 2008). As shown in Figure 1, there are three basic elements of a results chain: a strategy, expected outcomes and desired impact. These elements, explicitly laid out, provide the framework for a project team to define objectives and goals that describe desired future outcomes and impacts, respectively.²

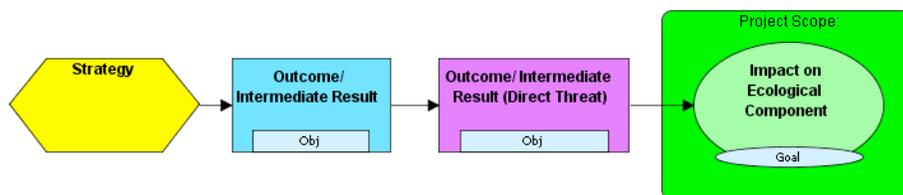


Figure 1. Basic Elements of a Results Chain

Results chains are often derived from conceptual models. They differ in that conceptual models show the state of the world before a team implements a project, while a results chain shows the state of the world resulting from this action. Results chains are similar to the logic models used by many organizations, but results chains have the added benefit of showing more detail, as needed, and the direct relationship between one result and another.

Results chains help project teams accomplish three things:

1. **Discuss and refine theories of change** – Project teams rarely formally state assumptions about how they believe their strategies will achieve desired outcomes and impacts. Usually, they have many implicit assumptions about how their strategies will contribute to achieving conservation – these unstated assumptions represent their “theory of change.” Even so, it is common for members from the same team to hold

² Definitions: Strategies = the actions or interventions that a project implements; Outcome = the desired future state of a threat or opportunity factor. An objective is a formal statement of the desired outcome. Impact = the desired future state of a conservation target. A goal is a formal statement of the desired impact. Result = a generic term used to describe the desired future state of a target or factor; includes impacts, outcomes, and outputs.

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

different assumptions that they have not communicated. When the assumptions are not explicit, the project team cannot come to an agreement on their theory of change or test it and learn over time whether it is valid.

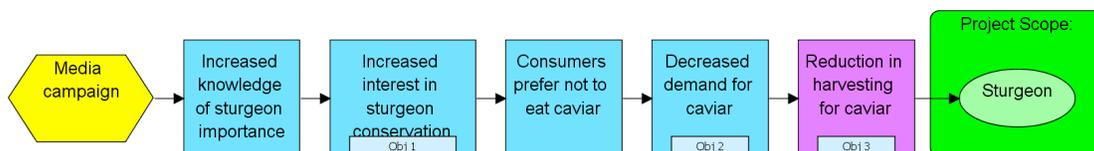
2. **Measure effectiveness** – Once a project team has come to agreement on their theory of change, they can use their results chain to define project objectives and indicators needed to measure effectiveness. The following section describes this process in more detail.
3. **Develop a common framework for cross-site learning** – Finally, results chains can help practitioners learn across sites. Project teams working in different sites are often implementing the same strategies and have common assumptions about how these strategies will contribute to conservation. Results chains can provide a framework for defining and testing these common assumptions and learning about the conditions under which a strategy is or is not effective, and why.

2.2 Using Results Chains to Define Objectives and Performance Measures

Each result box in a chain is a potential place to set an objective and its associated performance measure. In reality, however, monitoring resources are limited, so teams usually choose a limited number of key results that could be key leverage points or areas where they need to see a change for the rest of the chain to produce the desired results. By developing objectives for these key results, teams limit the universe of potential objectives and associated measures, and they have a clear framework for measuring performance.

The direct-threat reduction results (purple box in Figure 1) are particularly important and, therefore, should always have objectives attached to them. Teams need to be able to show if they are making progress in reducing the direct threats to the system's ecological components. If a team cannot successfully reduce its direct threats, it will probably have minimal success in achieving conservation.

Figure 2 provides an example of a results chain for a media campaign designed to reduce harvesting of sturgeon for caviar. In this example, the team identified three key results for establishing objectives (and associated performance measures). The Open Standards stipulate that objectives should be results-oriented, time-limited, measurable, specific and practical. The team also set benchmarks that would allow them to determine if they were making progress toward their stated objectives.



Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

Figure 2. Example Results Chain for a Media Campaign Strategy to Reduce Sturgeon Harvesting

Sample objectives, benchmarks and performance measures for the media campaign chain include:

- **Objective 1.** By 2012, at least 70% of the target population in eight major European cities is supportive of existing laws to conserve Russian sturgeon.
Milestone: By 2010, 30% of the target population is supportive.
Performance Measure: % of the target population in eight major European cities that are supportive of existing laws to conserve Russian sturgeon.
- **Objective 2.** By 2014, the number of kilos of Russian caviar sold annually in these eight major European cities has decreased at least 30%.
Milestone: By 2011, kilos sold decreased by 5%; by 2013, kilos sold decreased by 20%.
Performance Measure: # of kilos of Russian caviar sold annually in these eight major European cities.
- **Objective 3.** By 2016, the average monthly sturgeon harvest in the Blue River watershed has decreased at least 30%.
Milestone: By 2013, monthly harvest has decreased by 10%; by 2015, monthly harvest has decreased by 25%.
Performance Measure: # of sturgeon harvested monthly in the Blue River watershed.

When teams develop results chains and identify objectives that meet the criteria specified by the Open Standards, they learn to be very clear about what they intend to accomplish, and, as such, they provide the foundation for identifying the performance measures associated with each objective.

3. Real-World Application

Disciplines such as education, social services and public health have been using “theory of change” tools like results chains for decades. More recently, many conservation organizations around the world have discovered and started using results chains to lay out the assumptions behind their strategies and develop objectives and effectiveness measures. Examples of teams and organizations using results chains include: The Nature Conservancy (e.g., Lake Ontario, Lake Huron, and Meso-American ecoregions, Global Fire Team); the World Wildlife Fund (e.g., Southwest Amazon and Gulf of California ecoregions); National Audubon Society; Environment Canada; Michigan Department of Natural Resources; Humboldt Bay Ecosystem Program and San Luis Obispo Science and Ecosystem Alliance (SLOSEA).

4. Rationale and Process

The Partnership is using the results chain tool over the short term to organize Action Agenda items and lay out the logic underlying the actions that appear in it. In particular, the Partnership focused on Near-Term Actions (NTAs) for Priorities A-C (as laid out in Table 4.1 of the Action Agenda) – a subset of the Action Agenda that had already been prioritized and represented a more reasonable scope for what the Partnership and its partners could address in the next biennium. Customarily, a tool like results chains would be used to help shape the planning process like the one used to create the Action Agenda. The timeframe for delivering the Action Agenda, and the timing of the Partnership’s exposure to the Open Standards process, however, made that impossible. Over the longer term, the Open Standards process will help the Partnership develop and refine the Action Agenda performance management system, help ensure a focus on highly strategic actions, and support a clarity of assumptions about anticipated results that will be a basis for accountability and adaptation for the Action Agenda.

4.1 Organizing Near-Term Actions into Thematic Results Chain Groups

The first step in this process involved evaluating all prioritized NTAs within the 2008 Action Agenda (Table 4.1 of the 2008 Action Agenda) to identify logical groupings from which a small number of thematic results chains could be constructed. Given the time constraints, it was not practical to develop discrete results chains for each action. Partnership staff and the project consultants also recognized that the Action Agenda included a mix of higher-level strategies, discrete actions, and general processes and that there were many NTAs that were closely related to one another. With this in mind, staff grouped NTAs and classified them as strategies or activities, based on the somewhat loose definitions provided in the Open Standards. The Partnership made an effort to cover as many NTAs as possible within the results chains.

After reviewing the initial clusters of NTAs and comparing them to the strategic priorities and prominent threats identified in the Action Agenda, the Partnership focused the initial round of results chain development work, reported in this memo, on the following seven topically organized results chains:

1. Land Protection
2. Flow Protection
3. Invasive Species
4. River and Floodplain Restoration
5. Nearshore Restoration
6. Stormwater
7. Wastewater

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

Priorities D and E from the Action Agenda are not directly addressed in the current results chains because they address *how* the Partnership and its partners do their work rather than actual strategies to implement. The *how* is important and did emerge as a theme across all results chains.

4.2 Developing Results Chains, Objectives, and Performance Measures

Once the results chains topics were chosen, the Partnership invited small groups of practitioners with significant expertise in the different topical areas to assist in building the respective results chains. The groups ranged from three to 11 participants, though in most cases the group comprised four or five individuals (see Table 1 for a complete list and their professional association). In general, the size of the groups was ideal for this sort of intensive work. To make the most efficient use of participants' time, The Partnership staff and consultants developed a preliminary results chain as a 'straw dog' for each work group to respond to at its first meeting. These preliminary results chains were simplified, 'first cuts' at generating the chains and for the most part, the final work products from each group varied greatly from the group's early straw dog chains.

On average, the results chain work groups met four times and typically met for two- or three-hour sessions. The bulk of this time was focused on developing the results chains. Initial meetings were in person and included an introduction to the Open Standards and where results chains fit into the Partnership's process for developing the Action Agenda performance management system. Most follow-up work sessions took place remotely and were facilitated by phone and Web-Ex. Of note in this process were the substantive discussions that led to collaboratively defined results chains products; the time and energy invested by work group members fostered cohesive, productive working groups. Results chain work groups established in 2009 could prove important for future advancement of these results chains.

Table 1. Summary of Results Chains Work group Meetings and Participants

Results Chain	Participants (Affiliation) ^a	Facilitators	Total # Meetings/ Consultations
1. Land Protection	Ron Thom (Batelle); Harry Reinert (King County); Millie Judge (Lighthouse Consulting); Gino Lucchetti (King County); Doug Peters (CTED); Chris Townsend (PSP); Stephen Stanley (Ecology)	Jennifer Knauer (Jones & Jones) Caroline Stem (FOS)	5 meetings + e-mail consultation
2. Flow Protection	Lisa Dally Wilson (Lisa Dally Wilson Consulting); Brian Walsh (Ecology); Steve Hirshey (King County); David	Jennifer Knauer (Jones & Jones) Caroline Stem (FOS)	3 meetings + e-mail consultation

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

Results Chain	Participants (Affiliation) ^a	Facilitators	Total # Meetings/ Consultations
	St. John (PSP); Llyn Doremus (Citizen)		
3. Invasive Species	Kevin Anderson (PSP); Wendy Brown (WA Invasive Species Council); Allen Pleus (Dept. Fish and Wildlife)	Jennifer Knauer (Jones & Jones) Marcia Brown (FOS)	3 meetings
4. River Restoration	Jason Mulvihill-Kuntz (PSP); Lorin Reinelt (Pierce County); Andy Haas (Snohomish County); Rebecca Ponzio (PSP)	Jennifer Knauer (Jones & Jones) Caroline Stem (FOS)	3 meetings + e-mail consultation
5. Nearshore Restoration	Curtis Tanner; (Fish and Wildlife Service); Jim Brennan (SeaGrant); Melissa Holman (TNC); Chris Townsend (PSP); Betsy Lyons (TNC); Rebecca Ponzio (PSP)	Jennifer Knauer (Jones & Jones) Caroline Stem & Marcia Brown (FOS)	3 meetings + e-mail consultation
6. Stormwater	Bruce Wulkan (PSP); Dale Norton; Kit Paulsen (City of Bellevue); Karen Dinicola (Ecology); Joan Lee (Parametrix); Bill Moore (Ecology); Bruce Wishart (People for Puget Sound); Jim Simmonds (King County); Krista Mendelman (EPA)	Jennifer Knauer (Jones & Jones) Marcia Brown & Caroline Stem (FOS)	5 meetings
7. Wastewater	Rob Duff (Ecology); Duane Fagergren (PSP); Stuart Glasoe (Dept. of Health); Michael Rylko (EPA); Angela Grout (EPA); Heather Trim (People for Puget Sound); Bruce Wulkan (PSP); Karen Burgess (Ecology); Dave White (King County); Lisa Chang (EPA); Bruce Wishart (People for Puget Sound)	Jennifer Knauer (Jones & Jones) Vinaya Swaminathan & Caroline Stem(FOS)	7 meetings + e-mail consultation

Details about meetings held for each results chain available from: <http://sites.google.com/site/psprcworkinggroups/home>

^a Not all participants were present in every meeting

Once the work groups generated results chains with clear, logical linkages between strategies and threats, the focus turned to developing direct-threat reduction objectives and performance measures.

An important tool to share information with the work groups and provide a record of products and process was a public Google site (<http://sites.google.com/site/psprcworkinggroups/home>). The site was organized by chain and provided introductory and background information on the

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

process, as well as interim products for review and comment. Partnership staff and consultants encouraged the work groups to provide feedback between meetings via online spreadsheets and working documents, e-mail and phone. The Google site served as a great repository for the information and made the process and products transparent to all involved.

4.3 Review of Process and Interim Products

The input and guidance from leadership within the Partnership has been critical to the advancement of this work. On several occasions Partnership staff and consultants undertaking the development of results chains met with leadership to brief them on the process, get their support and/or suggestions for the process, and request feedback on interim products. These regular meetings helped to ensure agreement on the general process and products and identify course corrections that would result in effective products.

The following table summarizes several key meetings where leadership feedback and guidance was provided.

Table 2. Summary of Meetings with Partnership Leadership

Meeting Date	Audience	Purpose (for Results Chains work)	Input
7/17/2009	Leadership Council	Introduce the concept of results chains and provide an example of a potential results chain for 2008 Action Agenda items	General buy-in and support of the overall process
7/29 – 7/30/2009	Ecosystem Coordination Board	Seek guidance for our choice of results chains to develop	Tighten results chains' focus on "bold" actions; general support for process
8/21/2009	Performance Management Advisory Group	Provide an example of actual chain (ballast water) Seek guidance for our choice of results chains to develop Seek guidance on useful level of detail	Need to make chains even simpler – show only strategies/activities, threat-reduction results, and ecosystem and human components
9/15/2009	Performance Management Advisory Group	Provide three examples of developed chains (flow protection, wastewater, nearshore restoration) Provide examples of initial threat reduction objectives Seek guidance on useful level of	The very simplified chains are the right level of detail and possibly still too complex Set some "stakes in the ground" for threat-reduction objectives

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action
Agenda

Meeting Date	Audience	Purpose (for Results Chains work)	Input
		detail	
9/29/2009	Performance Management Advisory Group	Share near final status of all chains (overview only) Share draft & illustrative threat reduction objectives	They are starting to see how this all comes together, general buy-in to the process & products
10/8/2009	Leadership Council	Share draft & illustrative threat reduction objectives and seek approval	General approval of process and products

5. Status of Results Chains

The following sections provide an overview of the status of the set of results chains and their associated threat-reduction objectives and performance measures. Later sections provide more detailed information on the status of specific chains, objectives and measures.

5.1 Results Chain Development

Each topical results chain provides a snapshot of how the 2008 Action Agenda proposes to reduce specific threats through explicit statements of assumed causal relationships linking related activities and strategies to those threats. The seven topical results chain work groups developed a hierarchical framework to organize three types of strategies and activities: (1) prioritized Near-Term Actions (NTAs), (2) ‘other activities/strategies’ identified in Chapter 3 of the Action Agenda, and (3) activities and strategies not identified within the 2008 Action Agenda that work groups believed were critical to achieving stated threat-reduction objectives. Table 11 in Appendix A provides a summary of NTAs, Action Agenda items, and other strategies or activities covered in the results chains.

For each results chain topic, the respective work groups developed two or more detailed sub-chains on more focused areas within topics. This reflects two factors: (1) Chain development was oriented around very broad strategies (e.g., land protection) or very broad threats (e.g., stormwater) and (2) There was a need to represent all or nearly all NTAs. Consequently, the results chains themselves include multiple strategies that addressed different drivers and were conceptually very different. While the chains were more complex than those developed in other Open Standards processes, the Partnership and work groups found it useful to present multiple strategies – reflecting different programmatic or policy emphases – on one page. Doing so provides a framework to see how all the different strategies and actions combine to collectively influence the situation in the Puget Sound Basin.

Significant effort was put into developing tools for communicating the content of the results chains to different audiences. The detailed sub-chains are not useful to some audiences from a communications perspective. The level of detail they present is useful for the on-the-ground managers implementing the strategies and those responsible for monitoring the effectiveness of individual strategies. For policymakers and many external audiences, however, the sub-chains generally contain too much information to digest. The overview chains for each of the seven results chains topics are a more effective communication tool for this audience. These chains show only the strategies and activities implemented, the direct threats they are intended to reduce, and the ecological and human components the Partnership and its partners hope to improve. One risk inherent in this type of simplification is misuse and misinterpretation. The

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

overview chains are summary products, and are inextricably linked to the important content behind them that is contained within the sub-pages. Note that, unlike the sub-chains, these overview chains make the link from the ecological to the human dimension components. At present, this link is not very well understood or developed in the results chains. Over time, the Partnership may use the results chains tool to flesh out these relationships in more detail.

5.2 Identification of Threat-Reduction Objectives

As part of meeting the statutory requirement to establish near- and long-term benchmarks to ensure continuous progress needed to reach the goals, the Partnership worked with the results chains groups to develop specific, time-bound, and measurable “threat- reduction objectives” for several important threats. The Partnership encouraged each work group to develop objectives for the direct- threat reduction results (purple boxes in the results chains). For each chain, work groups tried to get at least two or three that met the Open Standards criteria for a good objective (especially specific, measurable and time-bound). For the others, objectives were more trend-oriented or had some blanks.

Examples of the preliminary and illustrative objectives and measures are presented in the tables that follow for each results chain. The ultimate establishment of these threat-reduction objectives will require a detailed dialog between policy and science leadership within the Partnership. The objectives developed to date and presented in the tables are the beginning of that dialog and should not be considered a formal proposal by the Partnership. With the benefit of time, analysis and a structured policy-science dialog, the material in the table will evolve to a set of approved, measurable threat-reduction objectives.

5.3 Common Themes from Results Chain Development

A few topics emerged across all the chains and may merit further consideration: (1) watershed scale assessments to inform strategy and activity development; (2) cross-agency and multi-scalar collaboration; and (3) funding resources. In terms of watershed assessments, many chains identify these assessments as the basis for determining where to take action (e.g., identifying areas for protection or restoration or those in need of priority storm water facility retrofits) and informing the best type of action to take. Looking across all the chains, there are clearly high expectations for the watershed assessments. As discussed in the Next Steps section, it would be useful to develop a results chain around these assessments to provide greater clarity about what these watershed assessments can and cannot accomplish. Cross-agency and multi-scalar collaboration and coordination was another theme that work groups thought was necessary to show in all the chains. There was a general recognition that many of the strategies cannot be successful at the scale of the Puget Sound Basin if strong collaboration and coordination do not

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

exist. Some also indicated there was a need for a coordinating institution that had legal jurisdiction to make coordination happen. Another continuous theme was that all of these strategies are based on a huge assumption about enough funding resources being available. Several results chains have results explicitly stating that the funding needs to be available. The 2008 Action Agenda has a chapter devoted to “Financing Strategy” that could inform any future results chains work on this topic.

Finally, the results chains tool provided an effective method to look at sets of related actions, but it is important to keep in mind the connections across results chains. These connections provide the “glue” that helps tie these efforts together into a cohesive package of strategies that work together to effect conservation across a large, complex and dynamic region. The individual diagrams note these relationships with boxes around yellow hexagons that are labeled: “See RC X.” Within each description of the individual results chains, there is also a written list of the related results chains. In addition, Table 3 and Table 11 show these important connections across the seven topical areas depicted in the results chains diagrams.

5.4 Overall Status of Results Chains, Objectives and Performance Measures

The results chains presented here contain three categories of strategies and activities:

1. Prioritized Near-Term Actions
2. Chapter 3 strategies/activities that were not identified as Near-Term Actions
3. Strategies/activities not identified within the Action Agenda that results chains work groups identified as necessary to achieve RC threat reduction objectives

To maintain the direct reference to the Action Agenda, the results chains use the same number- and letter-coding in the 2008 Action Agenda: X1(1) for Near-Term Actions from Table 4.1 and X.1.1 for action agenda items from Chapter 3 not identified as Near-Term Actions (Figure 3). The latter of these were added by work groups in situations where they felt the strategy or activity was necessary for the rest of the results chain to produce the desired results.

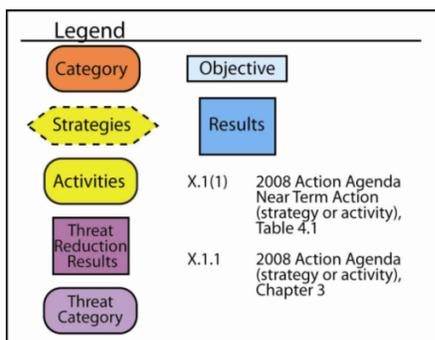


Figure 3. Legend for Results Chains

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

It is important to note that, simply by the nature of the results chain process, the current products reflect the availability and expertise of the experts who generously contributed to this effort as well as the timeframe within which these products were developed. The Partnership recognizes that the project timeframe and availability of topic experts affected the degree to which the final products could be comprehensive.

The work groups were able to develop objectives and associated measures for most of the threat reduction results. Partnership staff and consultants were also able to identify situations where objectives were shared across many chains. For example, objectives related to reduced stormwater runoff and loading (from RC6 Stormwater) were shared with RC1 Land Protection, while RC2 Flow Protection and RC4 River Restoration share a common objective related to improved dam operations (Table 3). Given the tight timeframe and the limited availability of some partners, however, work groups were not able to progress very far on the threat-reduction objectives and performance measures or vet them with a wider group of experts. As a result, these draft objectives and measures will need further attention.

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

Table 3. Threat-Reduction Objectives and Measures Shared across Results Chains

Threat Reduction Result	Threat Category	Results Chains With Shared Threats & Objectives						
		RC1 Land Protection	RC2 Flow Protection	RC3 Invasives	RC4 River Restoration	RC5 Nearshore Restoration	RC6 Stormwater	RC7 Waste water
Agricultural management in floodplains consistent with river & floodplain restoration	Agriculture & Livestock Grazing				X			
Dams better operated, retrofitted, or removed	Dams, Levees & Tidegates		X		X	X		
Dikes, levees, tidegates, &/or floodgates set back, removed or retrofitted	Dams, Levees & Tidegates				X	X		
Derelict gear removed	Derelict Gear & Vessels					X		
Established invasives controlled or eradicated	Invasives - Marine, Terrestrial, & Freshwater			X	X	X		
New introductions of invasives prevented	Invasives - Marine, Terrestrial, & Freshwater			X				
New invaders contained or eradicated	Invasives - Marine, Terrestrial, & Freshwater			X				
Upland logging practices more sustainable	Large Scale Timber Harvest				X			
Reduced contamination from on-site sewage systems	Onsite Sewage Systems							X
Recreational marinas impacts reduced (e.g., footprint, over water cover, construction materials)	Recreational Marinas					X		
Growth focused in desired urban growth areas	Residential, Commercial, Port & Shipyard Development	X						
Less development in ecologically valuable areas	Residential, Commercial, Port & Shipyard Development	X						
New and redevelopment is more ecologically sensitive	Roads, Transportation & Utility Infrastructure	X						
Physical impacts from residential/ commercial/ industrial development decreased	Residential, Commercial, Port & Shipyard Development				X			
Reduced new transportation and utility corridors	Roads, Transportation & Utility Infrastructure	X						
Remove, retrofit or relocate roads, transportation & utility Infrastructure	Roads, Transportation & Utility Infrastructure					X		
Existing shoreline armoring retrofitted or removed	Shoreline Armoring	X				X		
Shoreline armoring in critical areas only occurs to protect property rights or critical infrastructure	Shoreline Armoring	X						
Soft armoring techniques used where new armoring or retrofitting is unavoidable	Shoreline Armoring	X						
Reduction in runoff and loading from forestry areas	Surface Water Loading & Runoff						X	
Reduction in contaminants from agricultural runoff	Surface Water Loading & Runoff						X	
Reduction in stormwater contaminants	Surface Water Loading & Runoff	X					X	
Reduction in stormwater runoff from the built environment	Surface Water Loading & Runoff	X					X	
Reduced loading from Wastewater Treatment Plant Discharge & CSOs	Wastewater Treatment Plant Discharge & CSOs		X					X
Less water use per capita (incl. potable)	Water Withdrawals & Diversions		X					
Less water diverted or withdrawn	Water Withdrawals & Diversions		X					

6. Presentation of Current Results Chains

The following sections describe the current state of the results chains for the seven topics, as well as major discussions the groups had, and differences of opinions and uncertainties on specific issues. They also include the products associated with each chain: the overview and sub-chains themselves; in-process threat-reduction objectives; and draft performance measures for those objectives. It is important to keep in mind this document presents the results of work to date. Over time, the Partnership will continue to consult with relevant work groups to refine and update the products. Thus, products such as the results chain structure, threat-reduction objectives and associated performance measures here should be considered works in progress, current as of the release of this document.

7. Results Chain 1: Land Protection

The Land Protection work group met five times over the course of six weeks. They developed two content chains and one overview chain that summarizes the content chains. Partnership staff made a decision to focus this chain on land (rather than marine) protection. This was generally due to the number of Action Agenda items that specifically addressed land protection and the close relationship between intact functioning land systems and healthy freshwater and marine systems. In a separate exercise, Partnership staff helped develop a marine-protected areas chain.

7.1 RC 1a Land Protection: Acquisition & Protection of Lands Important for Structures, Processes, & Functions

This chain includes Near-Term Actions related to permanently protecting intact areas that still function well through acquisition of property (A2 from chapter 3 of the 2008 Action Agenda). This chain focuses on full acquisition as well as the acquisition of development rights. The latter of these included results related to establishing markets for developers in Urban Growth Areas to buy those rights. This chain has some areas that still need further refinement, as detailed below.

7.2 RC 1b Land Protection: Regulatory

This chain incorporates regulatory strategies that focus growth away from ecologically sensitive areas into Urban Growth Areas, as well as strategies to strengthen shoreline management. There were discussions within the group whether and how to reflect NTA A1(1) (Convene a regional planning forum for a coordinated vision.). This seems to overlap with the cross-agency, multi-scalar collaboration theme that emerged across all chains. The group chose to include A.2.27 (Resolve legislative and other barriers that limit density and development in cities) because

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

participants felt it was a critical strategy missing from this results chain. One challenge is that this strategy is so broadly worded that the results flowing out of it are also necessarily broad (solutions identified, solutions evaluated, solutions prioritized, etc.).

One major shortcoming to this chain emerged in the group's last session when discussing threat-reduction objectives. This related to the need for new and re-development to be more ecologically sensitive (not just happening in the "right" place). The work group added a related threat-reduction result and linked it with the 2008 Action Agenda item: "A.2.2.8 Development incentives to increase and improve redevelopment within UGAs." Future work on this results chain will need to include specifying further the causal links between the Action Agenda item and the threat-reduction result.

The work group identified several challenges or gaps in the result chain that reflected concerns about the 2008 Action Agenda strategies themselves. These issues are common to the findings from several results chain work groups and are summarized as follows:

- The Partnership does not have the authority to create, implement or enforce a regional vision.
- Every local government operates independently right now, and there is high variability among them.
- Funding mechanisms can result in competition among counties rather than cooperation.
- Attempts to centralize authority run the risk of chipping away at the bottom-up nature of the Growth Management Act.
- There needs to be clear guidance about where development should occur across the Sound, specifically in the vicinity of the Urban Growth Boundaries, as informed by the watershed assessments and other technical knowledge.

7.3 Objectives and Performance Measures

The Land Protection Results Chain work group had limited time to discuss threat-reduction objectives and focused efforts on developing objectives for the following threat-reduction results:

- growth focused in desired Urban Growth Areas
- less development in ecologically valuable areas

The results of the work group's efforts are presented in Table 4. For the most part, density levels and parcel size specifications were informed by accepted or well-known standards – for example, a minimum density of at least four units per acre in urban growth areas or a maximum impervious surface coverage of 2-3% .

Many of the objectives in this chain were shared with other chains and, as such, the work group was able to use the draft objectives from other chains (e.g., RC6 stormwater). Under the time

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

constraints, however, the work group was unable to develop threat-reduction objectives for the following results:

- new and re-development is more ecologically sensitive
- soft armoring techniques used where new armoring or retrofitting is unavoidable
- shoreline armoring in critical areas only occurs to protect property rights or critical infrastructure
- reduced new transportation and utility corridors

7.4 Related Results Chains

The work group noted the following results chains whose strategies and activities also contribute to or are associated with the results expressed in the land protection chain:

- RC4 River and Floodplain Restoration
- RC5 Nearshore Restoration
- RC6 Stormwater
- A separate chain developed outside of the work for this report that addresses marine protected areas.

7.5 Issues to Address for Future Work

Future work on this results chain should consider the following gaps and issues:

- RC 1a: Seek greater external input on the section on identifying and establishing markets for development rights.
- RC 1b: Address the overlap between the multi-scalar collaboration theme and NTA A1(1). (Convene a regional planning forum for a coordinated vision.)
- RC 1b: Develop in greater detail A.2.2.7 (resolve legislative and other barriers that limit density and development in cities). As currently conceptualized, it is very broad.
- RC 1b: Develop intermediate results that flow from Action Agenda item A.2.2.8 – “Development incentives to increase and improve redevelopment within UGAs.”
- The watershed assessments and financing strategies may be developed separately as part of an early 2010 results chain work program; results from that work will need to be incorporated into the Land Protection chain.
- Consider the challenges the work group outlined and see how to address them (here and in other chains).

Using Results Chains to Develop Objectives and Performance Measures for the 2008 Action Agenda

- Review, vet and refine existing objectives and measures to make them comply with the Open Standards criteria for “good” objectives and measures.
- Develop and vet new objectives and measures for the following threat reduction results: (1) New and re-development is more ecologically sensitive; (2) Soft armoring techniques used where new armoring or retrofitting is unavoidable; (3) Shoreline armoring in critical areas only occurs to protect property rights or critical infrastructure; and (4) Reduced new transportation and utility corridors.
- Develop objectives for key intermediate results linking strategies to threat reduction results.