Program Performance and Tracking

Performance Measures Development and Implementation

CALFED BDPAC/Authority Meeting

June 20 – 21, 2007

"It's always fun to do the impossible."

– Walt Disney

Program Performance and Tracking

The Last Six Months

WHO

- BDPAC Program Performance and Financing Sub-Committee, CALFED Program Staff
- Implementing Agency Staff and CALFED Program Staff
- Implementing Agency Prospective Performance Sub-Committees, ISB Liaisons, CALFED Program Staff

WHAT

- Retrospective Program-wide Assessment
- Project Performance Information, Supporting Cross-Cut Budget
- Initial and Refined Prospective Measures

Retrospective Program Assessment

BDPAC Program Performance and Financing Sub-Committee

Demonstration

CALFED Project Performance Information Website

http://192.168.0.36/PerformanceTracking/projectsbyobjective.aspx?year=8

Prospective Performance Measures

Implementing Agency Performance Measures Teams

Current Status ➤ **Phase 1 – Develop Initial Measures and Planning:**

- ✓ Establish initial (sample) set of performance measures
- ✓ Develop initial implementation plan

Through June 2008 ➤ **Phase 2 – Refine Initial Measures and Reporting:**

- ✓ Refine conceptual models and targets
- ✓ Conduct initial data collection, analysis and reporting

Through June 2009 ➤ **Phase 3 – Develop Complete Measures and Planning:**

- ✓ Link to refined goals and objectives identified
- ✓ Develop full implementation plan

Through June 2010 ➤ **Phase 4 – Refine Complete Measures and Reporting:**

- ✓ Refine full suite of measures, models, and targets
- ✓ Conduct full data collection, analysis and reporting
- ✓ Further refine and integrate – adaptive management

⬌

Integration

- ➤ Delta Vision
- ➤ BDCP
- ➤ DRMS
- ➤ DRERIP
- ➤ CMARP

Prospective Performance Measures

Report by Agency Sub-Committee Representatives

Water Quality

Water Quality

Overall Goal

Continuously improve Delta Water Quality for all uses including in-Delta environmental and agricultural uses.

- Drinking Water
- Toxicity (aquatic life uses)
- Mercury (human & wildlife consumption uses)

Water Quality

Drinking Water

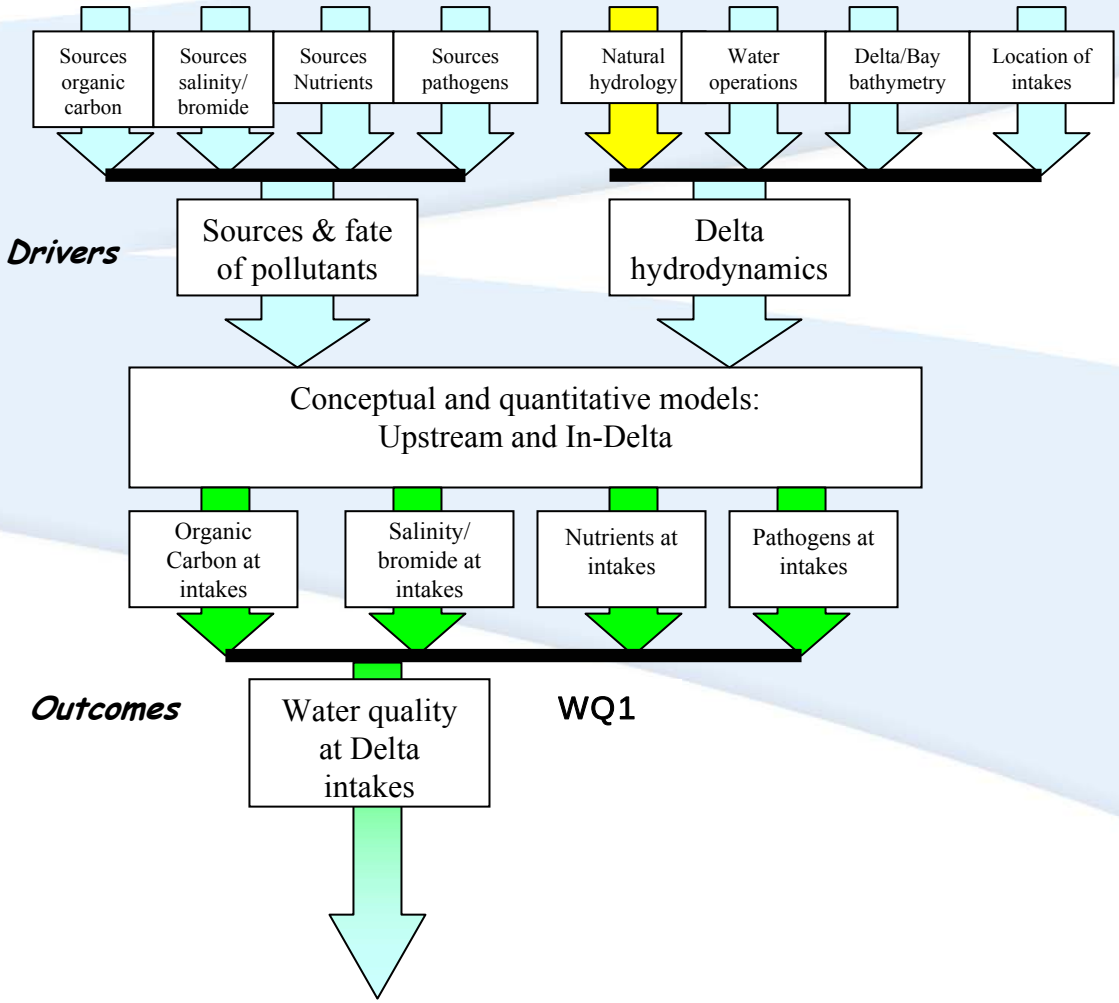
Objectives
Improve Delta water quality for drinking water uses at the intakes (**source water**)
Provide safe, reliable, affordable drinking water using a cost-effective combination of alternative source waters, source control and treatment technologies (**tap**)

Performance Measure	*Target*
➢ Annual averages of organic carbon and bromide at Delta intakes	➢ 50 ug/L bromide, 3 mg/L total organic carbon…
➢ …or Equivalent Level of Public Health Protection (ELPH)	➢ Under development through technical studies

Information & Monitoring Needs
➢ Drinking water constituents of concern upstream of Delta boundaries
➢ Conduct studies to improve understanding of the linkage between source water quality, water quality at the intakes, and treated water quality

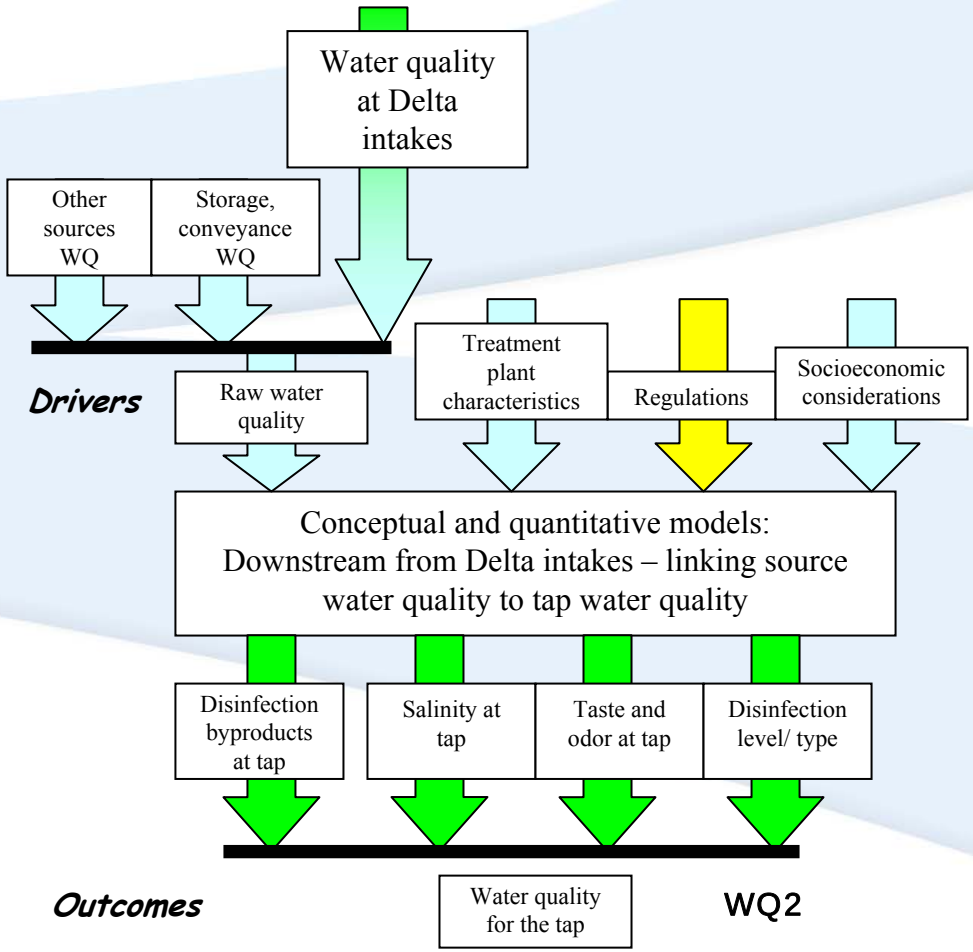
Water Quality

Drinking Water – Conceptual Model @ Source



Water Quality

Drinking Water – Conceptual Model @ Tap



Water Quality

Toxicity

Objectives
Reduce toxicity to aquatic organisms in water and sediments
Improve methods for identifying causes of toxicity

Performance Measure	*Target*
➢ Toxicity to aquatic test organisms (water or sediment)	➢ No toxicity from controllable sources
➢ Tools for identifying causes and sources of toxicity are added to the currently available suite	➢ All causes & sources of toxicity of high magnitude, duration & frequency identified

Information & Monitoring Needs
➢ Gather & analyze toxicity monitoring and research data collected since 2001
➢ Comprehensive monitoring for toxicity in the Delta and upstream tributaries
➢ Conduct studies to improve tools for identifying causes of toxicity

Water Quality

Mercury

Objectives
Reduce mercury in water, sediments and biota to levels that do not adversely affect aquatic organisms, wildlife, and human health
Reduce exposure to mercury from consumption of Bay-Delta fish to levels that will protect humans from adverse health effects

Performance Measure	*Target*
➢ Mercury in fish tissue and methylmercury in water	➢ Draft in TMDL
➢ Human consumption of Bay-Delta fish	➢ Mercury concentrations in biological samples
➢ Awareness of health risks	➢ Surveys, interviews, focus groups, etc.

Information & Monitoring Needs
➢ Inventory data sources for indicators identified in Phase 1 and gather and analyze priority data sets
➢ Use available data to expand on human health risk sites

Water Quality

Implementation Plan – Next Steps

Next Steps	*Target Date*
➢ **Drinking water** policy technical studies	➢ Mid to late 2008
➢ CALFED **Drinking Water** Quality Program final assessment	➢ Late 2007
➢ Analyze existing water column and sediment **toxicity** data	➢ FY 07-08
➢ Refine **toxicity** conceptual models	➢ Fall 07
➢ Conduct studies on biomarker indicators of **toxicity**	➢ 07-08
➢ Total mercury and methyl mercury technical studies	➢ Ongoing: Some projects complete in mid-2008

Water Supply

Water Supply

Strategic Objectives

(1) Enhance Stability of Delta Water Supplies

- Meet the regulatory and contractual commitments for the protection of water quality and ecosystem restoration
- Increase certainty of deliveries in the short-term
- Increase certainty of deliveries in the long-term

(2) Enhance End User Reliability

- Integrated Regional Water Management

Water Supply

Enhance Stability of Delta Water Supplies

Objective
Meet the regulatory and contractual commitments for the protection of water quality and ecosystem restoration

Performance Measure	*Target*
➢ **Annual number of incidences when water quality standards, environmental water quality, flow requirements, or other agreements related to SWP and CVP Delta operations are not met**	➢ **Zero incidences of not meeting standards**

Information & Monitoring Needs
➢ **SWP and CVP operations data**
➢ **Operational, environmental and M&I water quality data**

Water Supply

Enhance Stability of Delta Water Supplies

Objective
Increase the certainty of Delta water deliveries in the short-term

Performance Measure	*Target*
➢ **Acre-feet of unexpected reductions in scheduled deliveries**	➢ **Zero unexpected delivery reductions**

Information & Monitoring Needs
➢ **Spring project delivery schedules**
➢ **Actual delivery data**

Water Supply

Enhance Stability of Delta Water Supplies

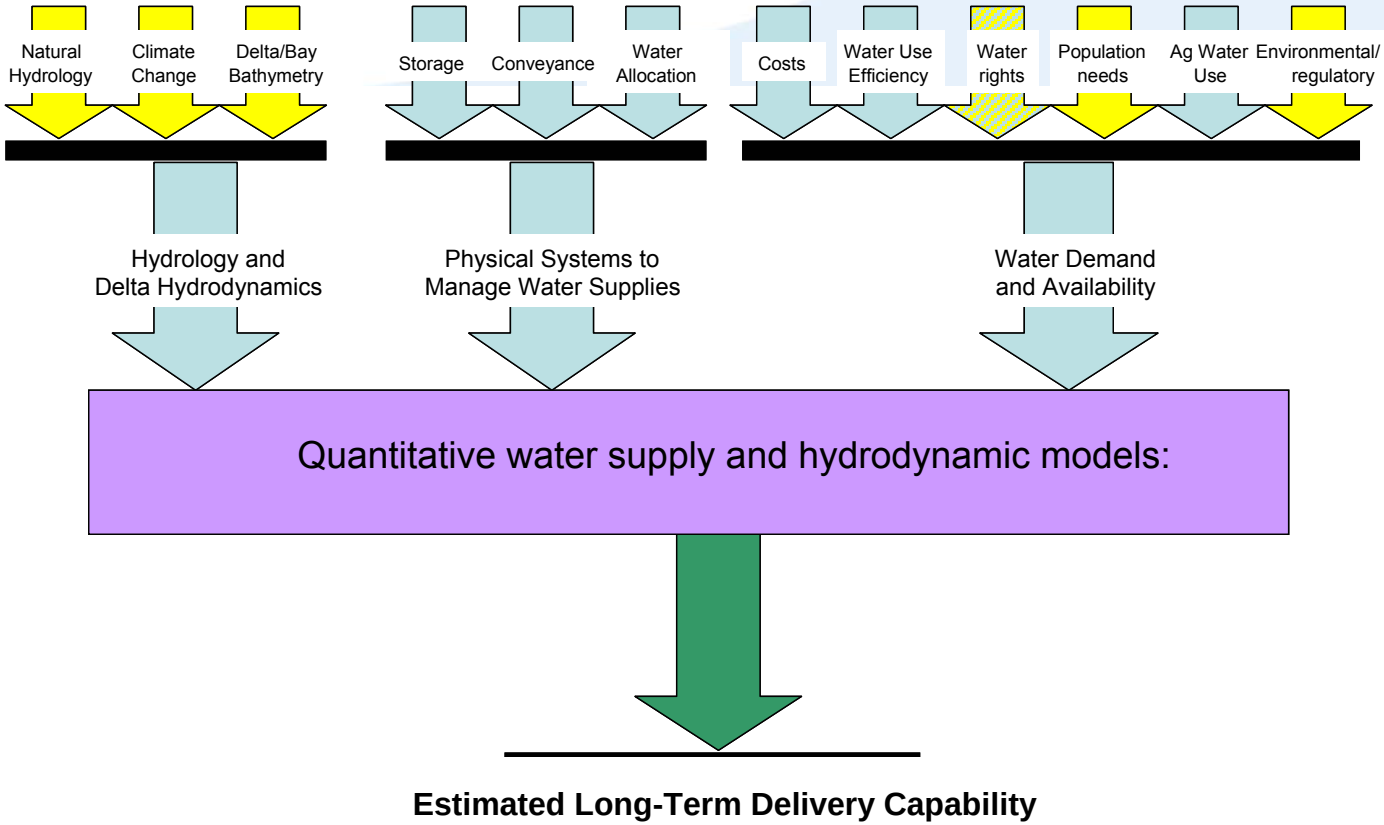
Objective
Increase the certainty of Delta water deliveries relative to any given long-term delivery capability estimate

Performance Measure	*Target*
➢ **Long term delivery capability estimates**	➢ **Actual deliveries similar to any given estimated delivery capability**

Information & Monitoring Needs
➢ **Develop long-term estimated delivery capability based on facility capacities, hydrology, operational constraints, future policies/actions …**
➢ **Multiple future operational scenarios can be developed**

Water Supply

Enhance Stability of Delta Water Supplies



Water Supply

Enhance End User Reliability

- To be administered by DWR and other agencies largely through the California Water Plan update (CWPU) process and coordinated with the CALFED Program.
- Specific performance measures and targets will be developed in cooperation with local and regional agencies, in consideration of statewide and regional water management objectives
- The CWPU process will host 8 regional workshops in 2007 and 16 additional workshops will be held throughout the state during 2008 and 2009.
- Although derived through local initiatives, implementing agencies will apply and report on regional performance measures to CALFED

Water Supply

Implementation Plan – Next Steps

Next Steps	*Target Date*
➢ **DWR and USBR to develop internal framework for reporting and coordinating results with CALFED Performance measures team**	➢ **Fall 2007**
➢ **Minimize gaps, avoid conflicts and seek seamless integration between all performance measure groups**	➢ **2007-2008**
➢ **Coordinate with the California Water Plan update, Delta Vision, and DRMS processes to include Delta risk management and Delta sustainability information**	➢ **Ongoing**
➢ **Track BDCP, OCAP and other processes and incorporate any new regulations and/or agreements that pertain to SWP and CVP**	➢ **Ongoing**

Levee System Integrity

Levee System Integrity

Overall Goal

To reduce the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic breaching of Delta levees.

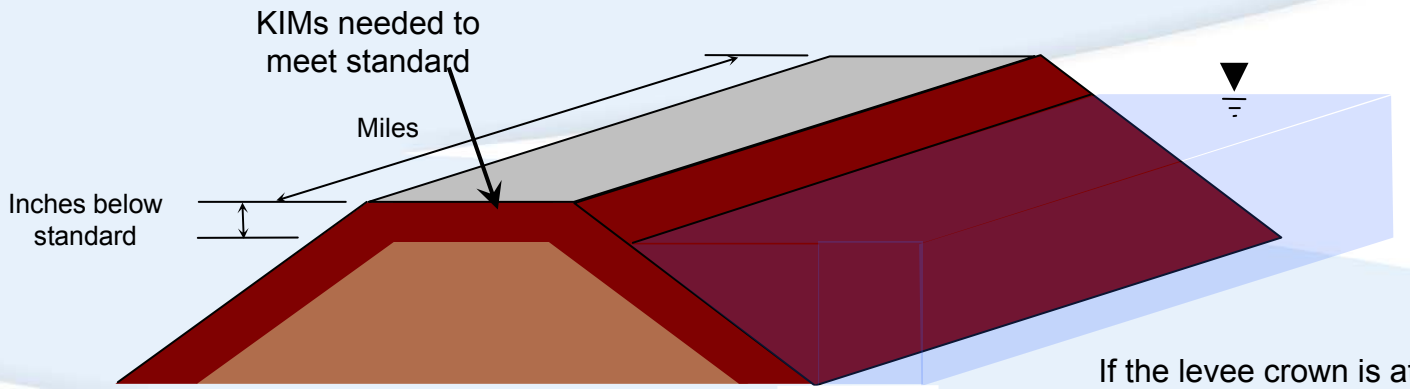
Levee System Integrity

Objective
Improve and maintain Delta levees to the Public Law 84-99 (PL 84-99) standard.

Performance Measure	*Target*
➢ KIM (Kilo-Inch-Mile) (An overall measure of net work to achieve PL 84-99 standard)	➢ KIM=0 (A Zero KIM Target represents that there is no additional work to be done to meet the standard)
➢ RKIM (Risk-adjusted-Kilo-Inch-Mile) (A measure of risk associated with inadequate and sub-standard levee maintenance	➢ RKIM=0 (A Zero RKIM Target represents no risk)

Information & Monitoring Needs
➢ LiDAR establishes a baseline for KIM & RKIM. Delta surveyed in January 2007 and will be reduced and available in August.

Levee System Integrity



KIM (Kilo·Inch·Mile) = Inch x Miles x 1,000

If the levee crown is at the height of the named standard then KIM = 0

Levee System Integrity

Objectives
Improve and maintain levees to a level commensurate with the benefits provided.

Performance Measure	*Target*
➢ Number of levee miles or islands with enhanced, above PL84-99, flood protection	➢ There are about 500 miles of levees in the Delta, including more than 400 miles of project levees, in the Delta at or above the PL 84-99 standards.
➢ Number of miles with electro-magnetic conductance anomalies quantified	➢ We offer reimbursements to the districts participating in the Electromagnetic Survey program. To-date, m*ore than 20 LMA have chosen to take advantage of this program and about 400 miles of levees have been quantified. The target is 700 miles by end of 2007.*

Information & Monitoring Needs
Additional funding for FY 2007-08 will assist DWR to accomplish its goal.

Levee System Integrity

Objectives
Reduce or eliminate the risk to the levee system from subsidence

Performance Measure	*Target*
➢ Acreage of islands/tracts with subsidence control measures in areas that affect levee stability	➢ Subsidence control is continuous work in the Delta. *Some subsidence reversal efforts are being planned for Sherman & Twitchell islands, which totals about 700 acres.*

Information & Monitoring Needs
We are working on a comprehensive subsidence reversal plan.

Levee System Integrity

Objectives
Enhance existing emergency management and response capabilities to protect critical Delta resources in the event of a disaster.

Performance Measure	***Target***
➢ Improvements to emergency response	➢ *The Flood Operations Center is preparing an Emergency Operations Plan for the Delta. They are considering single and multiple breaches and formulating a flood fighting plan. We are also providing SEMS training for staff*. Additionally, staff has been able to form a regional emergency response committee with county and city officials being active participants.

Information & Monitoring Needs
EOP for the Delta is being developed.

Implementation Plan

Next Steps

Next Steps	*Target Date*
➢ Periodic LiDAR Surveys	➢ every 5-7 years
➢ Use relevant information from DRMS study to apply towards developing RKIM risk analysis and refining Performance Measures	➢ 2008-09
Develop and refine PMs and conceptual models to link drivers and outcomes	Ongoing
➢ Develop and refine targets (based on DRMS)	➢ 2007
➢ Develop KIM and RKIM baseline	➢ 2007
➢ Identify linkage with other CALFED programs.	➢ 2007-08
➢ Develop web-based reporting system	➢ 2007

Ecosystem Restoration

Ecosystem Restoration

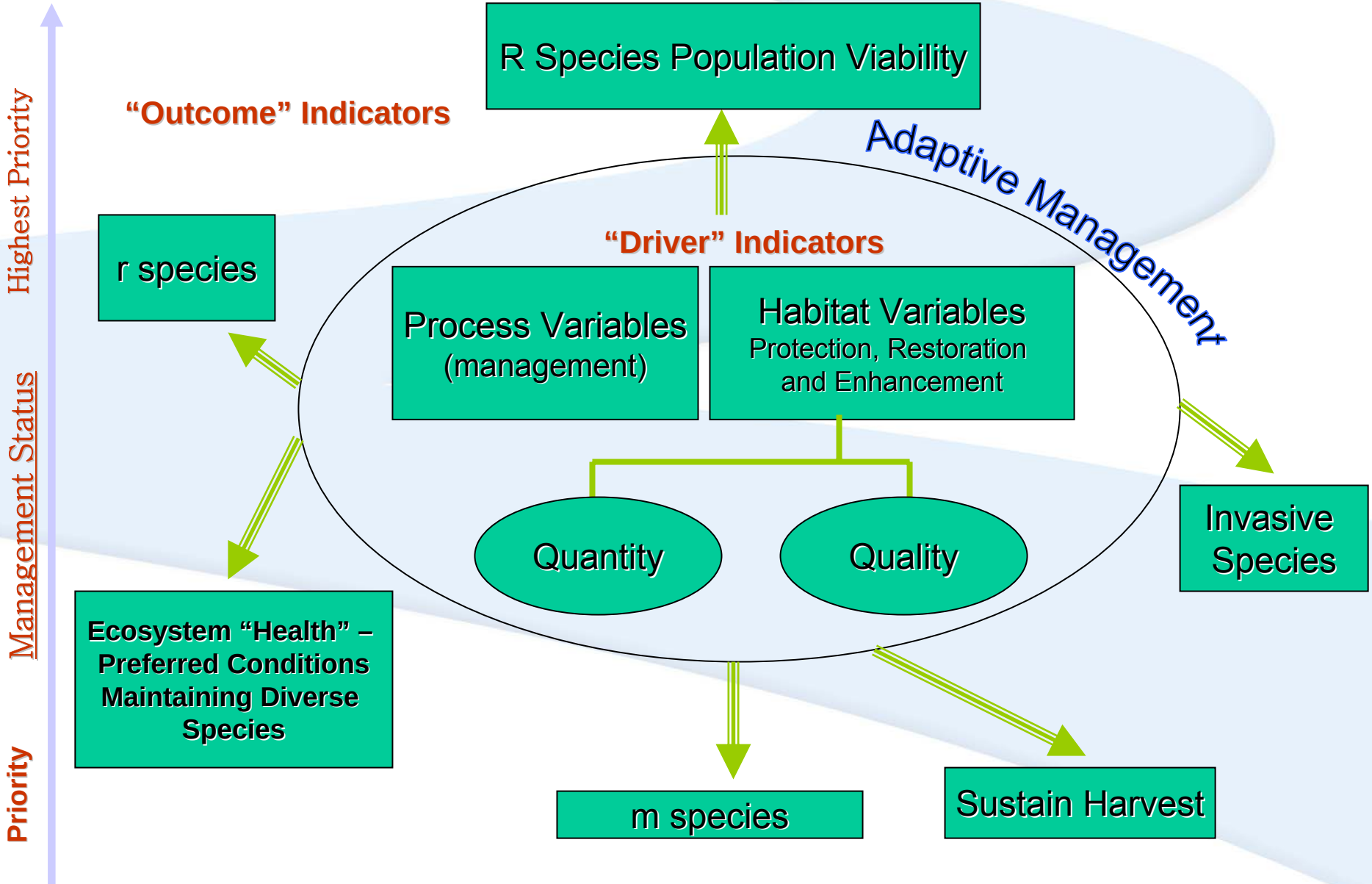
Overall Goal

To achieve species recovery for plant and animal populations through restoration of ecological processes and improvement and increase in extent of suitable habitat types.

- paraphrased from MSCS

- Sustainable populations of native species (through ecosystem restoration)
- Control of invasive species
- Reduction and elimination of contaminant impacts
- Maintain biodiversity

Ecosystem Restoration: Performance Measures Framework



Ecosystem Restoration

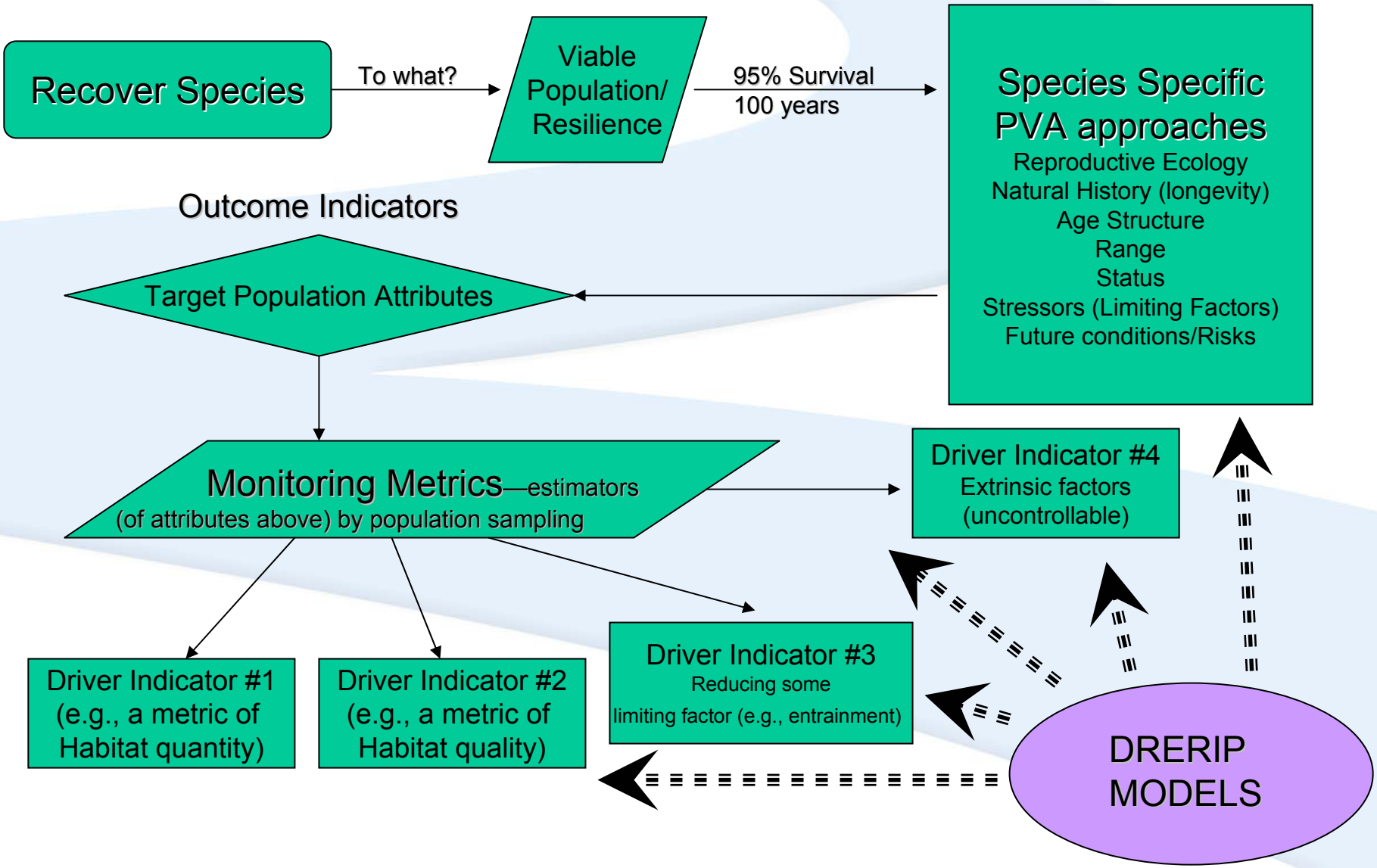
Population Sustainability

Objectives
Recovery of CALFED "R" species (most threatened, most Delta-centric species; e.g., Delta smelt, splittail, green sturgeon, Lange's metalmark butterfly, Suisun song sparrow, etc.)
Contribute to recovery of "r" species (e.g., CA clapper rail, salt marsh harvest mouse, Delta tule pea, Delta green ground beetle, giant garter snake, riparian brush rabbit, Swainson's hawk, etc.)
Maintain native species ("m" and others), sustain harvested ("H") taxa

Performance Measure	*Preliminary Target*
➢ Minimum Viable Populations (PVA) ("R" species)	➢ Risk of extinction (including future anticipated stressors) not to exceed 5% over 100 years
➢ Contribute to recovery and maintain/sustain populations ("r" and "m" species)	➢ Stable or positive population trends, or double from established baseline
➢ Reduce Limiting Factors (Driver indicators)	➢ Within adaptive management, minimize key stressors limiting populations

Information & Monitoring Needs
➢ Long-term monitoring of population attributes, including size, age structure, range, genetic diversity, risk factors, trends over time, biomarker approaches, etc..

Ecosystem Restoration: Conceptual Model



Ecosystem Restoration

Control of Invasive Species

Objectives
Avoid introduction and establishment of exotic species through appropriate regulatory and outreach measures, and control (to maximum practical extent) or eliminate significant existing invaders.

Performance Measure	*Preliminary Target*
➢ Introductions of exotics	➢ No new colonizations of invasive flora/fauna
➢ Control of existing invasive species	➢ No increase in range or dominance

Information & Monitoring Needs
➢ Coordination with Non-native Invasive Species Program.
➢ Tracking of preventative measures and eradication efforts.

Ecosystem Restoration

Reduction or Elimination of Contaminants

Objectives
Reduction or eliminate contaminant impacts to native flora and fauna (including indirect effects through habitat degradation or negative impacts to key prey items).

Performance Measure	*Preliminary Target*
➢ Sentinel or Keystone species survival	➢ Reduction or remediation of known contaminants to $\leq LC_{01}$ for the 95% most sensitive species
➢ Sentinel or keystone species reproduction	➢ Reduction or remediation of known contaminants to the 95% lower confidence limit for the EC_{10}
➢ Sentinel or keystone species health/growth	➢ No discernable adverse effects upon above

Information & Monitoring Needs
➢ Monitoring to assess survival and reproduction of key component species
➢ Bioassays/Biomarker approaches to determine acute toxicity and condition of individuals

Ecosystem Restoration

Maintain Biodiversity

Objectives
Maintain a diverse ecosystem as reflected in a heterogenous environment and high species diversity.

Performance Measure	*Preliminary Target*
➢ Ecosystem biodiversity (e.g., Shannon's *H* or Simpson's *D* and *E*)	➢ To be determined (some measure relative to a defined baseline or reference).
➢ Ecosystem heterogeneity (diversity of habitats and refugia)	➢ Provide for ecosystem structure to sustain diverse flora/fauna, including adequate habitat to sustain metapopulations or refugia for individuals within populations

Information & Monitoring Needs
➢ Ongoing monitoring and assessment, systematic surveys

Ecosystem Restoration

Implementation Plan – Next Steps

Next Steps	*Target Date*
➢ Re-evaluation of interim performance measures/adopt initial performance measures	➢ Nov 2007
➢ Integration with other subgroups	➢ Ongoing
➢ Integration with ongoing recovery planning efforts	➢ Ongoing
➢ Integration with ongoing monitoring programs	➢ To be determined
➢ Finalize development of remaining DRERIP models	➢ Ongoing

Ecosystem Restoration

Implementation Plan – Issues/Challenges and Resources Needed

	Issues/Challenges and Resources	*Action*
1	➢ ***Staffing*** currently inadequate	➢ DFG addressing
2	➢ ***Coordination*** with CMARP III	➢ Pending Science Program

Thank You