The new GCMRC Strategic Science Plan

USGS
science for a changing world

History

- Concept discussed Oct 2003-Mar 2004
- First draft completed May 2004
- First review by SAB June 2004
- First review by TWG/AMWG Aug 2004
- Planned final to AMWG Oct 2004

History (cont.)

- Responded to request from TWG and GCMRC staff to incorporate a strategic science plan with the strategic plan Summer 2004
- Draft Strategic Science Plan to AMWG Oct, 2004
- Final to be implemented in calendar year 2004

NEED FOR NEW STRATEGIC PLAN

- 1998 SSP OUTDATED
- SIGNIFICANT PAST AND FUTURE CHANGES IN GCMRC
- CHALLENGES FACED FY 2005-2009
- TO POSITION GCMRC TO BEST SERVE AMWG

GCMRC strategic plan underpinnings

1) Science
   - Objective
   - Non-advocacy
   - Relevant
2) Responsive to AMP Strategic Plan :
   - Principles
   - Goals
   - MO's
   - IN's

VISION

“TO BE THE UNDISPUTED LEADER IN PROVIDING RELEVANT, VALUABLE, ACCURATE AND TIMELY INFORMATION ON THE EFFECTS OF GLEN CANYON DAM OPERATIONS ON THE NATURAL AND CULTURAL REGIMES IN THE GRAND CANYON.”

Mission

To provide credible, objective scientific information to the Glen Canyon Dam Adaptive Management Program on the effects of operating Glen Canyon Dam on the downstream resources of the Colorado River ecosystem, utilizing an ecosystem science approach.

The broader context

- USGS is the science bureau of the Department of the Interior

- USGS has broad capabilities
  - mapping
  - biology
  - hydrology
  - geology

GCMRC STRENGTHS

- DEDICATED, EXPERIENCED AND CREATIVE PROFESSIONALS
- WELL DEFINED MANDATE AND PREMIER PROGRAMS SUCH AS SEDIMENTOLOGY
- STATE OF ART TECHNOLOGY AND SCIENCE APPROACHES

OPPORTUNITIES

- IMPROVED SPECIFICATION OF STAKEHOLDER NEEDS
- IMPROVED FOCUS OF SCIENCE ON STAKEHOLDER/RESOURCE NEEDS
- GREATER USE OF INTEGRATED INTERDISCIPLINARY SCIENCE PARADIGM
- MORE CREATIVE CONTRACTING AND PERMITTING
- IMPROVED BALANCE IN WORKLOAD AND BUDGET CAPABILITY
- IMPROVED WORKER MORALE AND PRODUCTIVITY

CRITICAL SCIENCE STRATEGIES

- IMPROVED SCIENCE INTEGRATION
- RESPONDING TO AMWG GOALS, INFORMATION NEEDS, AND KEY SCIENCE QUESTIONS

IMPROVING SCIENCE INTEGRATION

- INCREASE USE OF INTEGRATED INTERDISCIPLINARY SCIENCE PARIDIGM AS POSSIBLE

- MAINTAIN DISCIPLINE AND MULTIDISCIPLINE PARADIGM AS NECESSARY

RESPONDING TO AMWG SPECIFIED CRITICAL AREAS OF GOALS AND INFORMATION NEEDS

FISH
CULTURAL RESOURCES
T & E SPECIES
SEDIMENT
VEGETATION
WATER
HYDROPOWER
RECREATION
ADAPTIVE MANAGEMENT
PROCESS

RESPONDING TO KEY SCIENCE QUESTIONS TO DEVELOP AMWG INFORMATION NEEDS

- HOW DOES LAKE POWELL/CRE RESPOND TO DROUGHT AND CLIMATE STRESSORS?
- HOW DO CRE BIOTIC RESOURCES SUCH AS HBC RESPOND TO CHANGE IN WATER QUALITY?
- WHAT ARE CRE HYPOTHESIZED RESOURCE IMPACTS OF SUSTAINED HIGHER TEMPERATURE REGIMES?
- HOW DOE THE OCCURRENCE AND STATE OF MARSH AND BACKWATER COMMUNITIES ASSOCIATED WITH DIFFERING FLOW REGIMES EFFECT FISH REPRODUCTION AND SURVIVAL?
- IS THE ENCHROACHMENT OF NATIVE AND NON-NATIVE VEGETATION ONTO RECREATION SITES RELATED TO FLOW REGIMES?

RESPONDING TO KEY SCIENCE QUESTIONS (cont.)

- HOW WILL HBC AND RBT RESPOND TO VARIED FLOW, TEMPERATURE AND POPULATION REGIMES?
- WHAT ARE THE PHYSICAL AND BIOTIC RELATIONSHIPS OF FLOWS AND TERRESTRIAL VEGETATION?
- WHAT ARE THE FOOD BASE REQUIREMENTS FOR HBC?
- HOW ARE RIPARIAN AND SPRING PLAN COMMUNITIES AND HABITATS EFFECTED BY FLOW REGIMES?

RESPONDING TO KEY SCIENCE QUESTIONS (cont.)

- HOW ARE SEDIMENT FINES ROUTED AND STORED THROUGH THE CRE UNDER DIFFERING FLOW REGIMES?
- WHAT FLOW REGIME STRATEGIES BEST MAINTAIN FINES AND ENHANCE AND MAINTAIN CAMPABLE BEACH AREAS?
- HOW CAN FLOW IMPACTED CULTURAL SITE RESOURCE LOSS BE BEST MITIGATED IN FY 2005-2009?

STRATEGIES FOR EFFECTIVE SCIENCE MANAGEMENT FY 2005-2009

- IMPROVED GCMRC EFFECTIVENESS IN ADAPTIVE MANAGEMENT PROCESS
  - STRONG SCIENCE PRESENCE
  - STATUS OF KNOWLEDGE UPDATES
  - COMPREHENSIVE SCIENCE PLANS

SCIENCE MANAGEMENT STRATEGIES (cont.)

- **IMPROVED PROGRAM INTEGRATION (developed in coordination w/ SAB and implemented FY 2007/2008**

SCIENCE MANAGEMENT STRATEGIES (cont.)

MORE EFFECTIVE SCIENCE PROGRAMS

- AMWG SPECIFICES STAKEHOLDER NEEDS
- IMPLEMENT 2 YEAR COMPREHENSIVE SCIENCE PLANS WITH OUTREACH

SCIENCE MANAGEMENT STRATEGIES (cont.)

- IMPROVED MECHANISMS FOR FUNDING, STAFFING AND ADMINISTRATIVE CONCERNS
- DEVELOP STREAMLINED PROGRAMS FOR PRIORITY NEEDS
- SEEK COOPERATIVE PROGRAM FUNDING/SUPPORT
- DEVELOP MOVER EFFECTIVE STAFFING PLANS
- OUTSOURCE PROGRAMS IF EFFECTIVE
- STREAMLINE CONTRACTING/PERMITTING
- STREAMLINE PROGRAM PLANNING AND BUDGETING