

Statewide Water Analysis Network

Technical Workshop
June 19th, 2008



Overview of Today

- Introductions / Agenda review
- Scenario concepts
- Analysis of scenarios for Update 2009
- Using WEAP
- Lunch
- Breakout discussion in the afternoon

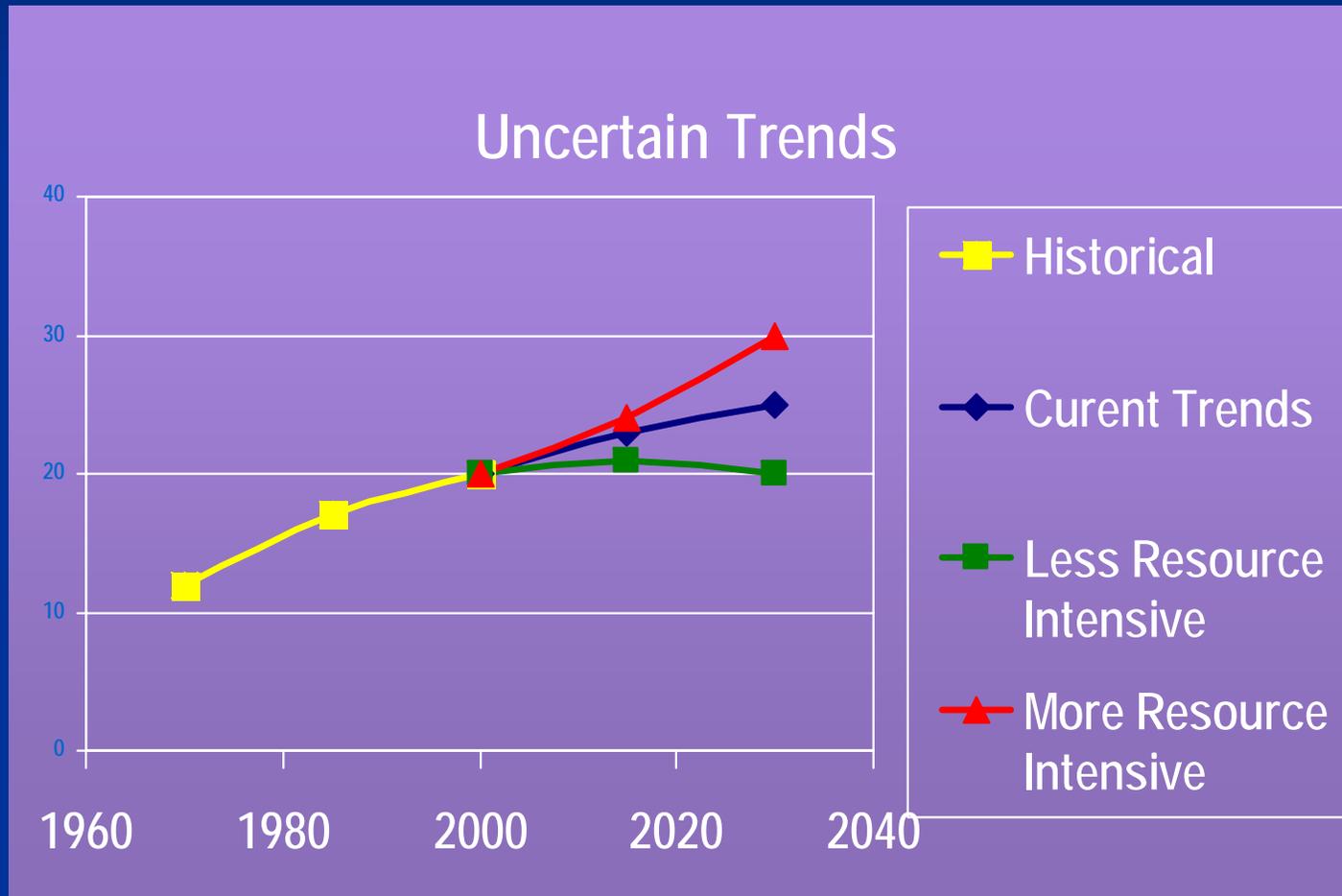


Purpose of Today's Workshop

- Provide feedback on strengths and weaknesses of proposed approach to evaluate future scenarios and water management responses
- Specifically, provide suggestions for improving approach to evaluate
 - Climate change
 - Flood management
 - Environmental water
 - Water quality



Scenario Concepts



8 Key Activities of Update 2009

- Evaluate progress on Update 2005 & Revise the Strategic Plan
- Update the Future Scenarios & develop Response Packages
- Quantify Climate Change impacts & recommend Adaptation Actions
- Update & Expand 12 Regional Reports
- Update 25 Resource Management Strategies
- Add Water Portfolio data for 5 years: 1999, 2002 – 2005
- Improve Analytical Tools, Data & Data Exchange
- Incorporate Companion State Plans

Deliverables for Update 2009

Using WEAP

- DWR is using WEAP platform for Update 2009 to evaluate future scenarios and water management responses
 - Successful WEAP application for IEUA
 - Contracting mechanism and expertise in place
 - Graphical nature supports collaboration
 - Shorter learning curve than alternatives



Water Plan Scenarios Represent Baseline Conditions

- Plausible during planning horizon under consideration
- Influence future water management decisions
- The water community has little control over
- Explore key uncertainties facing water managers



Uncertainties Affecting California Water Management

- Future climate change
- Vulnerable flood management system
- Severity of the next drought
- Collapsing Delta ecosystem
- Growing population
- Invasive species



Scenarios Organized Around Uncertainty

**Economic
and Financial**

**Institutional
and Political**

**Natural
Systems**

Technology

**Social
Practices**



Natural Systems Uncertainty

Air Temperature variability

Air Temperature trends

Precipitation Variability

Precipitation Trends

Snowpack/melt (intermediate factor)

Sea-level Rise

River/Stream Unimpaired Flows

Species recovery

Extent of Invasive Species

Resilience of Endangered Species

Water Temperature Variability

Water Temperature Trends

Stream-Aquifer Interaction

Catastrophic Events

Saltwater Intrusion

Extreme Precipitation Events

Condition of Pelagic Fishes

Groundwater Recharge Area

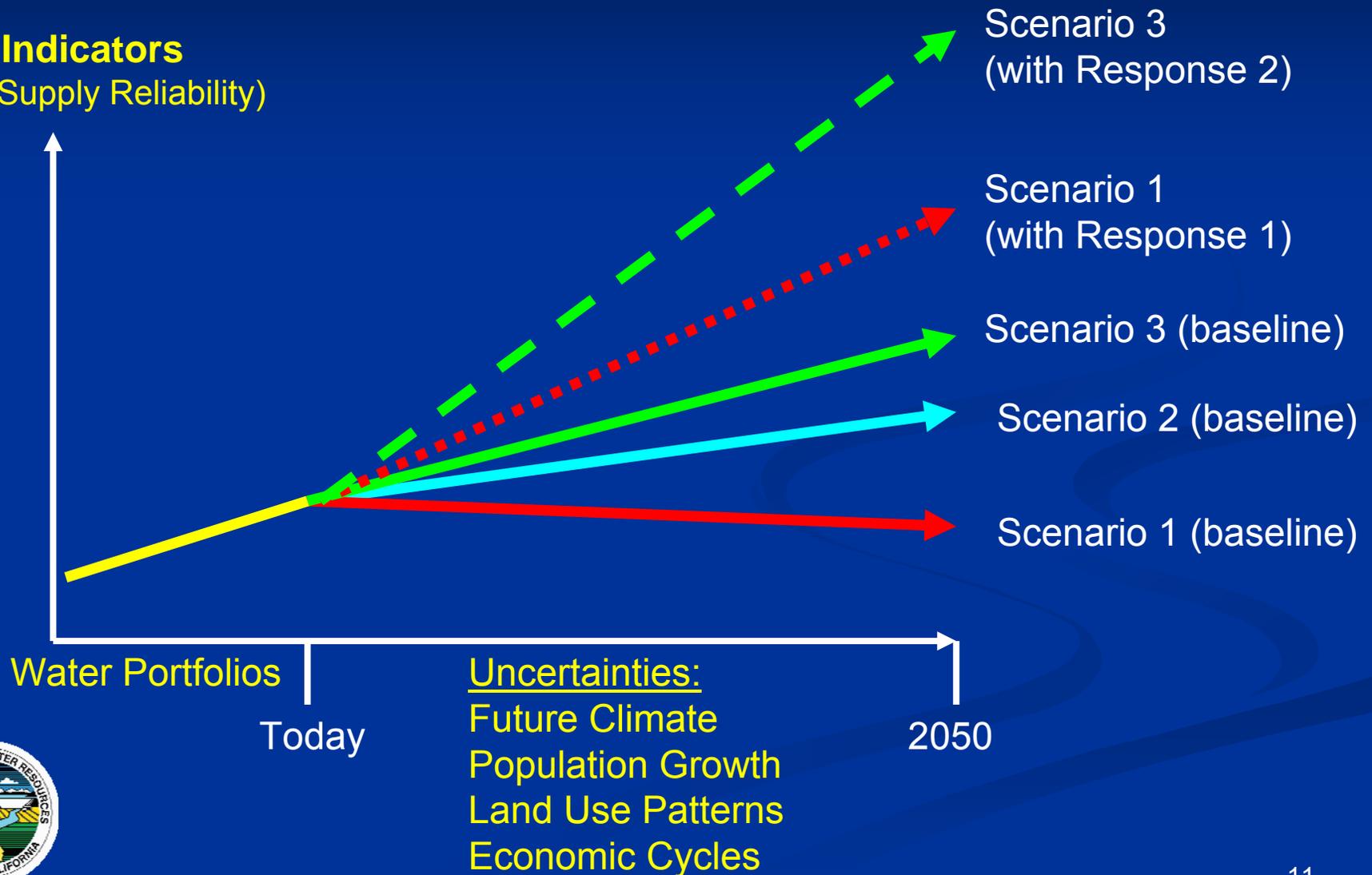
Phytoplankton Densities

Water Quality (Surface Water / Groundwater)



Evaluating Uncertainty Using Scenarios

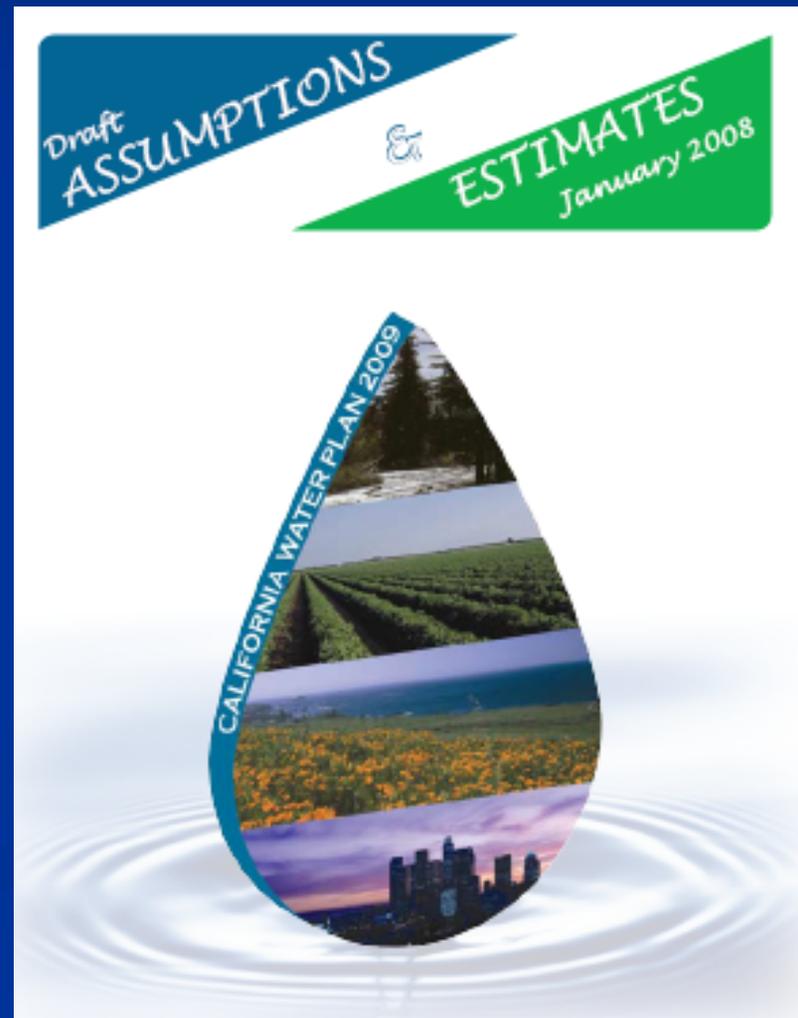
Indicators
(e.g. Supply Reliability)



Draft Assumptions and Estimates Report

- <http://www.waterplan.water.ca.gov/cwpu2009/ae>

**Includes
narratives for 3
scenarios**



Describing and Evaluating Resource Management Strategies



Update Resource Management Strategies

Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers

- Conveyance
- System Reoperation
- Water Transfers

Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination –Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Water Quality

- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

Practice Resource Stewardship

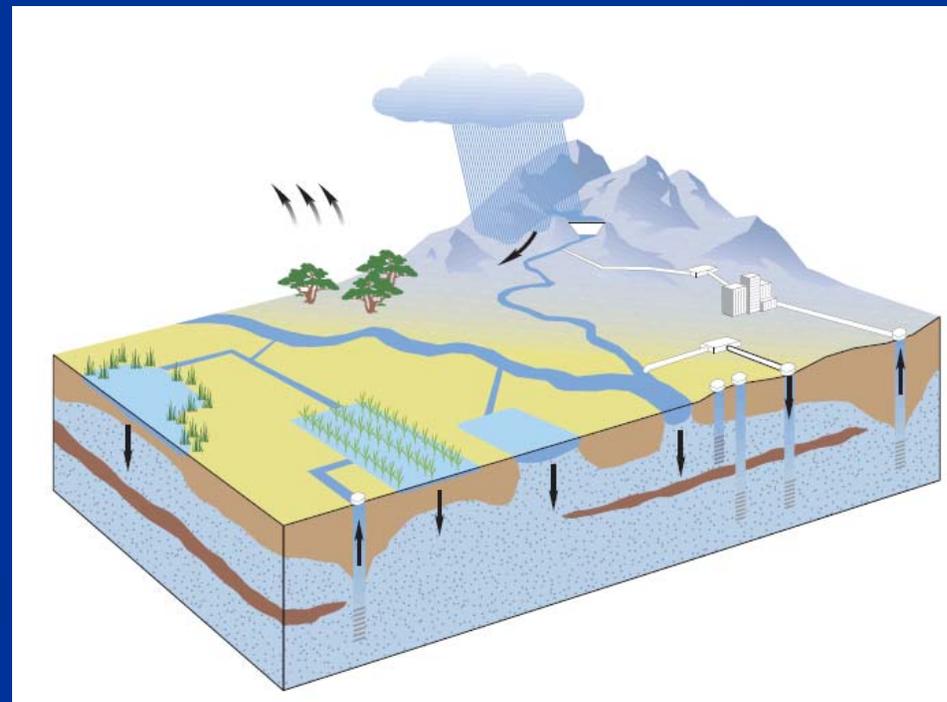
- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management
- **Forest Management (new stewardship strategy including meadow restoration)**



Added a New Strategy Category “Improve Flood Management”

New Resource Management Strategies

- Modify Flooding
- Modify Susceptibility to Damage
- Modify Impacts of Flooding
- Preserve Natural Floodplain Resources



Quantifying Climate Change Impacts & Recommending Adaptation Actions



- Established Climate Change Technical Advisory Group
- Collaborating with Governor's Water-Energy Climate Action Team (WET CAT)
- Incorporated climate factors in Update 2009 Scenarios
- Developing climate change mitigation & adaptation strategies



Reference Information

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