Adaptive Management

The Chesapeake Bay Program: Using Adaptive Management to Protect and Restore a National Treasure

Adaptive Management

Adaptive Management is a type of natural resource management in which decisions are made as part of an ongoing science-based process. The Chesapeake Bay Program (CBP) uses this management system to plan, implement and evaluate its restoration efforts.

In simple terms, **adaptive management is "learning by doing"—taking action with acknowledged uncertainties, carefully monitoring outcomes, transparently assessing progress and redirecting efforts when necessary.** It involves testing, monitoring, and evaluating applied strategies, and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society.

Adaptive management helps the Bay Program partnership become more strategic and coordinated in its complex restoration effort. By adjusting management actions based on past performance, Bay Program partners steadily improve implementation and leverage limited resources. This leads to better organizational performance over time.

Results are used to modify management policy, strategies, and practices.

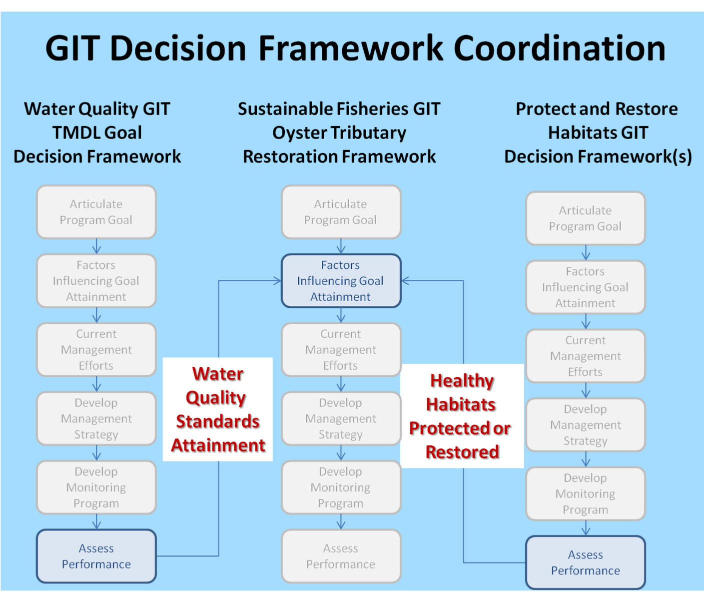
The 6 Common Characteristics of Adaptive Management:
- An iterative, unified planning process that supports continual improvement.
- Emphasis on learning by doing and on experimentation to develop solutions.
- Broad stakeholder participation.
- Development of cross-sector analysis to effectively allocate resources.
- Integrated, comprehensive information management.

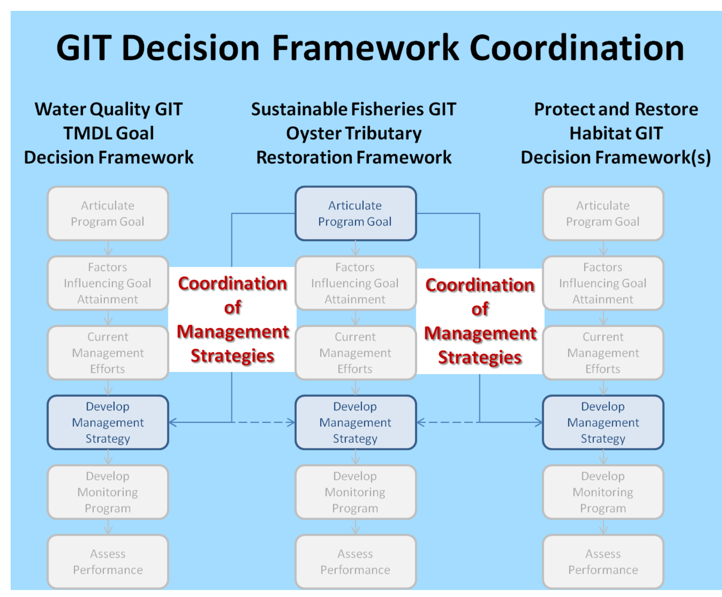
How Adaptive Management Fosters Cross-Ecosystem Collaboration

The CBP's Goal Implementation Teams (GITs) are intended to focus and drive implementation to achieve very explicit progress and results within the scope of their goal area. The six GITs are:
- Sustainable Fisheries
- Protect & Restore Vital Habitats
- Protect and Restore Water Quality
- Maintain Healthy Watersheds
- Foster Chesapeake Stewardship
- Enhance Partnering, Leadership, & Management Decision

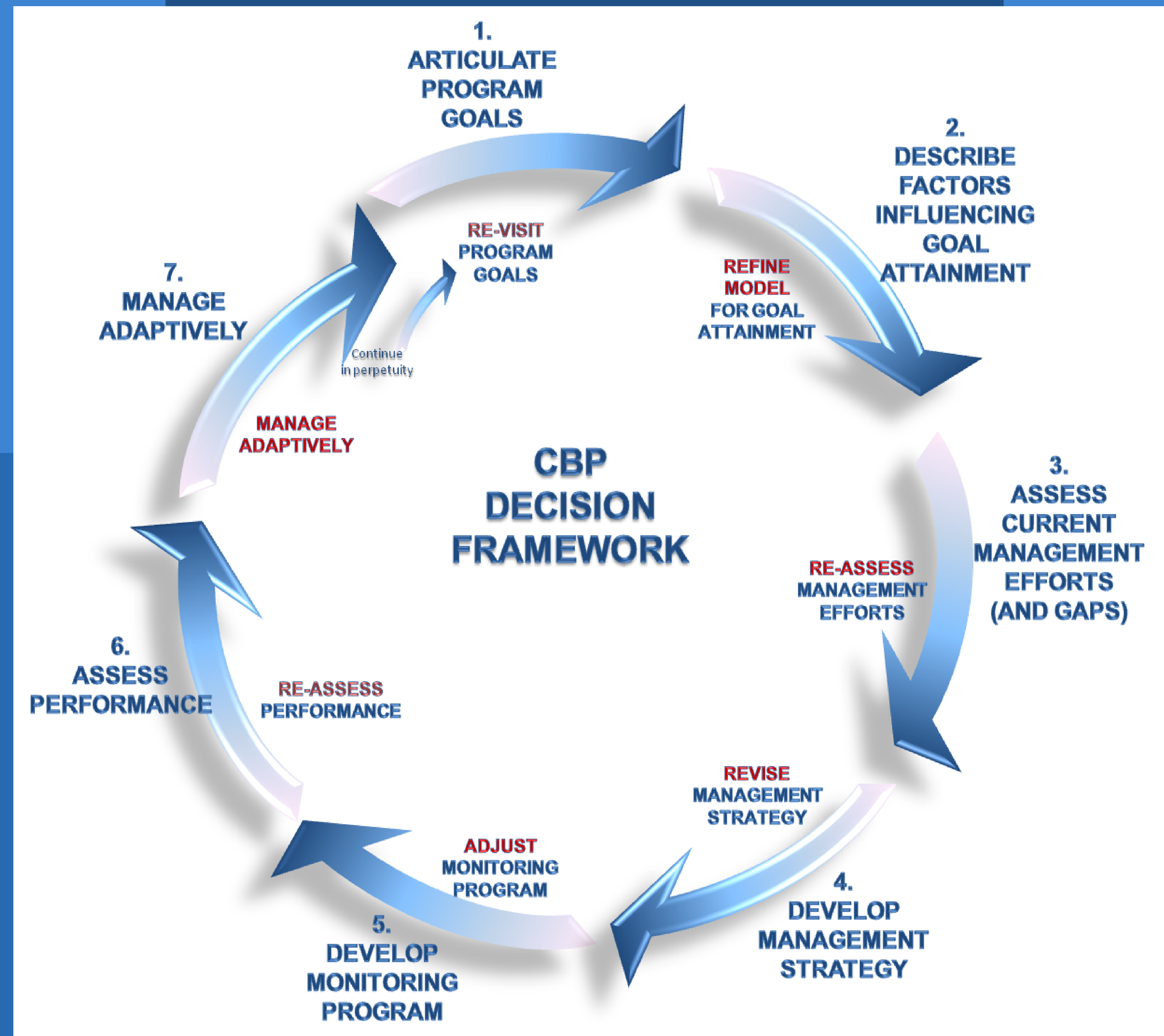
Historically, these teams worked independently with minimal interaction or cross media cooperation. The Decision Framework helps provide a common *nomenclature* for inter-GIT communication and collaboration. The framework helps us look across the CBP's ecosystem-based goal teams for collaborative opportunities to support efforts affecting a particular goal.

For example, (illustrated in the diagram below), we know from the Decision Framework developed for the Fisheries GIT that two of the major obstacles or factors affecting goal attainment for oyster tributary restoration are poor water quality and habitat. Working together in "cross-GIT collaboration sessions" team members can help brainstorm possible solutions and collaborative opportunities such pursuing wetland protection and restoration or underwater grass restoration projects. Similarly, the Water Quality team might offer support for helping identify/narrow tributaries with potential for restoration or seek project prioritization or funding opportunities.





Benefits of using a Decision Framework for Adaptive Management:
- Clearer understanding of goal intent
- Transparency and accountability
- Practicality of goals
- Identification of missed factors
- Focused scope of activities
- Consistent and comprehensive documentation of program activities
- Identification of coordination needs and opportunities



How the CBP Implements Adaptive Management

The Chesapeake Bay Program developed a simple, seven step guide— the CBP Decision Framework—to help guide and coordinate the partnership's activities and implement a system-wide adaptive management program. The Decision Framework is a tool for development of the essential logic that must underpin any successful environmental management program. It is designed to address two issues: the need for transparency and accountability, and a need to effectively implement adaptive management.

The process begins at the organization's "Goal Implementation Team" (GITs) level and moves up through the Partnership's organizational structure, where this work can be integrated and coordinated throughout the partnership.

The CBP Decision Framework is a fluid and ongoing seven-step process starting with each GIT assessing their goals:
1. **Articulate program goals:** Identify the goals the GIT is working towards.
2. **Describe factors influencing goal attainment:** Identify and prioritize all factors that influence progress toward a goal. This step can help identify areas for collaboration across GITs.
3. **Assess current management efforts (and gaps):** Identify gaps and overlaps in the existing management programs that address the important factors affecting goal attainment.
4. **Develop management strategy:** Stakeholders coordinate and implement planning.
5. **Develop monitoring program.**
6. **Assess performance:** Criteria for success and failure of management efforts should be known when the strategy is developed and the monitoring program is designed. This is the analysis that informs program adaptation and next steps.
7. **Manage adaptively:** Based on the monitoring assessment, system models are amended and monitoring strategies are revised to improve program performance.

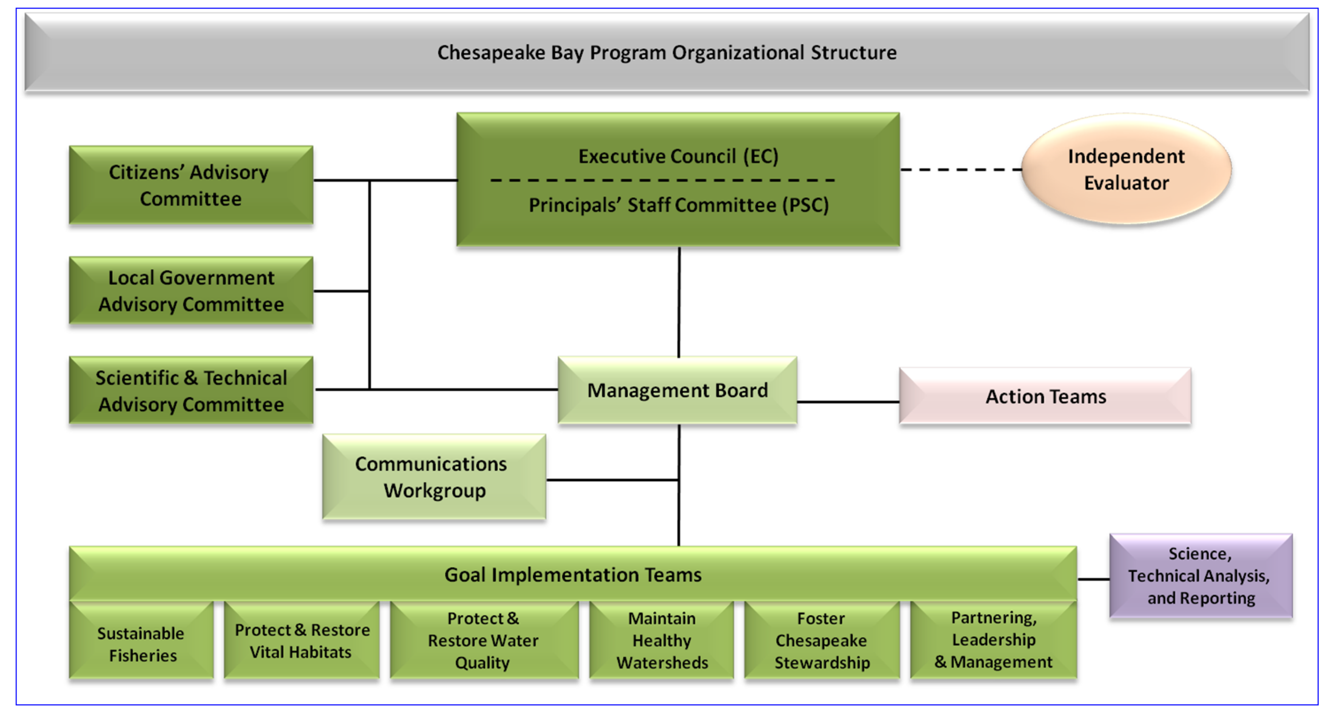
This framework ultimately provides the basis for coordination, collaboration and development of a program-wide strategy.

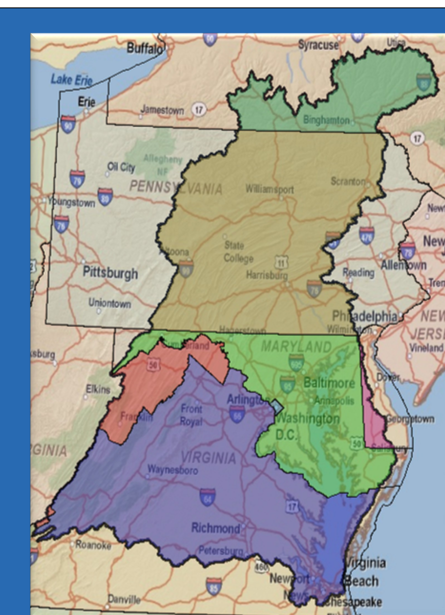
About the Chesapeake Bay Program

The Chesapeake Bay Program (CBP) is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. The CBP was built upon the idea that federal and state governments need to collaborate to fully restore the Bay's health. The Bay Program partnership brings together leaders and experts from a vast range of groups to achieve a shared vision of a healthy Bay.

The Chesapeake Bay Program partners include the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the Environmental Protection Agency, representing the federal government; and several participating advisory groups, including:
- Approximately 1,800 local governments, represented through the Local Government Advisory Committee
- More than 20 academic institutions, represented through the Scientific and Technical Advisory Committee
- More than 60 non-governmental organizations, including businesses, non-profits and advocacy groups

The "headwater" states of Delaware, New York, and West Virginia joined the partnership through MOUs from 2000-2002.





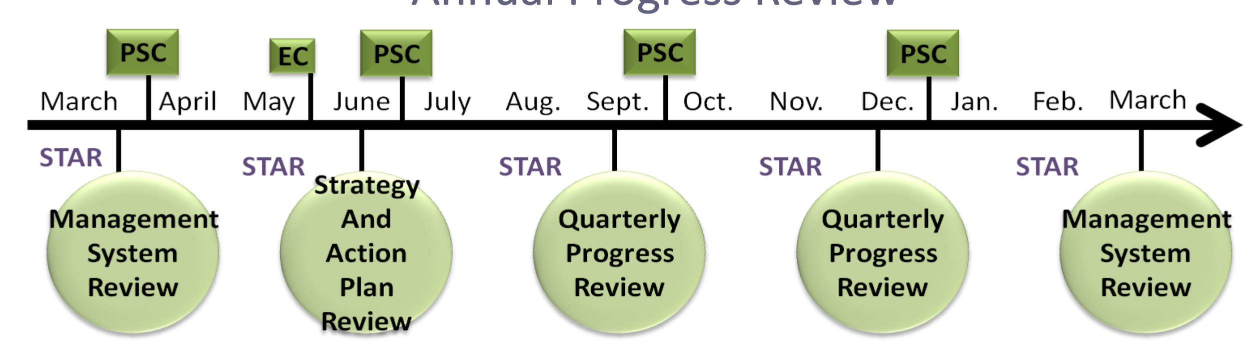
- Largest estuary in North America
- Land-to-water ratio: 14:1
  - Largest of any coastal water body in the world.
- 6 states and Washington, DC
  - About 1,800 local governments
- Economic value: ~$1 trillion
  - Estimated 77,000 farms
  - Seafood, recreation, tourism
- Home to almost 17 million people
  - 150,000 more/year
- 3,600 of fish, wildlife, and plants

Integrating Adaptive Management into Annual Strategic Planning

The GITs began implementing the Decision Framework in 2012 with the help of CBP's Scientific, Technical Analysis and Reporting (STAR) team which provides science support including modeling and monitoring to help GITs implement adaptive management. The next step for the partnership will be to establish a systematic program review. An annualized quarterly schedule will allow the GITs and Management Board to use the outputs of the Decision Framework in a predictable management process that engages the GITs in shared strategic decision making. At quarterly meetings, GITs would have the opportunity to review their strategies and discuss progress and results. These reviews will allow the CBP leadership to evaluate performance, address problems and short-term barriers to progress, identify areas of coordination with other GITs, and allow for strategy adjustments based on learning or changes in the external environment.

Management System Review integrates an evaluation of the following:
- Mission, vision, and values
- Key conclusions from the end of year report
- Results of external auditors
- Performance versus milestones
- Needed changes for the future

Annual Progress Review



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