



Conservation
Measures
Partnership



MIRADI™



The Open Standards & Miradi Software

*A Framework and Toolkit for “Real-World”
Adaptive Management of
Conservation Projects and Programs*



About Foundations of Success

Our Structure

- Non-profit organization

Our Mission

- To improve the practice of conservation

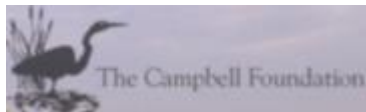
Our Strategy

- Work with practitioners of all kinds to improve the design, management, monitoring, and learning from conservation projects and programs

*We don't implement conservation projects,
we make our partners' conservation projects better!*



The Conservation Measures Partnership: Leading Conservation Organizations



Environment
Canada

Environnement
Canada



Parks
Canada

Parcs
Canada



PROGRAMMA NAAR EEN
RIJKE WADDENZEE



CONANP
COMISIÓN NACIONAL
DE ÁREAS NATURALES
PROTEGIDAS





Adaptive Management Software
for Conservation Projects

+



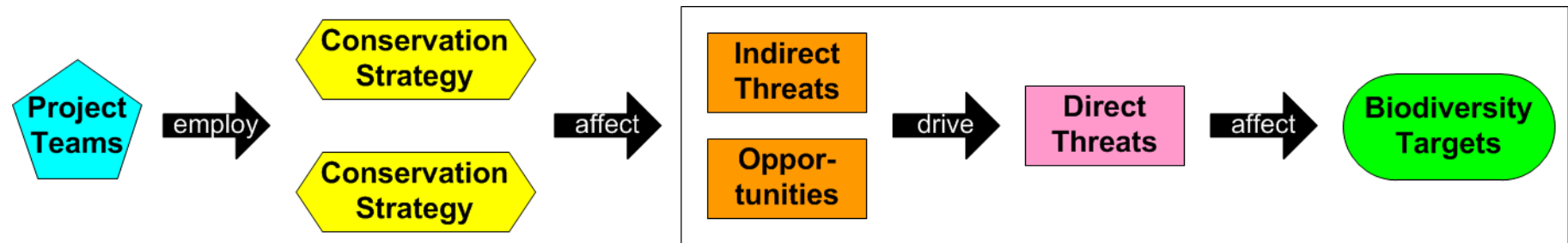
I'm Also a Local Stakeholder...

Living on the Banks of the Potomac Gorge





Conservation & Natural Resource Mngmt Projects Come In All Shapes and Sizes



1. Neighborhood work on the Potomac Gorge
2. A state or national park
3. A range-wide management plan for the Reddish Egret
4. Standard performance measures for State Fish & Wildlife Agency funding programs
5. State Wildlife Action Plan for California or Idaho
6. Cross-agency work on Lake Ontario or Puget Sound



Conditions Facing Conservation Projects

Conservation projects:

- Take place in complex and dynamic systems
- Need to deal with ongoing, unpredictable change
- Are dealing with rapidly changing “competitors”

Project teams:

- Lack complete information
- Must take immediate action in face of uncertainty
- Can improve and learn



So What is Adaptive Management?

Definition #1



Whatever
Anyone Wants



So What is Adaptive Management?

Definition #2

C.S. Holling et al in the 1970s and 80s:

- Managing for ecological resilience
- Treat policy as experimentation
- Models are necessary to understand the system and the experiment
- Passive versus active experimentation



Clark, Jones & Holling 1979

“Lessons for Ecological Policy Design”

“Compressions and simplifications” are “essential to encapsulate understanding and help intuition play its central role in the analysis [and] to facilitate communication in the transfer process.”

We multiply through by α/B and (6) becomes

$$\frac{\alpha r_B}{\beta} \left(1 - \frac{\alpha \mu}{K_B} \right) (1 + \mu^2) = 0 \quad (7)$$

Now eqn (7) involves just two combinations of the original parameters. We set

$$R = \frac{\alpha r_B}{\beta}, Q = \frac{K_B}{\alpha} \quad (8)$$

and rewrite eqn (7) as

$$R \left(1 - \frac{\mu}{Q} \right) = \frac{\mu}{1 + \mu^2} \quad (9)$$

The interpretation of eqn (9) is both simple and important. The left-

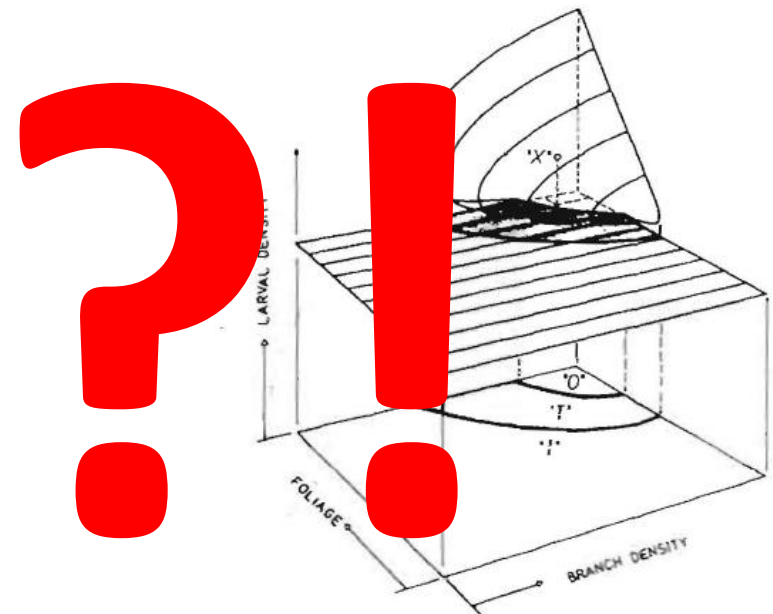
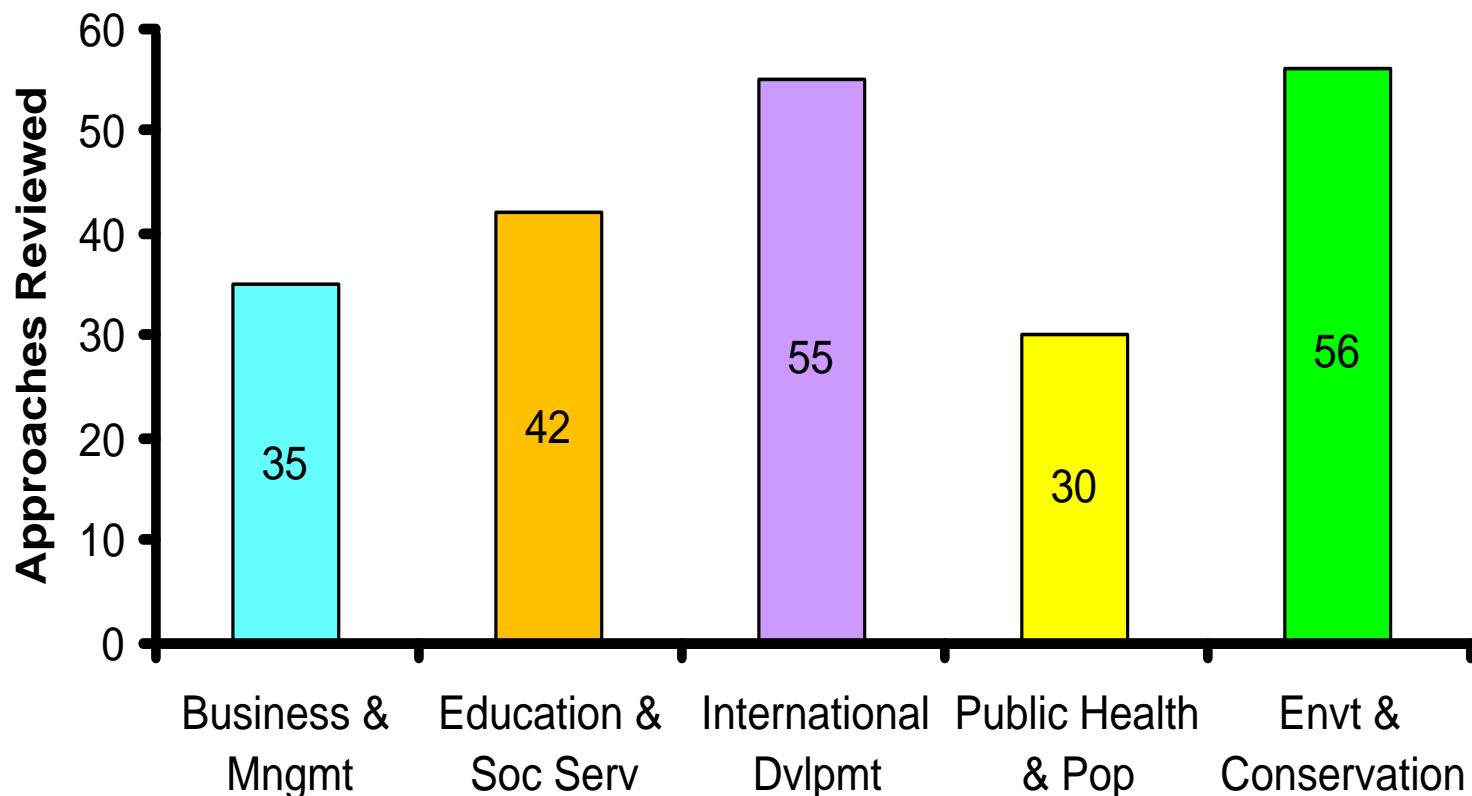


FIGURE 13: *Equilibrium manifold for budworm as used in policy analysis.* See text.

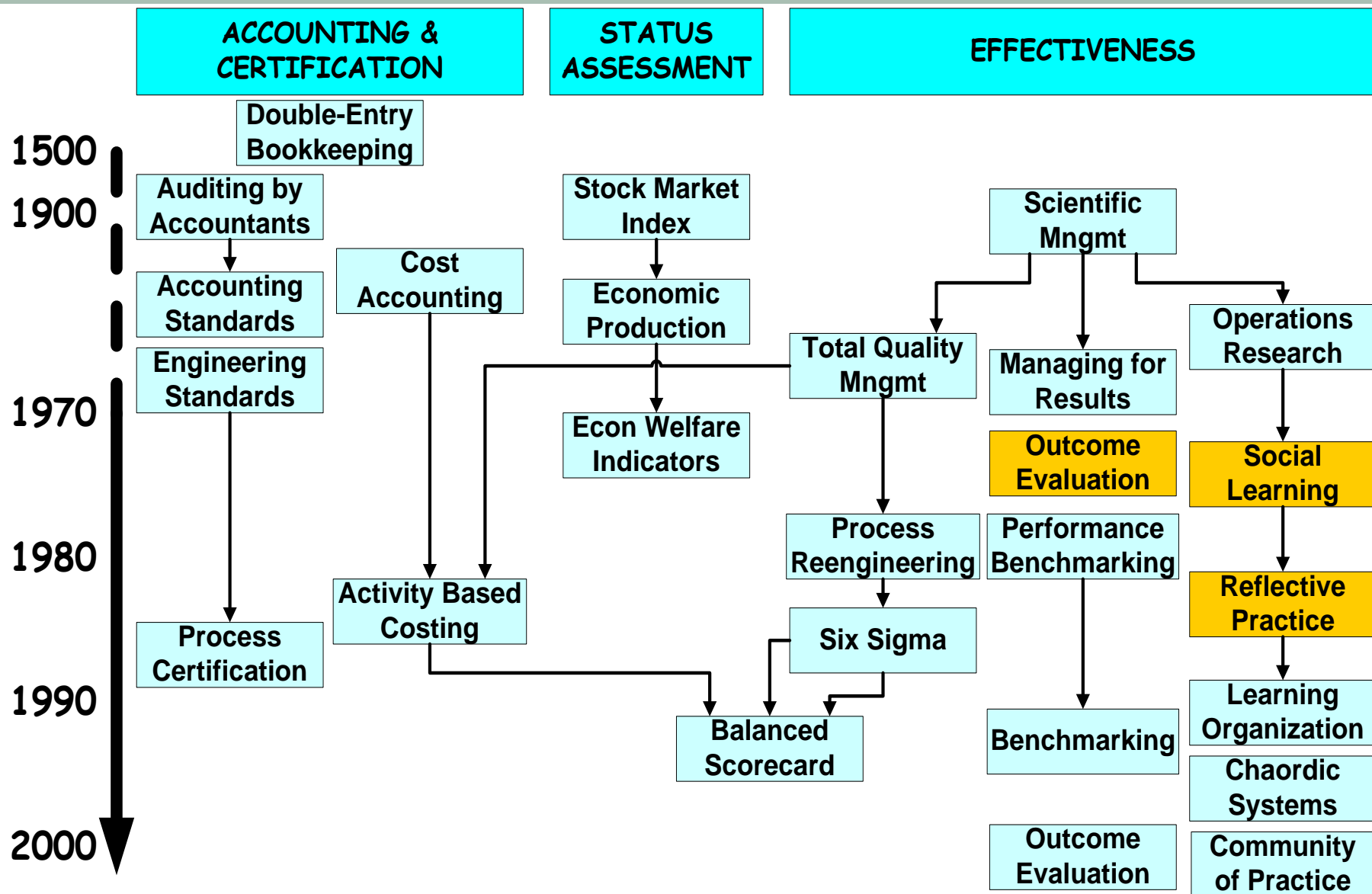


Research On Over 220 Measures Systems in Different Fields





Business & Management Family Tree





Need to Integrate Measuring Effectiveness into an Iterative Project Cycle

**ACCOUNTING &
CERTIFICATION**

**STATUS
ASSESSMENT**

EFFECTIVENESS

1500
1900
1970
1980
1990
2000

**External
Summative
Evaluations**

**Participatory
Formative
Evaluations**

**Project Cycle
Based
Monitoring**



Status Question: How are Species and Ecosystems Doing?





Effectiveness Question: Are Our Actions Leading to Desired Results?



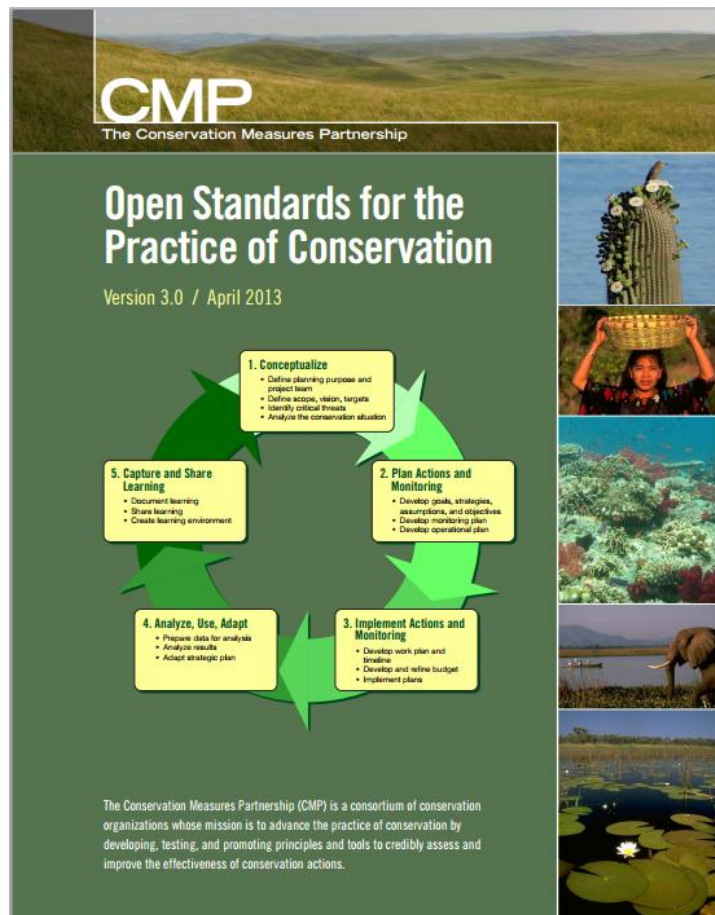


Similar Concepts, Different Words

CMP	AWF	CI	TNC	WCS	WWF
Biodiv Targets	Focal Targets	Conserv Outcomes	Focal Conserv Targets	Landscape Species	Long- Term Goals
Threats	Threats	Pressures	Threats	Threats	Threats
Objectives		Milestones	Objectives	Targets	Project Targets



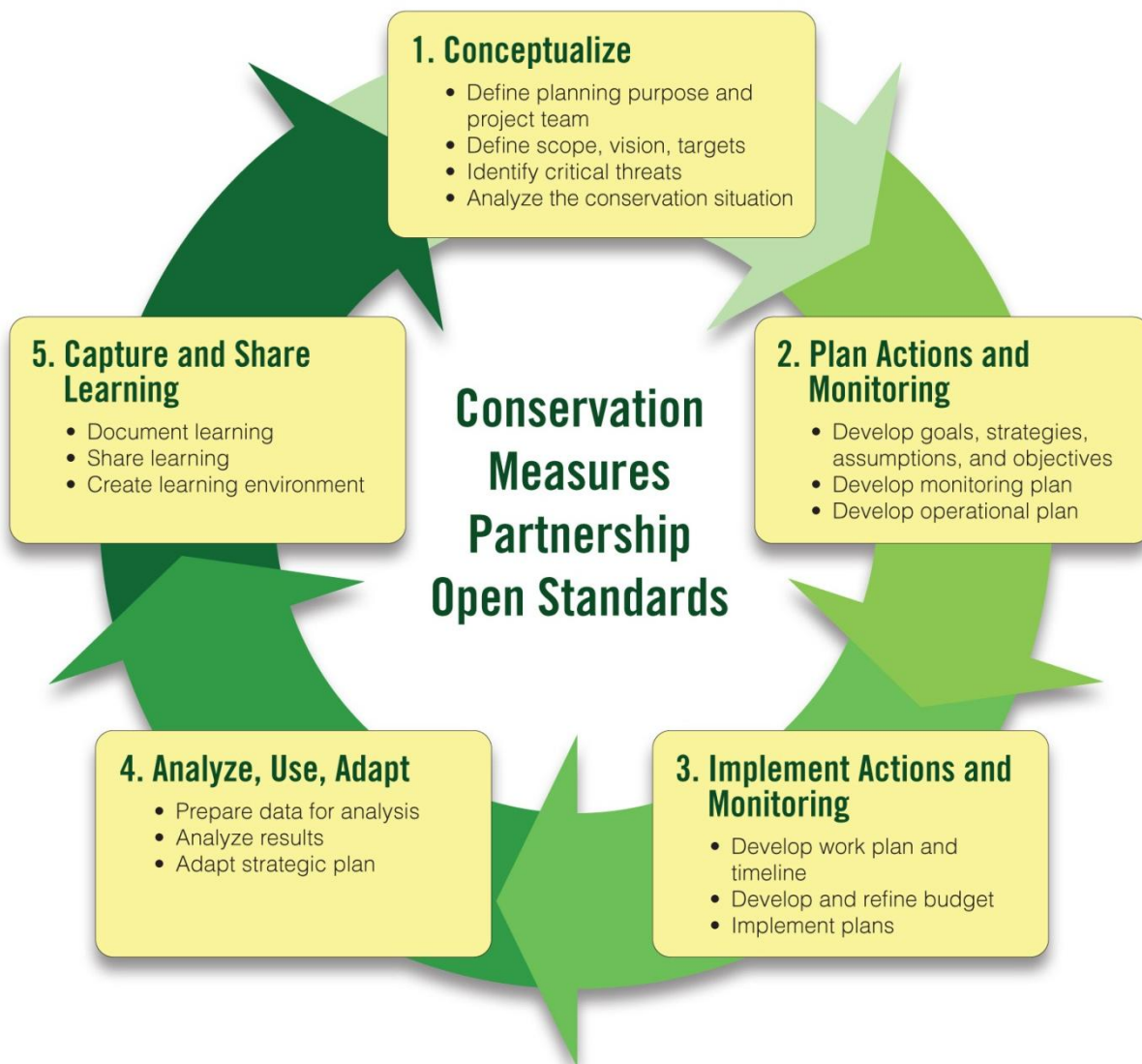
Conservation Measures Partnership's Open Standards



- Developed by leading orgs & agencies
- Draws on many fields
- Open source & common language
- Used around the world
 - Community Groups
 - Conservation NGOs
 - NR / Wildlife Agencies
 - Donor Funding Programs
 - Academic Training



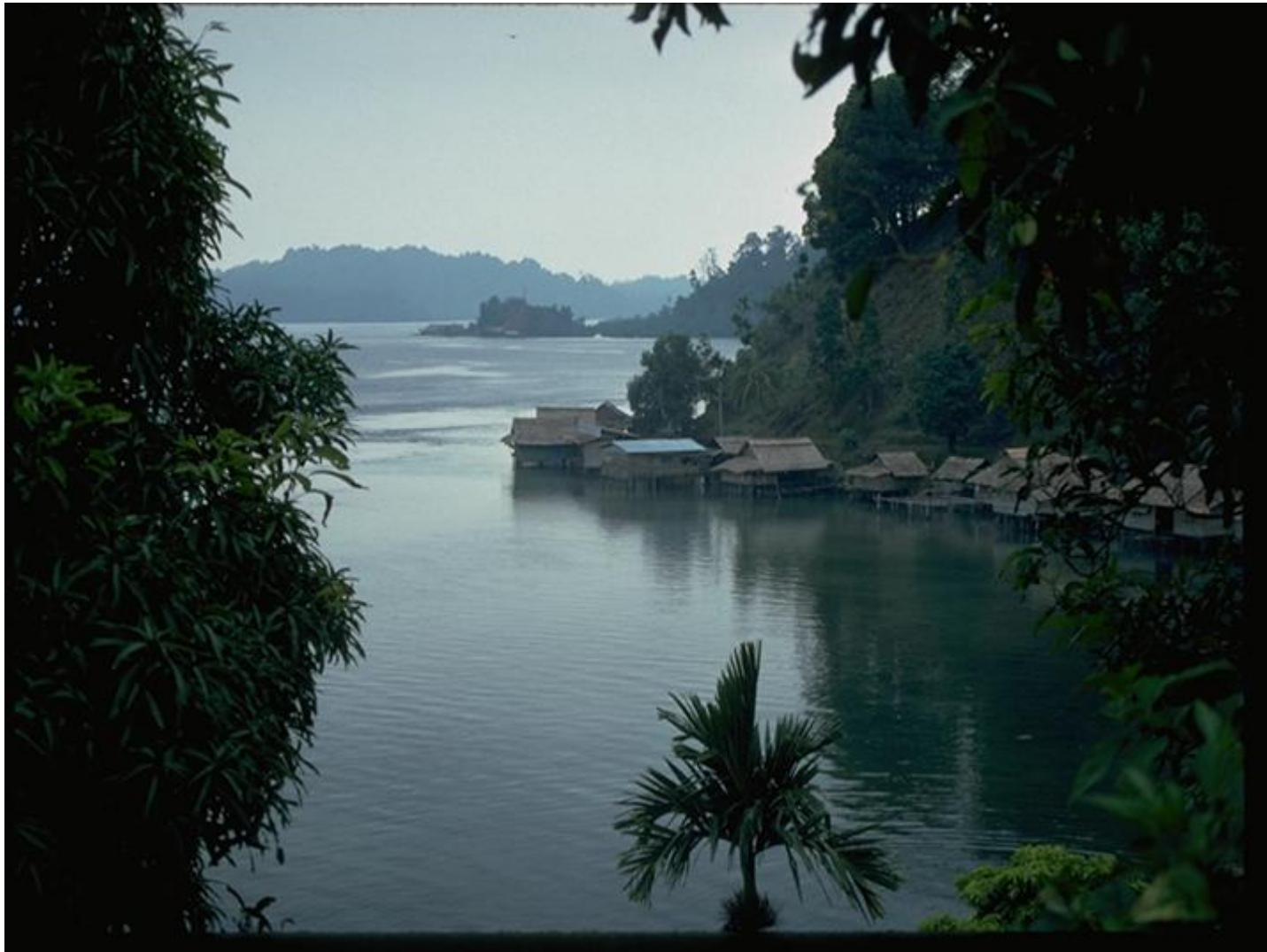
The Open Standards for the Practice of Conservation





Define Project Scope

Step 1

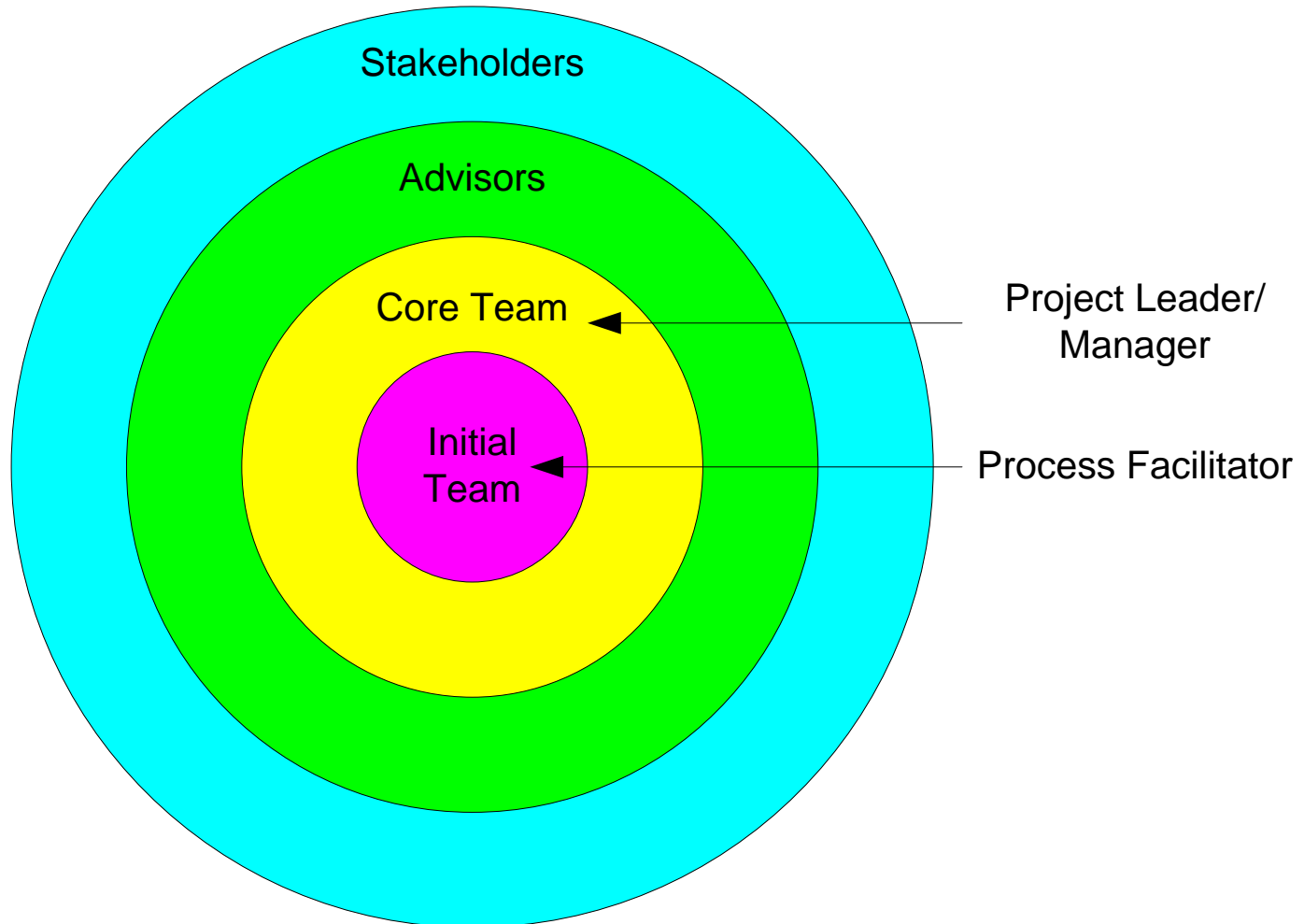




Define Project Team

Step 1

Full Project Team





Develop Conceptual Model Of Your System

Step 1

Direct Threats



Targets





Plan Actions and Monitoring

Step 2

“A plan is truly strategic when it specifies not just what you WILL do, but also what you WILL NOT do, and why.... It is about making systematic choices.”

- Dan Martin

- Which targets require attention?
- Which threats are most critical?
- How can we best spend our limited time and treasure to change the situation?



Plan Actions and Monitoring

Step 2





Implement Actions & Monitoring

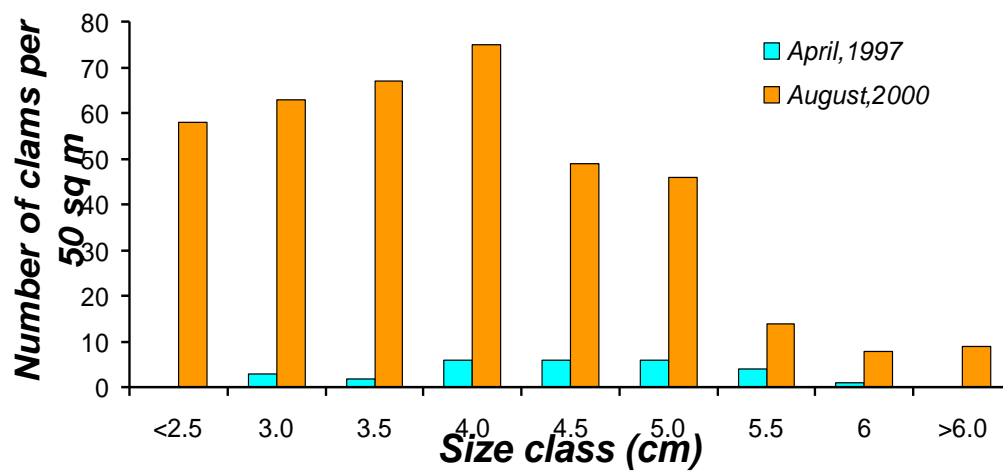
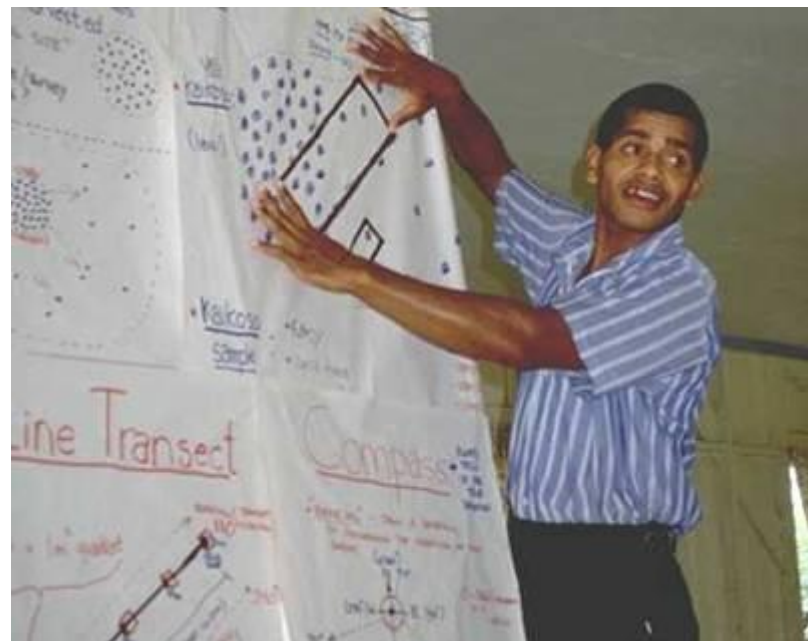
Step 3





Analyze, Use, Adapt

Step 4





Capture & Share Learning

Step 5



LMMA Network

Improving the practice of marine conservation

- Home
- Who we are
- What we do
- Where we work
- News
- Resources
- Contact Us

News Briefs

LMMA Guidebook now available in French

Just released: LMMA Network Community

The Locally-Managed Marine Area (LMMA) Network

We are a group of marine conservation practitioners working in Asia and the Pacific who have joined together to increase the success of our efforts.

Our website is designed to provide information, lessons and stories from communities that are using a [locally-managed marine area](#) approach in the management and conservation of their marine resources.

This website is aimed at practitioners, researchers, students, and anyone else interested in marine conservation. We hope you enjoy your visit and we welcome your feedback.

Member Profiles

[Read about our members at various LMMA sites](#)

Traditional Practices

[Read about traditional practices in various countries](#)



So What is Adaptive Management?

Definition #3

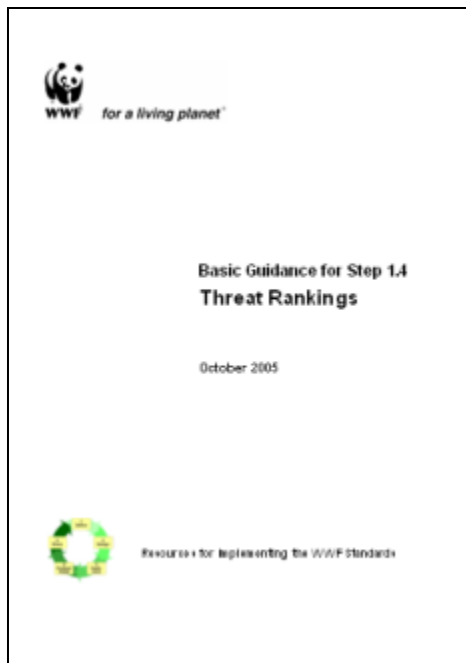
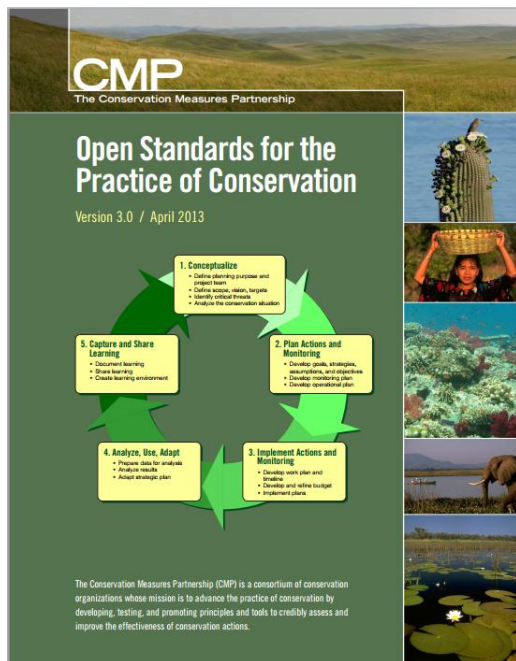


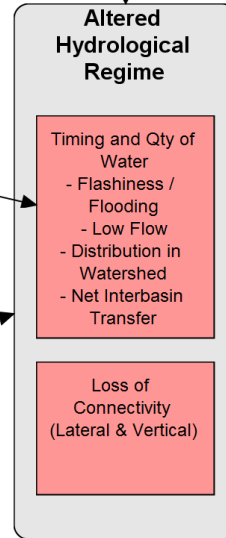
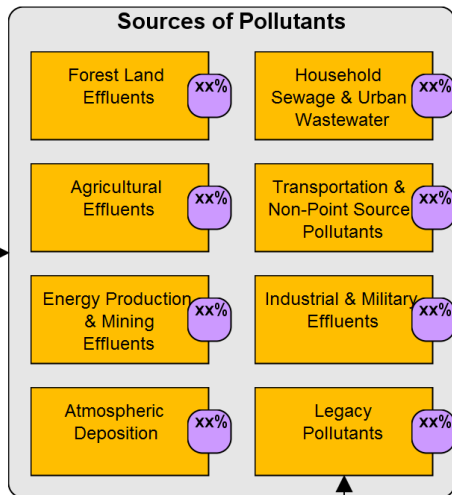
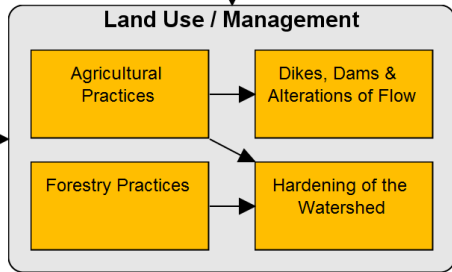
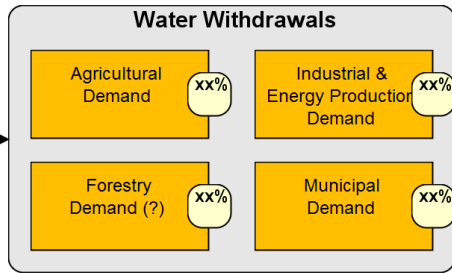
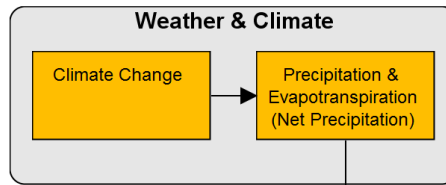
Chesapeake Bay Decision Framework



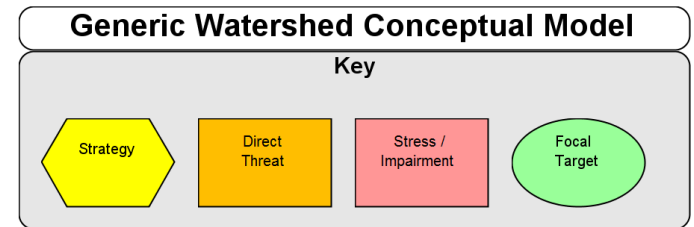
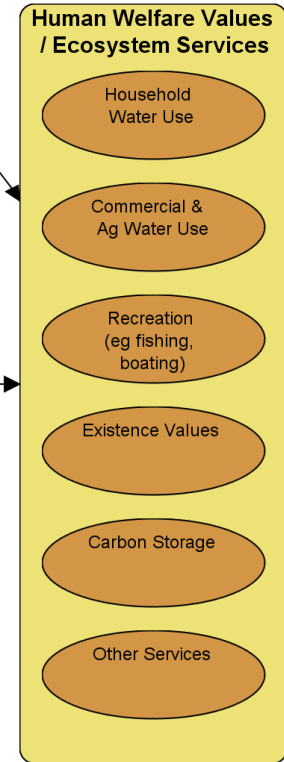
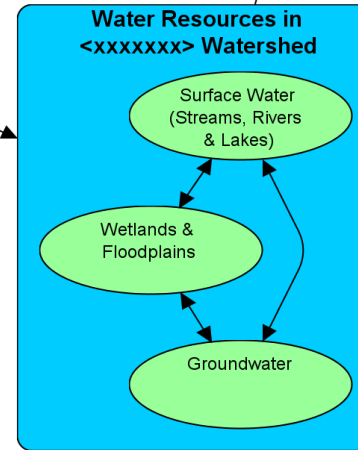
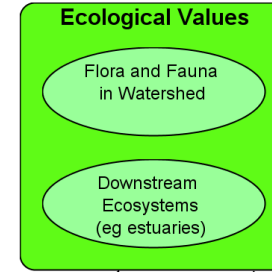
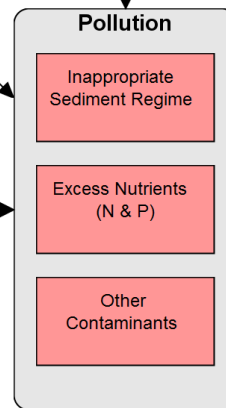


Tools to Support *Open Standards*





Water Qty
Affects
Pollution
Concentration



Various Drivers

Various Drivers

Various Drivers

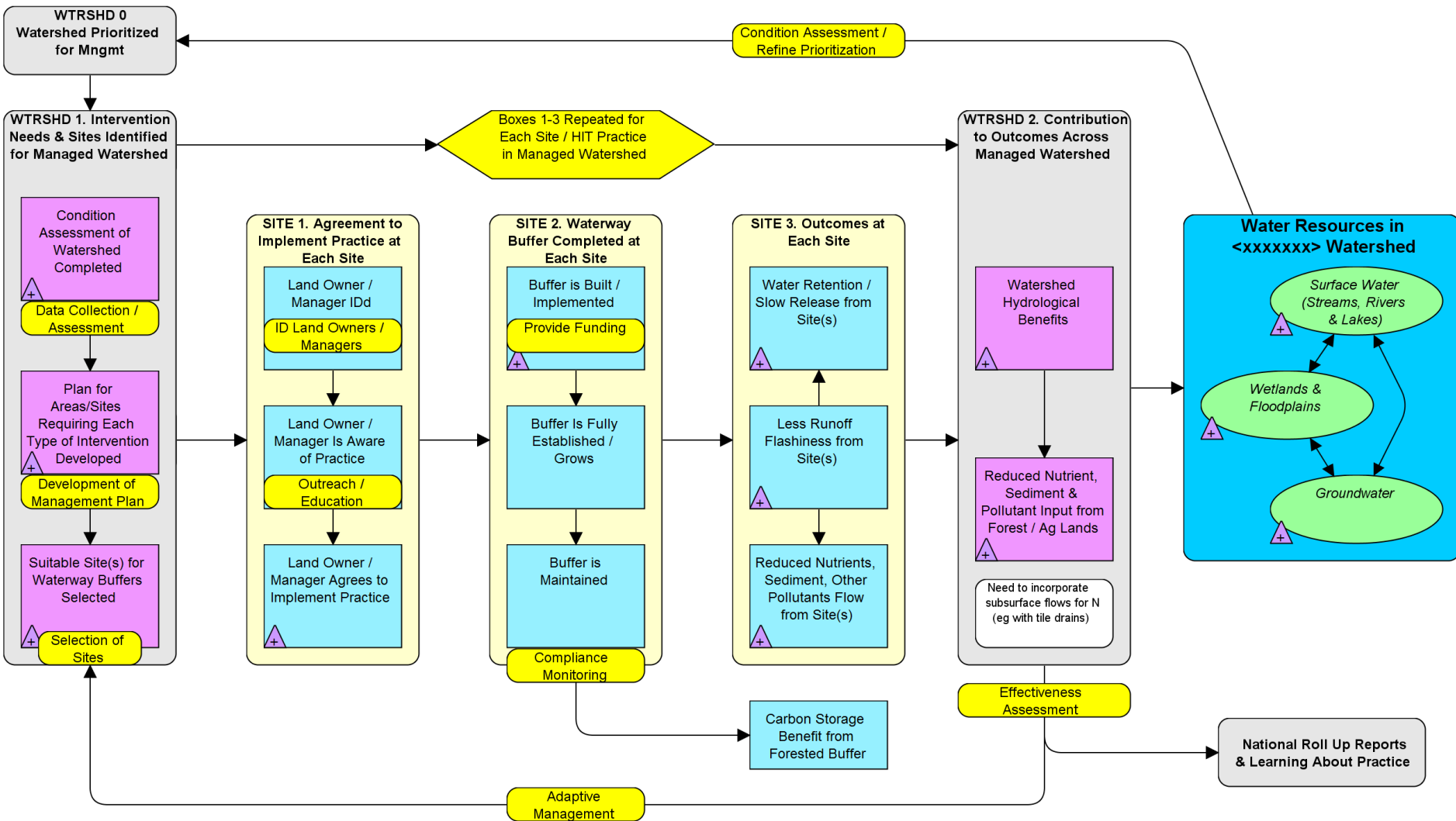
Waterway Buffers

Results Chain for Waterway Buffers

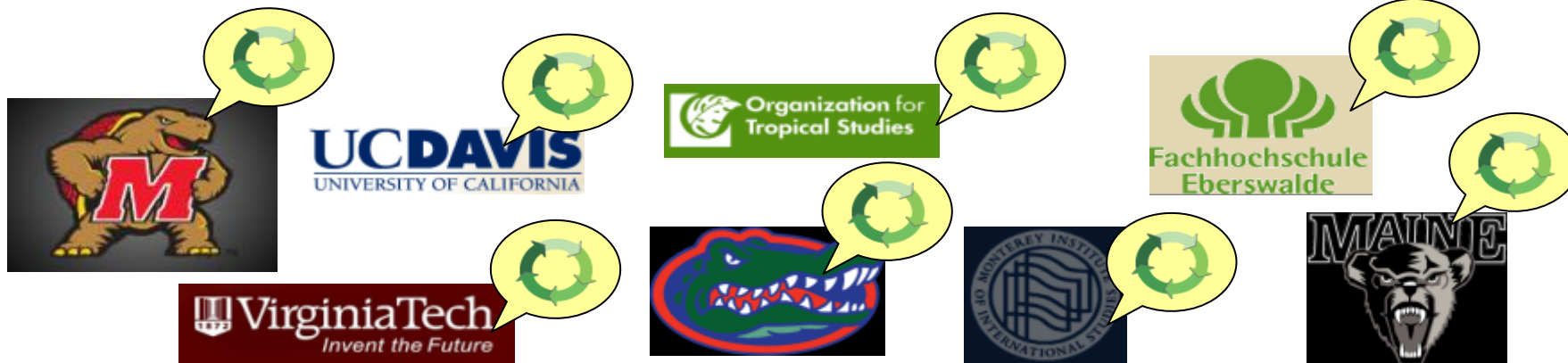
Year 1

Year 2

Years 2-10+ (time lag depends on buffer type)



Training Courses & Coaches



Conservation Coaches Network: 270 Coaches 59 Countries

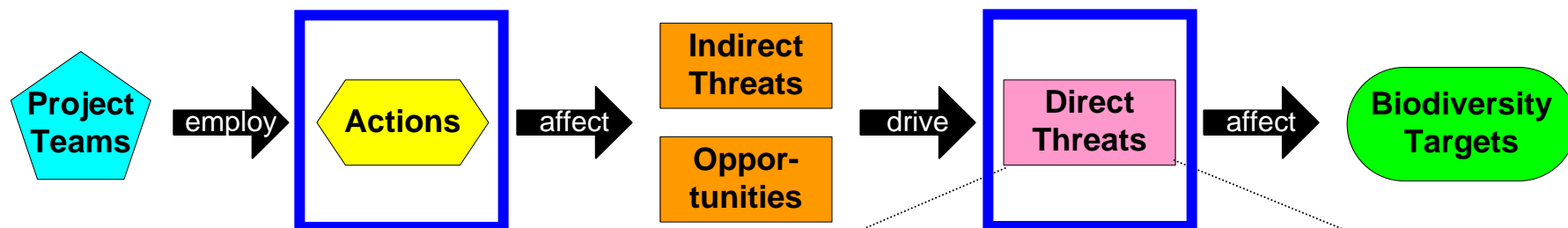


CSP3128 - Open Standards for the Practice of Conservation

Course Code	CSP3128
Course Title	Open Standards for the Practice of Conservation
Description	This course is based on Conservation Measures Partnership's Open Standards for the Practice of Conservation. The Open Standards Method will be applied to the Fish and Wildlife Service's



Standard Terms to Describe Conservation Work



- Cows?
- Cattle?
- Livestock?
- Grazing?
- Ranching?



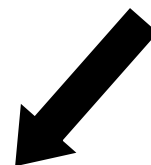
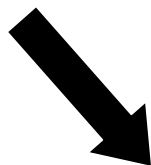


Two Independent Systems Have Now Been Unified



IUCN Red List
Authority Files

CMP
Taxonomies



Unified Global
Classifications

Dedicated Software Systems to Support Open Standards



Adaptive Management Software
for Conservation Projects

+



MiradiTM Software is “Turbo Tax” for Conservation

The screenshot displays the TurboTax Basic 2003 software interface. At the top, the title bar reads "TurboTax Basic 2003". Below it is a menu bar with "File", "Edit", "View", "Forms", "EasyStep", "Tools", "Online", "Window", and "Help". A navigation bar shows steps: "1. Personal Info", "2. Income", "3. Deductions", "4. Taxes/Credits", and "5. Misc.". A "Refund \$0" indicator is on the right.

The main content area is titled "Which Return Do You Need to File?" and asks the user to "Select the type of return to prepare:". Three radio buttons are available:

- ☒ [My 2003 Income Tax Return](#)
- ☐ [An Extension of Time to File My 2003 Return](#)
- ☐ [An Amended Return for 2003 or a Prior Year](#)

A "Back" button with a left arrow is at the bottom left of the selection area.

On the right side, there is a "Help & Info" section with a search box and an "ask" button. Below it are links for "Help & Info Center" and "Talk to a Tax Advisor". A "Common Questions" section lists several questions with links, such as "If I file an extension, how much extra time can I get to file my tax return?".

A window titled "Form 1040: Individual Tax Return" is open, showing the "U.S. Individual Income Tax Return" for the year "2003". The form includes fields for "Form 1040", "U.S. Individual Income Tax Return", and "2003". Below these, it says "For the year January 1 - December 31, 2003, or other tax year beginning _____, 2003, ending _____, 20 ____". At the bottom, there are fields for "Your First Name", "MI", "Last Name", "Your Social Security No.", "If Joint Return, Spouse's First Name", "MI", "Last Name", and "Spouse's Social Security No.".

The Windows taskbar at the bottom shows the "Start" button, several open applications (3 Micros..., 4 Micros..., 2 Micros..., IUCN - Mo..., presentati...), and the TurboTax application. The system clock shows "11:26 PM".

MIRADI™ Step-by-Step Interview & Tools to Capture Key Project Information

Miradi - MarineExample-2.2.1
File Edit Actions View Step-by-Step Help
Threat Ratings
Simple Threat Rating Mode
More Info Examples Workshop

Step 1C. Identify Critical Threats
Rank direct threats: 2) Rate the scope of the threat

Using the scale shown on the right, rate the [scope](#) of the threat on the target.

What is the scope of the threat on the target?
Very High

Scope - Most commonly defined spatially as the proportion of the target that can reasonably be expected to be affected by the threat within ten years given the continuation of current circumstances and trends. For ecosystems and ecological communities, measured as the proportion of the target's occurrence. For species, measured as the proportion of the target's population.

- Very High:** The threat is likely to be pervasive in its scope, affecting the target across all or most (71-100%) of its occurrence/population.
- High:** The threat is likely to be widespread in its scope, affecting the target across much (31-70%) of its occurrence/population.
- Medium:** The threat is likely to be restricted in its scope, affecting the target across some (11-30%) of its occurrence/population.
- Low:** The threat is likely to be very narrow in its scope, affecting the target across a small proportion (1-10%) of its occurrence/population.

< Previous
Next >

THREATS	TARGETS						Summary Threat Rating
	Coral Reefs	Mangroves	Seabirds	Seagrass Beds	Sharks		
Unsustainable Fishing By Locals	Very High			Very High			Very High
Introduced Predators (Rats)			Very High				High
Illegal Shark Finning by Mainland Boats					High		Medium
Global Warming	High						Medium
Sewage		Low	Medium	Low			Low
Diver & Anchor Damage	Medium						Low

Threat: Unsustainable Fishing By Locals
Target: Coral Reefs
Scope: Very High
Severity: Very High
Irreversibility: Very High
Comments: Blast fishing is decimating coral reefs

MIRADITM Diagram View

Miradi - MarineExample-2.2.1

File Edit Actions View Step-by-Step Help

Diagram

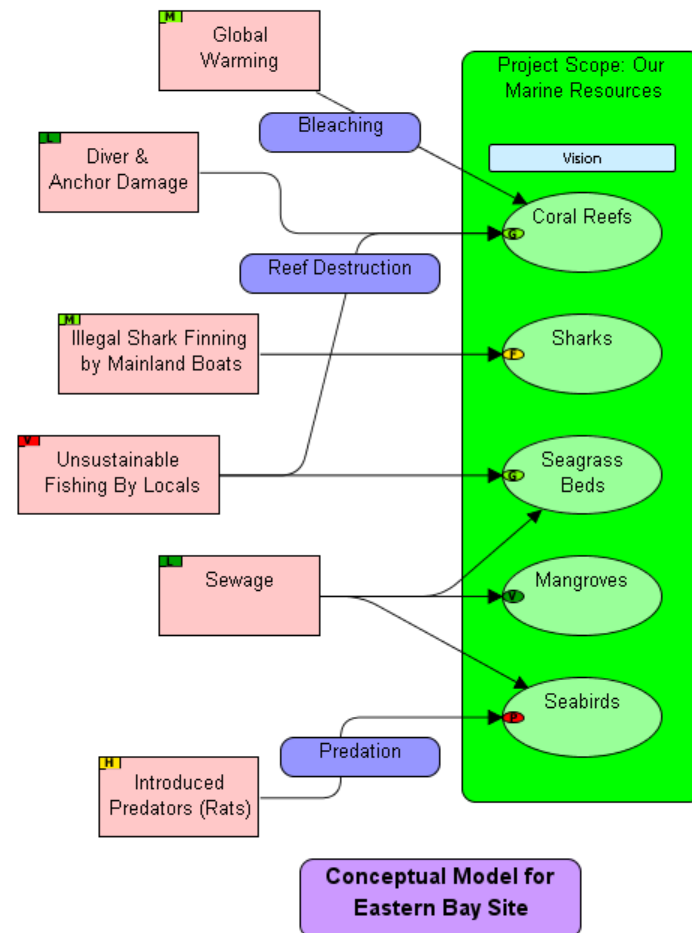
More Info Examples Workshop

Conceptual Model Results Chains

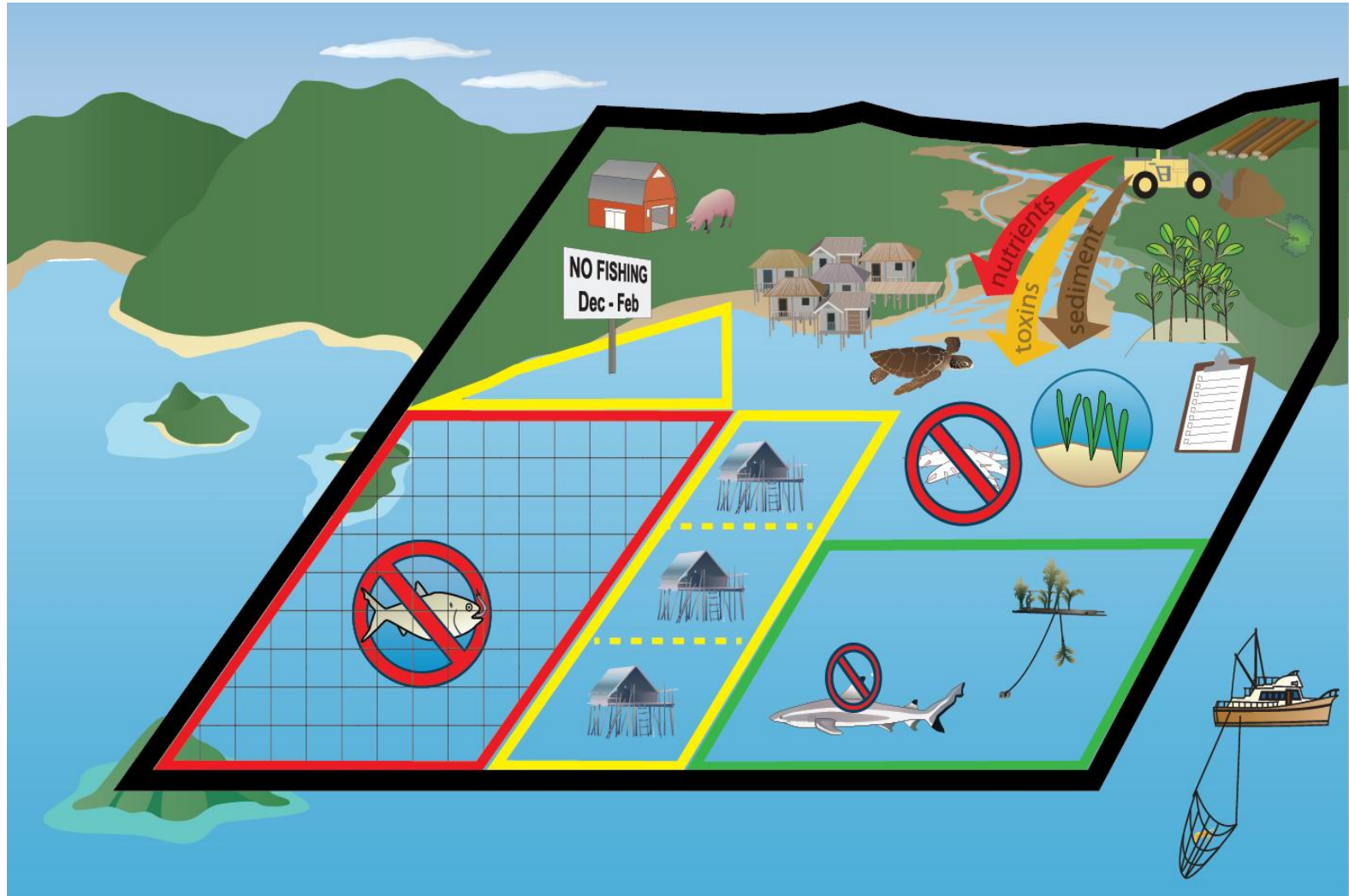
Control Bar

Conceptual Models
EB Main Model

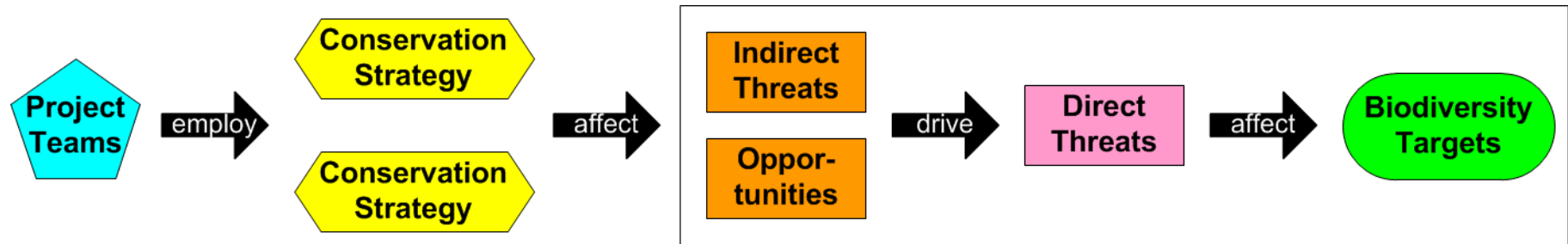
- ☒ Scope Box
- ☒ Insert Target
- ☒ Insert Direct Threat
- ☐ Insert Contributing Factor
- ☐ Insert Strategy
- ☒ Insert Link...
- ☒ Target Link
- ☐ Goal
- ☒ Objective
- ☐ Indicator
- ☒ Stress
- ☒ Insert Text Box
- ☐ Create Group Box



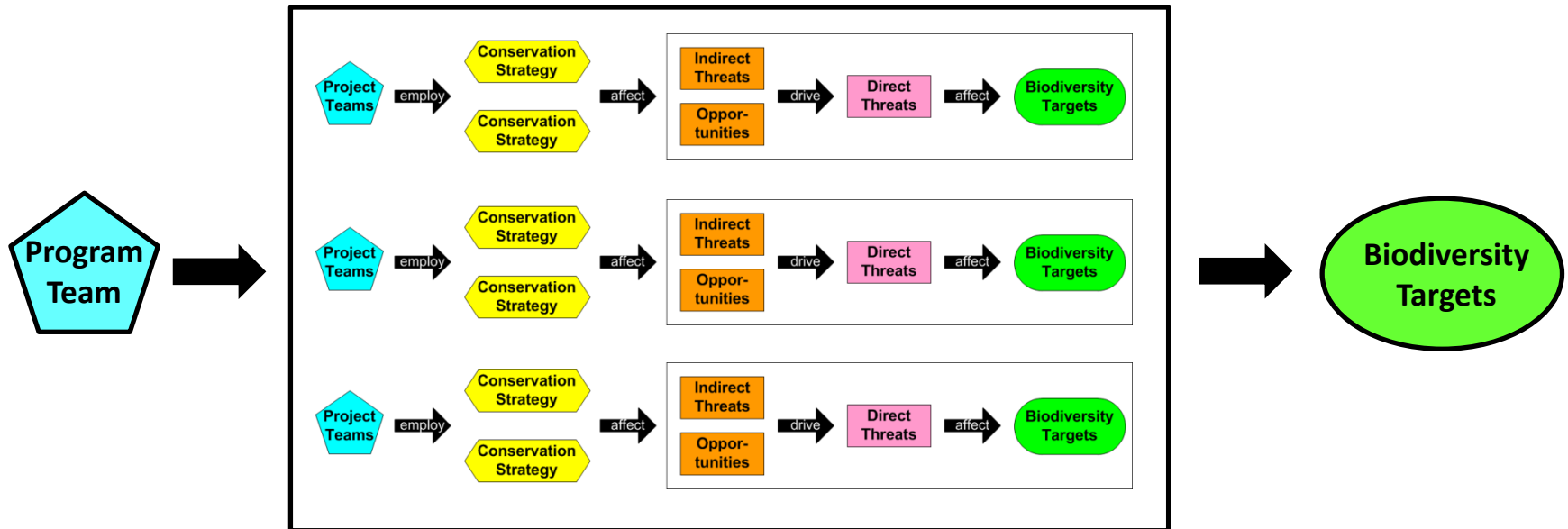
Conceptual Diagram View???



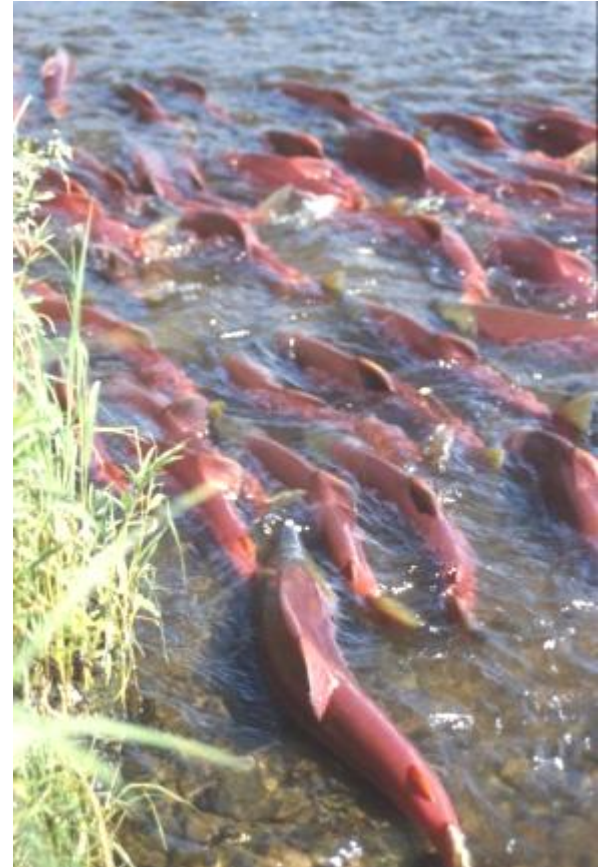
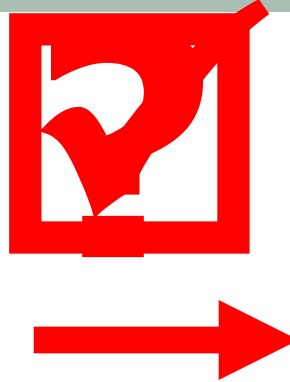
Definition of Conservation Project



Definition of Conservation Program



If We Create a Culture of Data Sharing...



Systematic Review #12

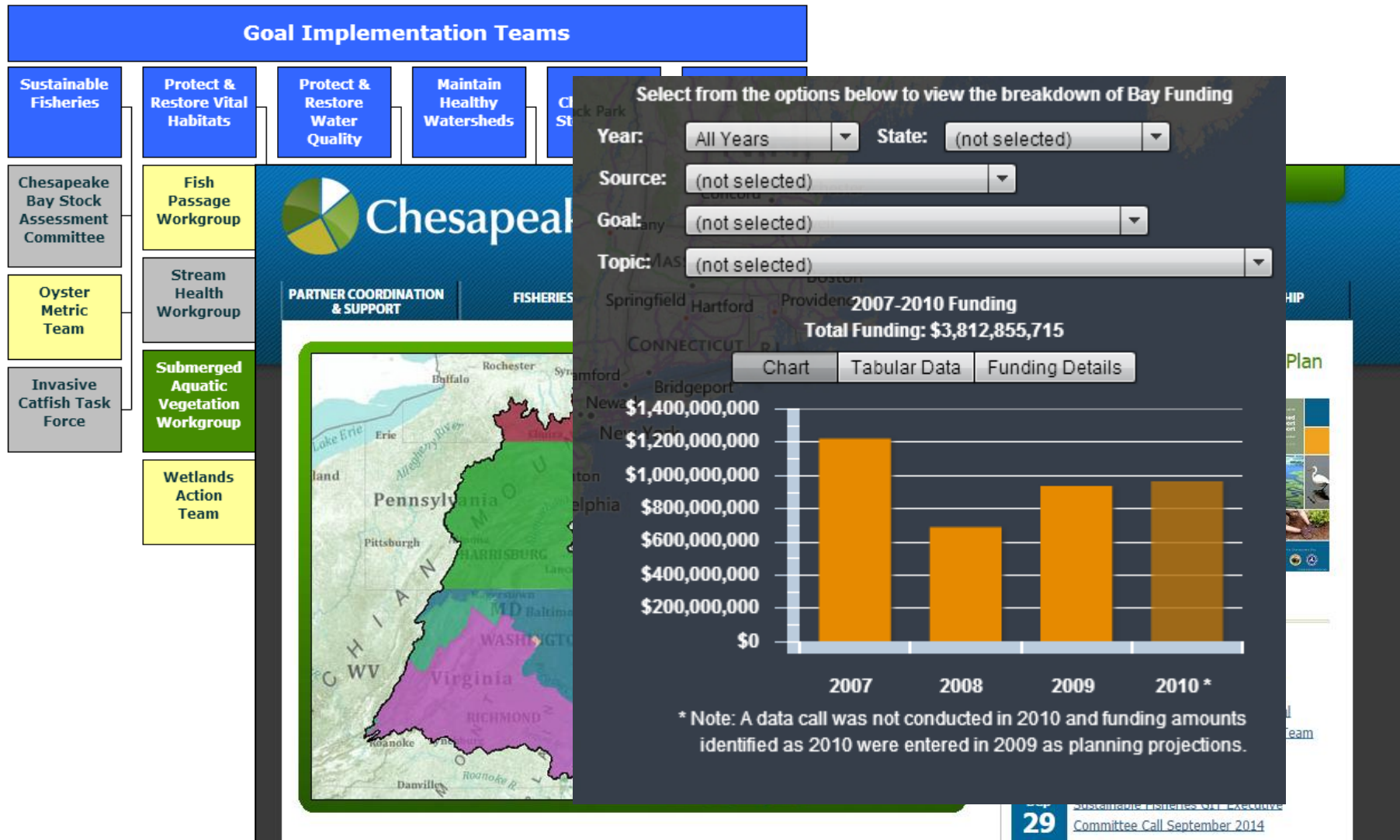
Does the Use of In-Stream Structures and Woody Debris Increase the Abundance Of Salmonids?

Available evidence does not demonstrate an ecologically significant impact of engineered in-stream structures on populations of salmonids...

Available evidence suggests that woody debris does increase the population abundance of salmonids...



Chesapeake Bay Has Many Building Blocks For Good Adaptive Management



More Information



FOSonline.org

nick@FOSonline.org



cmp-openstandards.org



Miradi.org

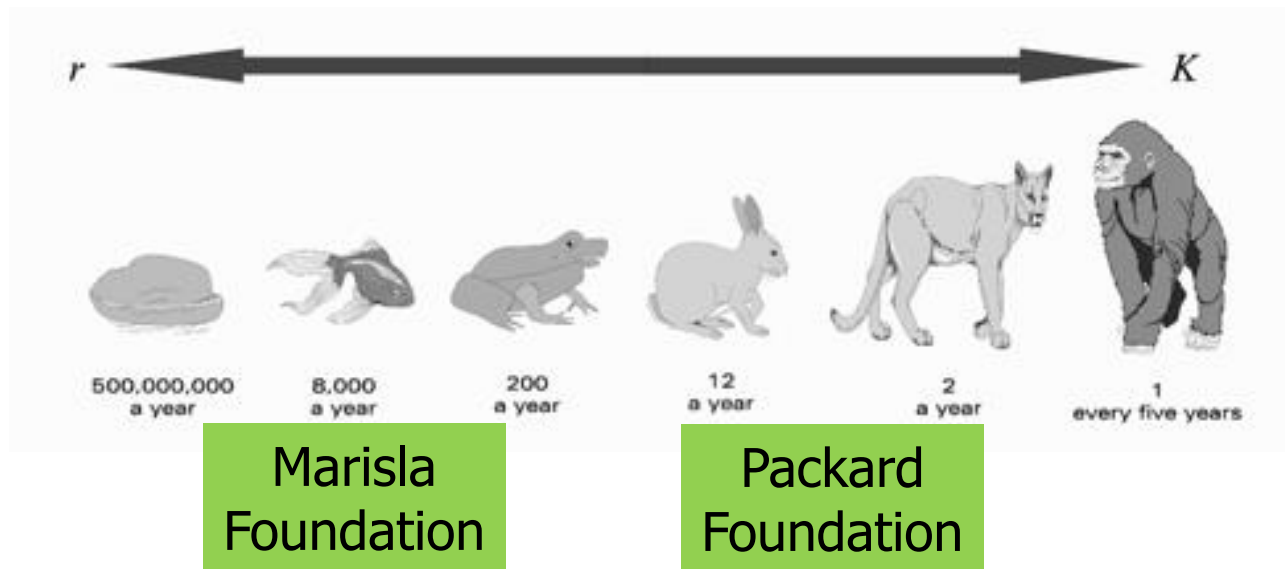


MiradiShare.org

**Free
Trial**



The “Burden of Proof” Depends on Risks, Costs, and Timeframe for Decision Making



Generally Invest More in Adaptive Mngmt When:

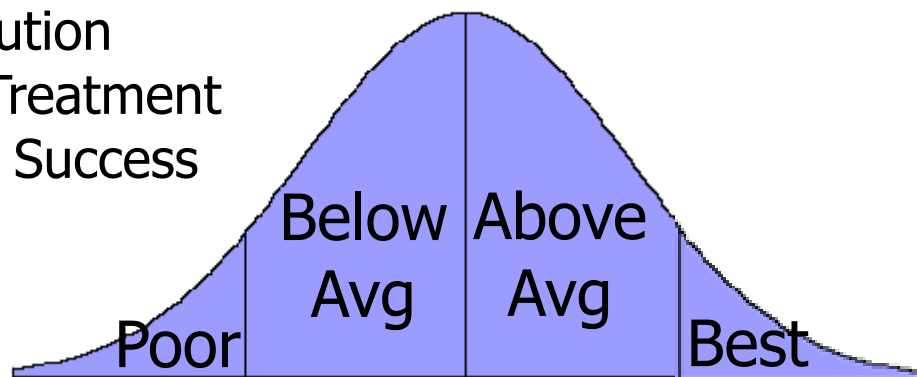
- Stakes are high (high cost of error or inaction)
- Potential to leverage learning
- Costs of measures are low relative to actions



Power of Measuring Effectiveness

The Bell Curve: Cystic Fibrosis

Distribution
of CF Treatment
Center Success



A Surprise – The Best Get Better

It's the centers in the top quartile that are improving fastest....they are at risk of breaking away. What the best may have, above all, is a capacity to learn and adapt – and to do so faster than everyone else.

The Bell Curve Leads to Uncomfortable Questions

Will being in the bottom half be used against doctors in lawsuits? Will we be expected to tell our patients how we score? Will our patients leave us? Will those at the bottom be paid less than those at the top? The answer to all these questions is likely yes.



“How will we demonstrate our achievements...to expand our resources?”



Worthy Cause A



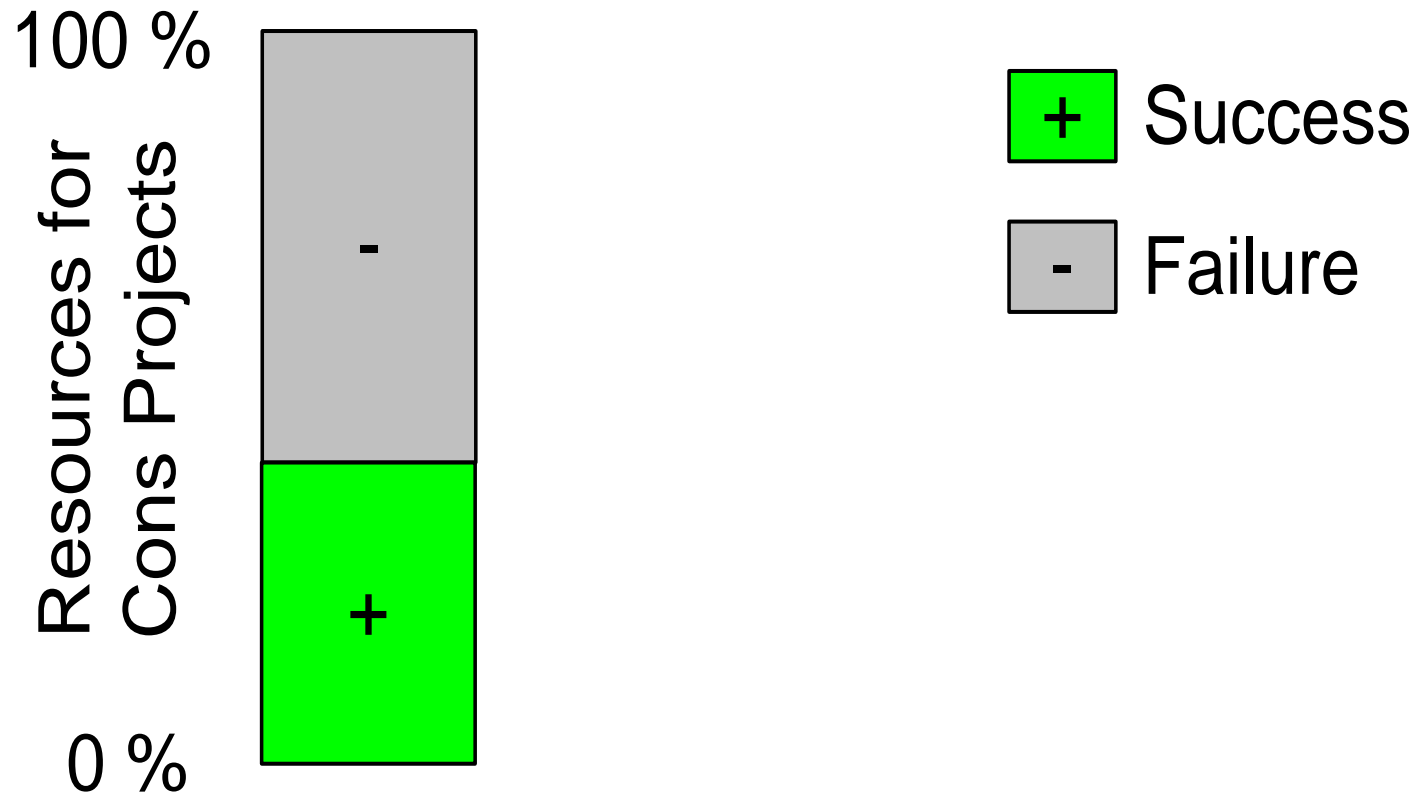
Conservation



Worthy Cause B

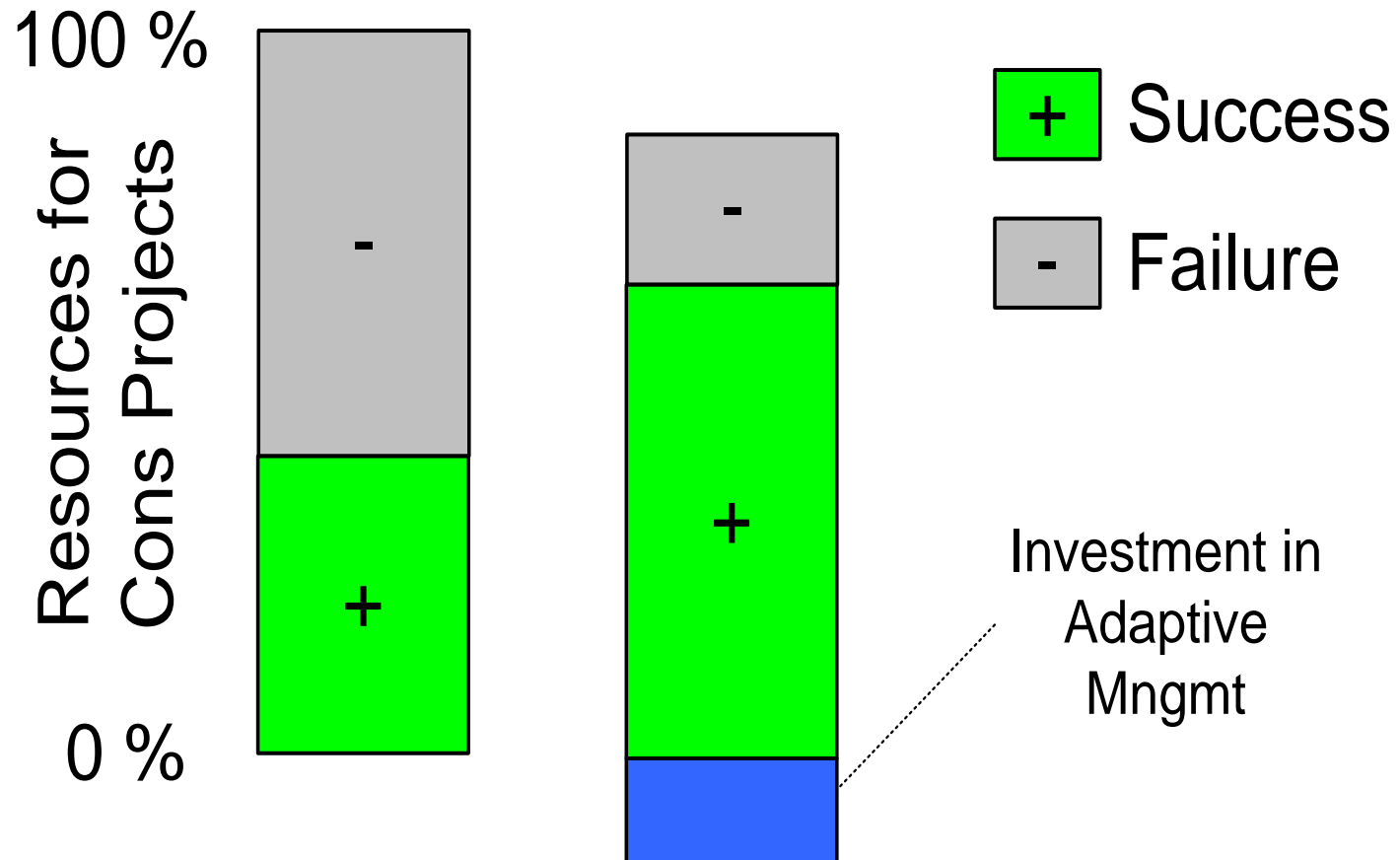


Our Fundamental Hypothesis



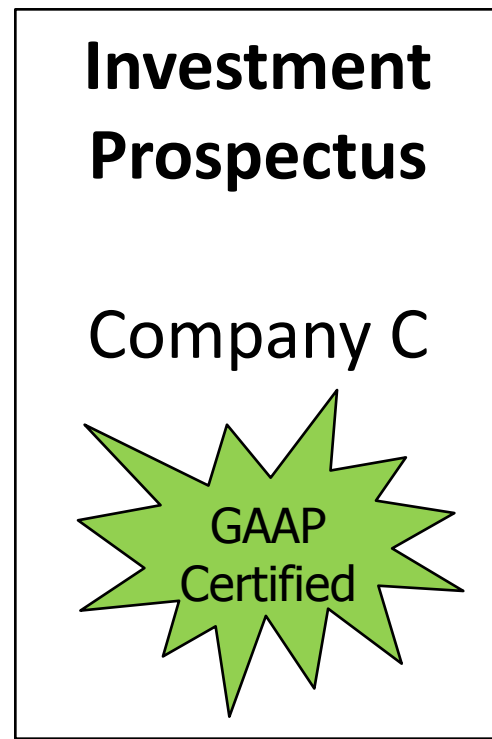
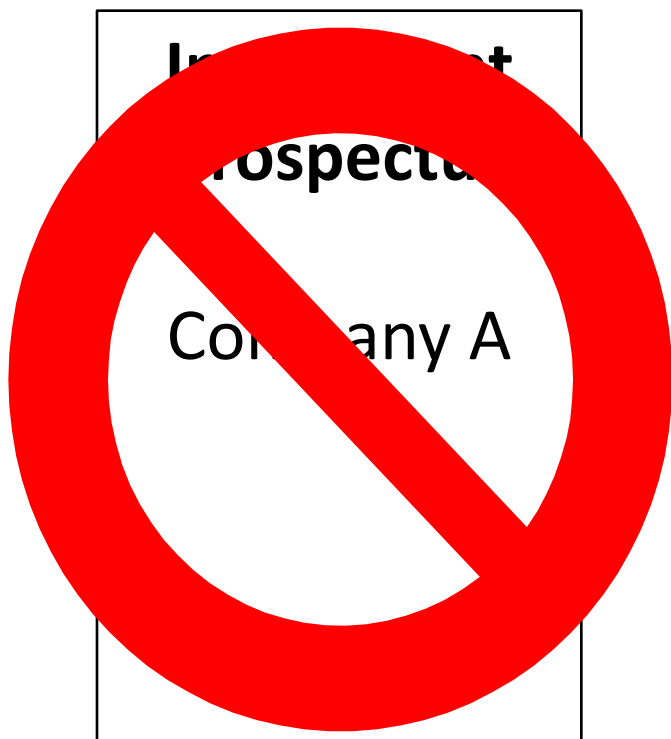


Our Fundamental Hypothesis





“Voluntary” Standards Can Be Powerful Change Agents





Should RBM Be “Mandated?”



imagination at work

[home](#) [innovation](#) [products & services](#)

[Our Company](#)

[Citizenship](#)

[Research &
Development](#)

[Worldwide Activities](#)

[Leadership](#)

[Governance](#)

[Our Culture](#)

[Our History](#)

[Advertising](#)

What Is Six Sigma?

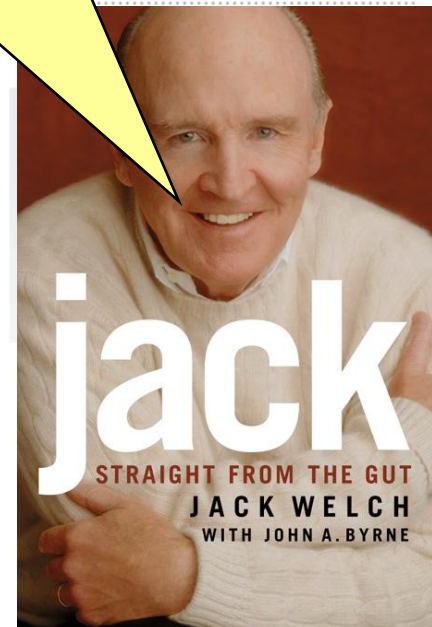
Globalization and instant access to information, products and services continue to change the way our customers conduct business.

Today's competitive environment leaves no room for error. We must delight our customers and relentlessly look for new ways to exceed their expectations. This is why Six Sigma Quality has become a part of our culture.

First, What is Six Sigma?

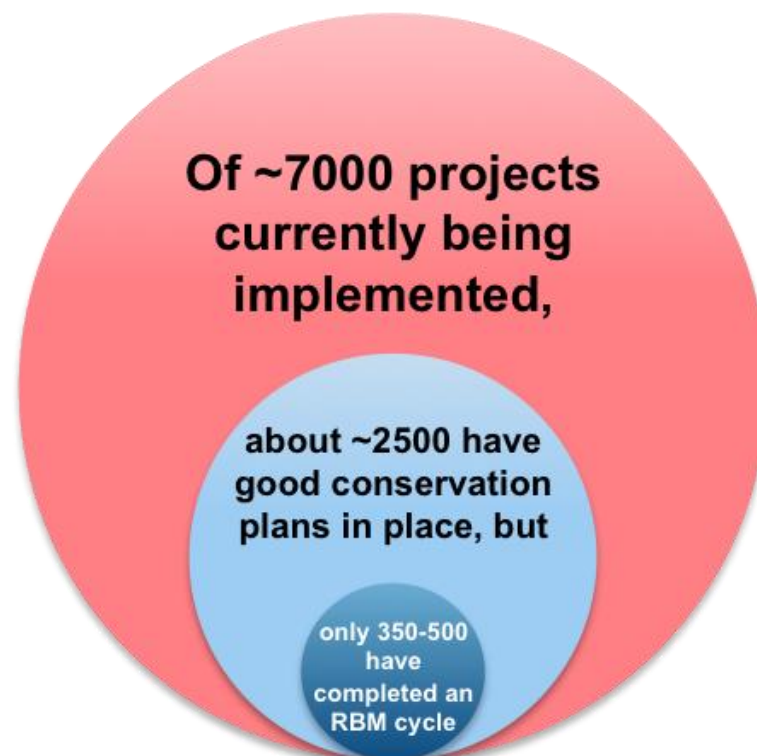
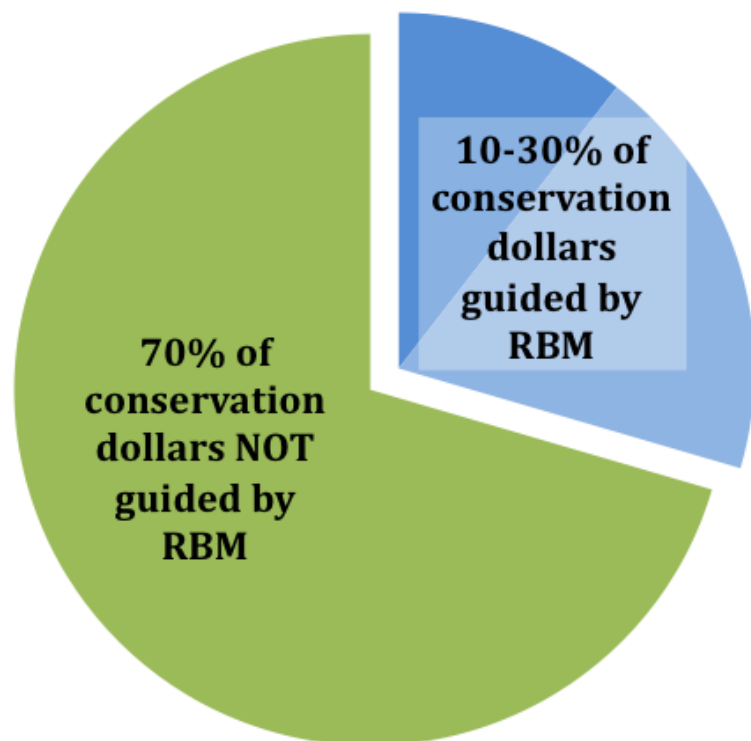
First, what it is not. It is not a secret society, a slogan or a cliché. Six Sigma is a highly disciplined process that helps us focus on developing and delivering near-perfect products and services.

After a guy gave an 'air ball' Six Sigma presentation...the standard joke was that the guy “decided to leave” before his elevator reached the ground floor.





How Are We Doing In Realizing this Vision?

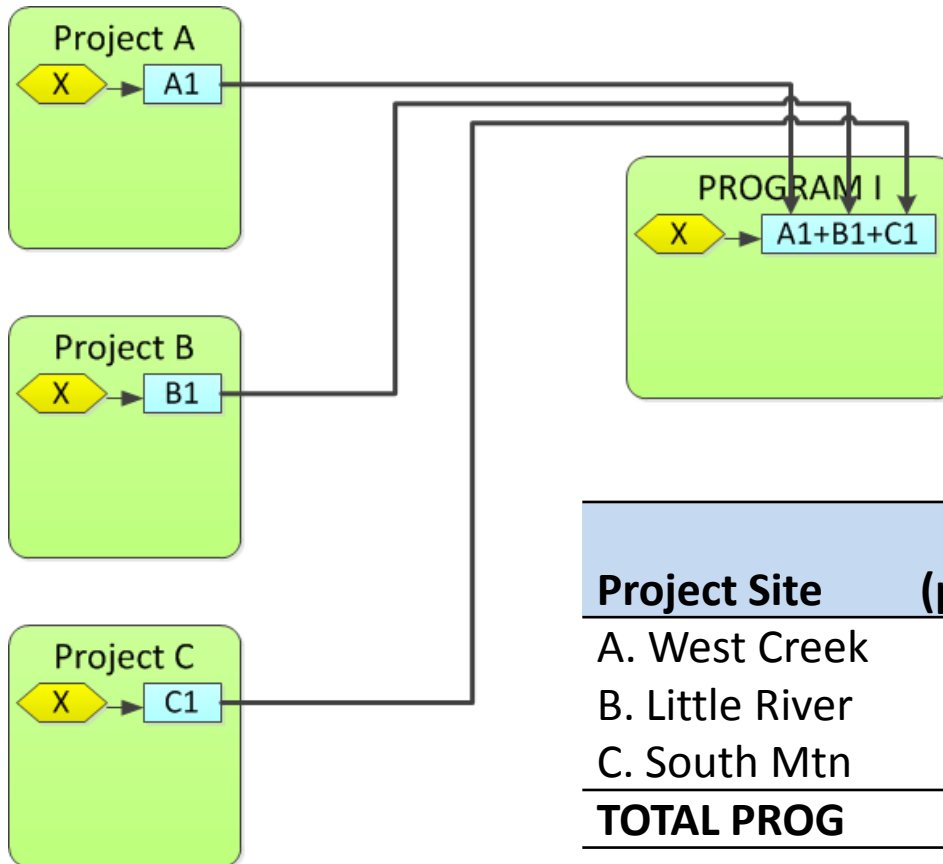


Major Barriers to Good AM

■ Not an issue ■ Minor hurdle ■ Major barrier ■ Extreme obstacle



Rolling Up Performance Measures from Projects to Program Level



Rollup examples:

- # of breeding pairs restored
- km river bank restored
- change in public support for wildlife by county

Project Site	Obj (pairs)	Cumulative Actual (pairs)			Current % Obj
		2013	2014	2015	
A. West Creek	120	0	42	95	79%
B. Little River	165	10	80	170	103%
C. South Mtn	140	15	15	15	11%
TOTAL PROG	425	25	137	280	66%



CA DFW Using Open Standards to Revise State Wildlife Action Plan



Go to: [Mobile Content](#) | [Content](#) | [Footer](#) | [Accessibility](#)

Search

☐ This Site ☐ California

GO

[Home](#) [Recreation](#) [Resource Management](#) [Enforcement](#) [Marine](#) [Spills](#) [Education](#) [Science Institute](#) [Data & Maps](#)

Fish, Wildlife and Habitat Management |

[Home](#) -> [State Wildlife Action Plan](#)

State Wildlife Action Plan: *A plan for conserving California's wildlife resources while responding to environmental challenges*



Overview

California's distinctive topography and climate have given rise to a remarkable diversity of habitats that support a multitude of plant and animal species. In fact, California U.S. and also has the gre in the world. Many of the p valued for recreation and c future for wildlife – and the there is a need for a colla

2015 Update Process

As required every 10 years by the U.S. Fish and Wildlife Service, CDFW is in the process of updating the 2005 plan. The update process will allow

Timeline

Meetings

Contact

Sign up for SWAP News

Conservation actions to achieve the goals of the Plan will be developed using [Open Standards for the Practice of Conservation](#).

>>> [SWAP 2015 Update Vision \(PDF\)](#)

[2005 California Wildlife Action Plan](#)

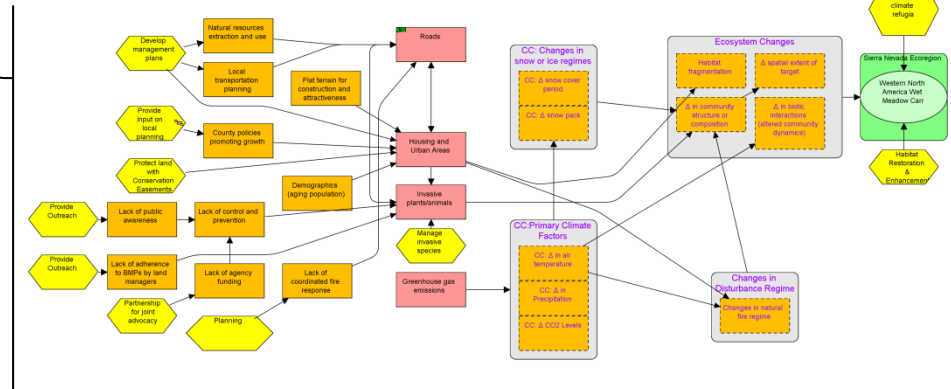
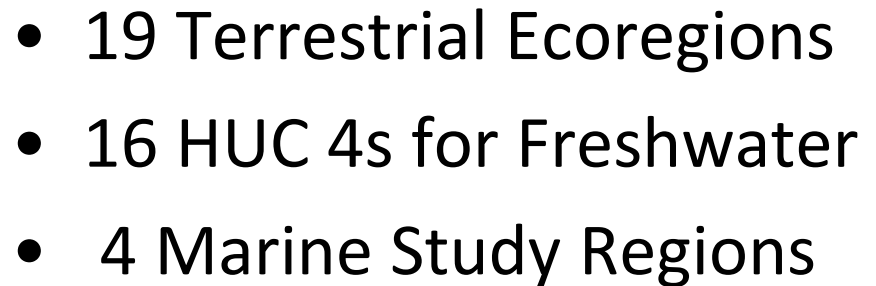
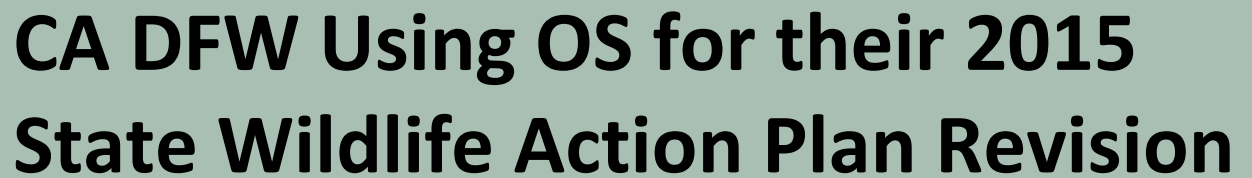
[Fact Sheet \(PDF\)](#)

documents developed by other agencies.

The public will be actively engaged through outreach, scoping and document review.

Conservation actions to achieve the goals of the Plan will be developed using [Open Standards for the Practice of Conservation](#).

>>> [SWAP 2015 Update Vision \(PDF\)](#)



Program Roll-Ups Require Common Project Framework

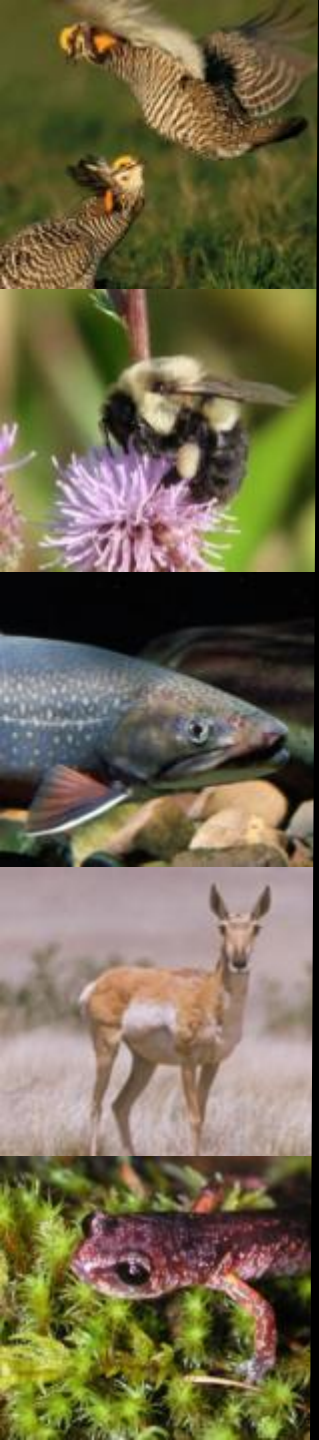


Project:	Ecoregion A	Ecoregion B
Conservation Target:	Mountain Lion	Puma
Indicator:	Breeding pairs	Adults
Measurement:	2/100 km ²	4/38 miles ²

These identical measurements
would not be apparent in a database!!

Products from Reddish Egret Working Group's Planning Process





Using Open Standards to Measure the Effectiveness of State Wildlife Grants





Open Standards for the Practice of Conservation in Puget Sound

The Partnership is working with leaders from many of its partner organizations to improve adaptive management in the region and build a performance framework with which to assess progress toward ecosystem recovery. Through this process we are engaging scientists, policy leaders, decision makers, resource managers, conservation practitioners, communications experts, and other key leaders integral to our success in improving the health of the Sound. We are using the *Open Standards for the Practice of Conservation* (Open Standards) to develop our adaptive management framework and to develop products that will support adaptive management and recovery planning at multiple scales throughout the region.

Developed by leading experts in natural resource conservation work from around the world, the Open Standards provide a framework for strategic planning, evaluation of progress, and learning related to ecosystem recovery (see figure). The Open Standards include specific steps for deciding how to: represent stakeholder interests in an ecosystem, identify and rate pressures on the system, build conceptual cause and effect models of how strategies and actions can address these pressures and ecosystem components, and identify expected results that form the basis for evaluating progress toward ecosystem recovery.

[Partnership Information](#)

[Action Agenda Center](#)

[Performance Management](#)

[Councils/Boards/Panels](#)

[Science and Technical Programs](#)

[Salmon Recovery](#)

[ECO Net](#)

[Oil Spills](#)

[Funding](#)

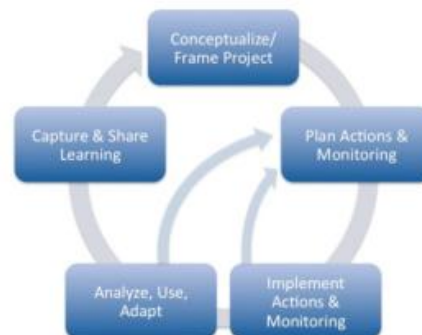
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Sign-up to receive the Partnership's E-newsletter.

[SUBSCRIBE NOW](#)

Puget Sound Partnership Adaptation Cycle*





The Beautiful Lake

*A Binational Biodiversity Conservation Strategy for **Lake Ontario***



Prepared by the Lake Ontario Biodiversity Conservation Strategy Working Group
In cooperation with the U.S. – Canada Lake Ontario Lakewide Management Plan

April 2009

Updated July 2009