



General Core Monitoring Plan for the GCD-AMP

TWG Core Monitoring Workshop
December 1, 2009

USGS-GCMRC
Flagstaff, AZ

Overview

- Background and Rationale for Plan
- General Framework
- Major Elements
- Staffing and Cost

Past TWG/AMWG actions

- April 2007: TWG reaffirmed its support of the core monitoring approach described in the Draft November 14, 2006 MRP, and recommended that GCMRC proceed with implementation of the approach
- TWG, AMWG and SOI approved the core monitoring approach described and included in the FY 07-11 MRP

Step 1: General Core Monitoring Plan

- Specify by resource area the goals, objectives, preliminary information needs, scope, priority, schedule, and funding level
- Review/approval by TWG/AMWG

Core Monitoring Process (from 2007-2011 MRP)

- 1 – General Core Monitoring Plan
- 2 – Information Needs Workshops
- 3 – Protocol Evaluation Panel Reviews
- 4 – Detailed Core Monitoring Plans for each Resource Area

Step 2: Annual TWG Information Needs Workshop

- **Scope:** monitoring projects that will be evaluated for core monitoring status in a given FY
- **Purpose:** Refine/formulate specific management objectives, core monitoring information needs and project scope

Step 3 PEP Reviews

- Independent science panel that recommends monitoring protocols and technical specifications consistent with Steps 1 and 2 above

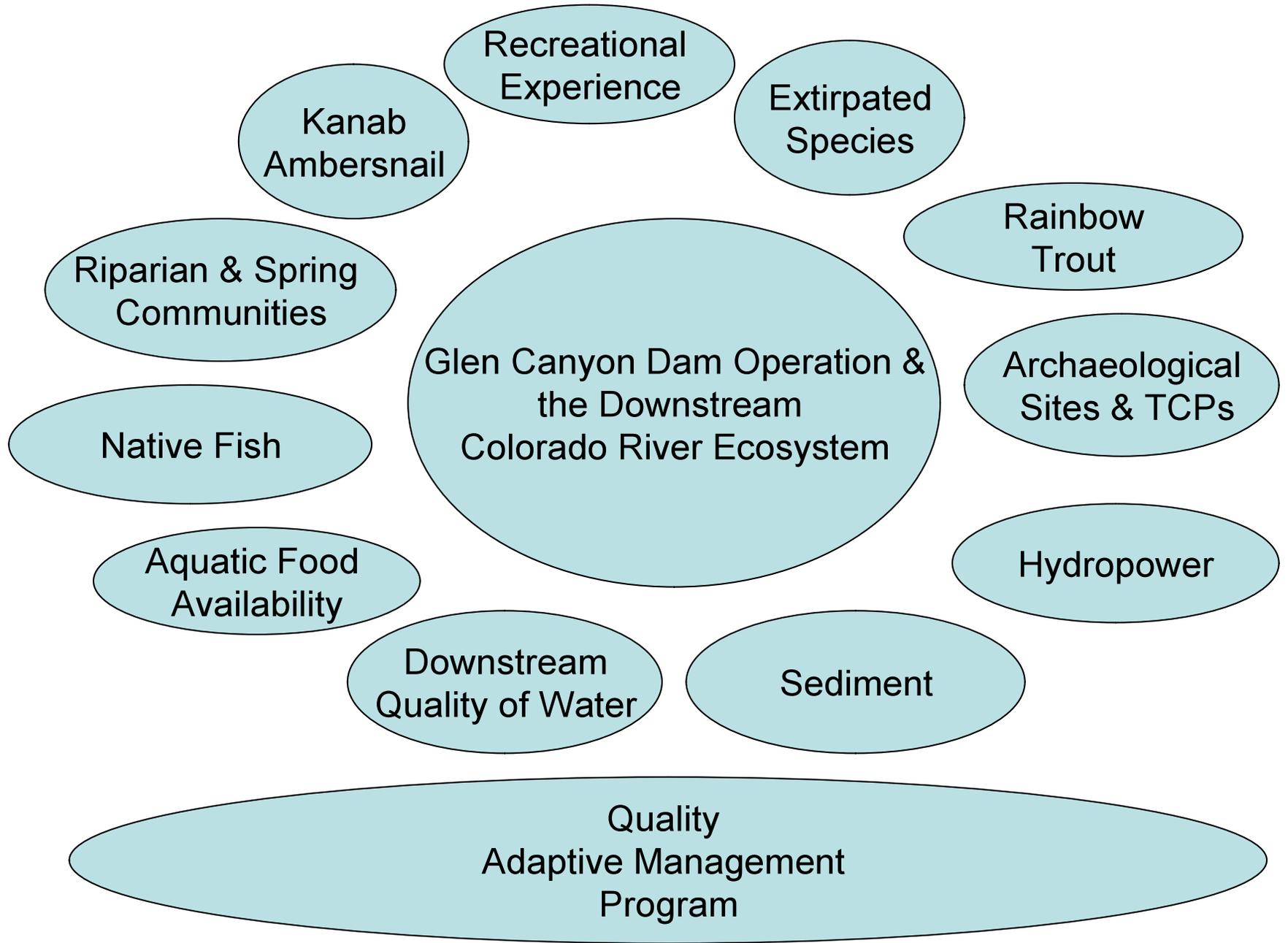
Step 4: Detailed Core Monitoring Project Reports

- **Scope:** Includes sufficient info for TWG to evaluate proposed projects for core monitoring status
 - Project title
 - Principal investigator(s)
 - Geographic scope
 - Project goals, tasks, and schedule by task
 - Key science questions and managers' information needs addressed
 - Linkage to other resources processes and models
 - Monitoring protocols, including sampling designs, level of data resolution, accuracy and precision assessment, etc.
 - Expected outcomes, including outputs by fiscal year, reports, guidelines, models, etc.
 - Projected cost of project or program by fiscal year
- **TWG review and endorsement**

What is Core Monitoring

- *Consistent, long-term, repeated measurements using scientifically accepted protocols to measure status and trends of **key resources** to answer specific questions. Core monitoring is implemented on a fixed schedule regardless of budget or other circumstances (for example, water year, experimental flows, temperature control, stocking strategy, nonnative control, etc.) affecting target resources (AMP Strategic Plan).*
- *Addresses monitoring of resources and CMINs associated with GCDAMP goals*

GCD AMP Strategic Goals



Why is a Core Monitoring Plan Needed

- Fundamental to Adaptive Management
- Meet the requirement of Grand Canyon Protection Act
- Core Monitoring R&D consumes large portion of budget (~65%) w/o a plan
- Needed to support budget and staff planning
- Needed to resolve fundamental issues about the scope and direction of core monitoring

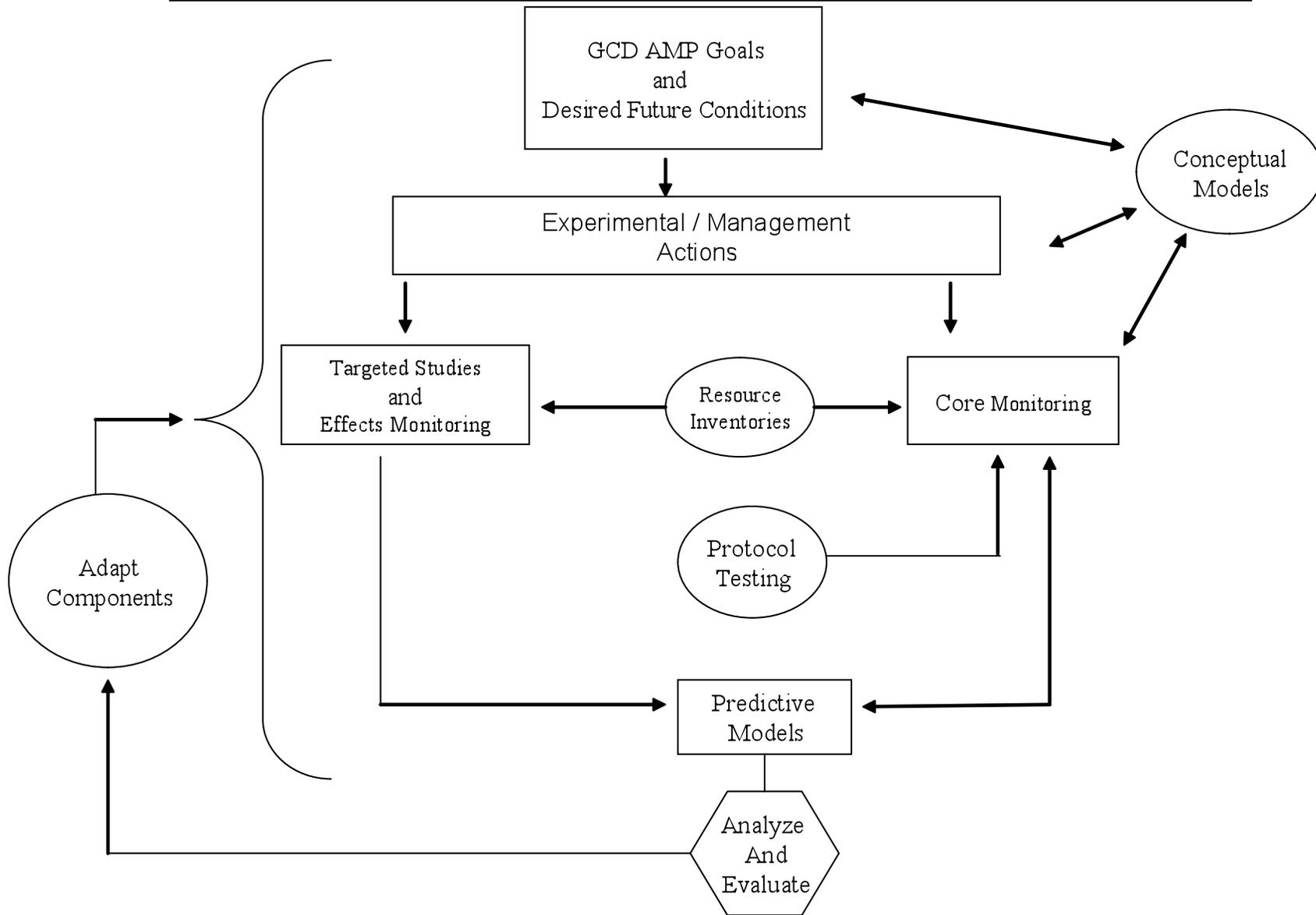
Programmatic Plan

- Outlines the general scope and objectives of the core monitoring program
- Identifies where we are headed and how & when to get there via R&D, PEPs, IN Workshops, and Core Monitoring Reports
- Plan will be incrementally implemented and modified based on experience, PEP reviews, and new information
- Estimates yearly \$\$\$ and staffing needs
- Plan will be incorporated into 2012-2017 MRP

Foundational Elements

- Inventories
- AMP Strategic Plan and Core Monitoring Information Needs (Identify What, Where, When, and How)
- Independent reviews and guidance
- Extensive R&D—Protocol development and testing
- Missing element: Desired Future Conditions (work in progress)

Context of the Core Monitoring Program



Reporting

- Publish and serve core monitoring data/results
- Annual reporting workshop
- Annual Status and Trends Fact Sheet
- SCORE Report (~every 5 years)

Role of GCMRC and Cooperators

- Overall Lead: GCMRC (oversight; data analysis; reporting)
- Cooperator Role: lead for specific tasks if:
 - Interested and capable
 - Fair price
 - Meet technical requirements
 - Peer review
- Competitive awards

Program Cost

- Cost: \$6.3M/year
 - Consistent with independent estimates
 - Based on existing or estimated work
 - Refined in detailed core monitoring reports
 - Suitable for general budget planning

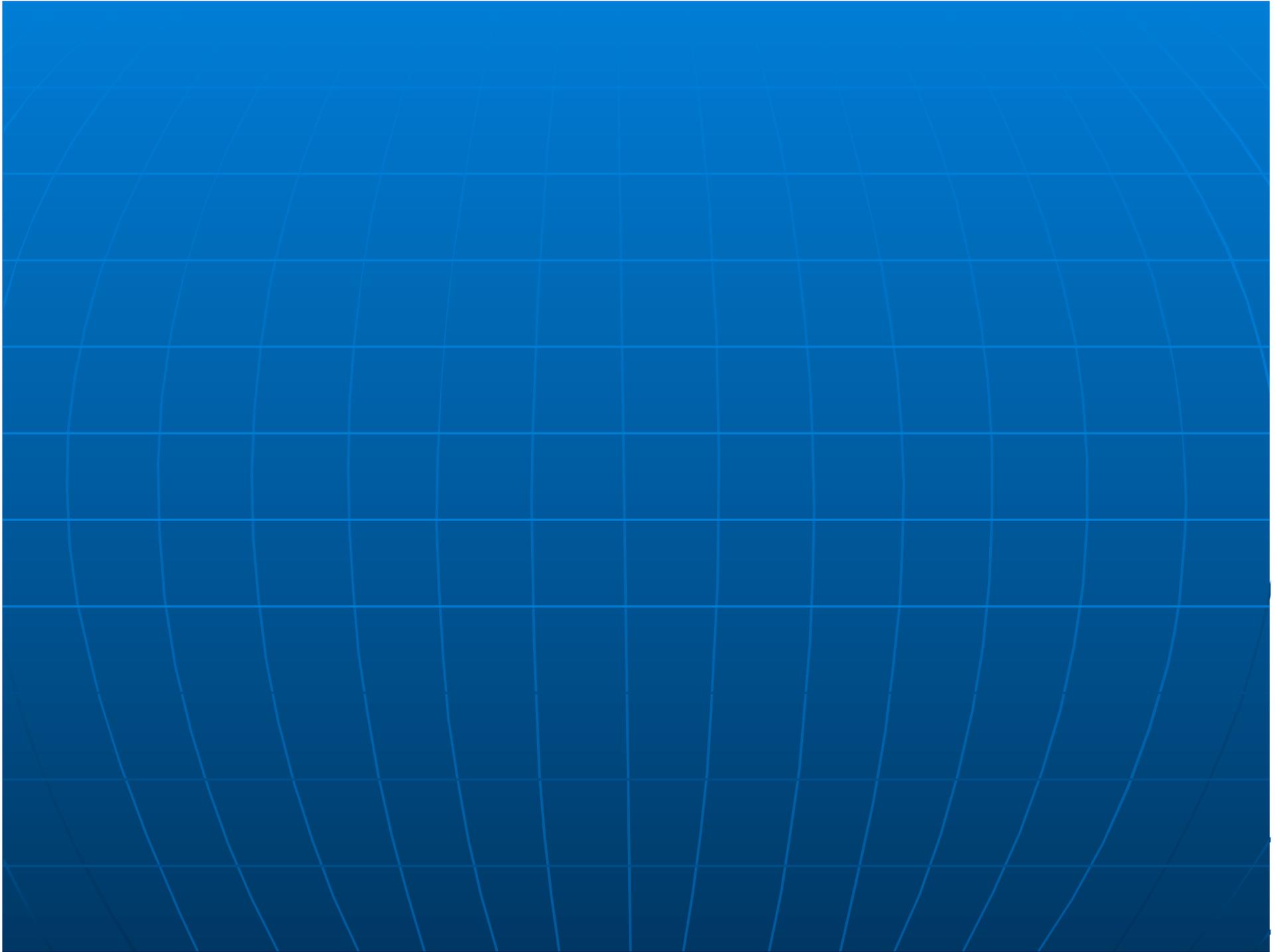
Staffing

- 25 full time equivalents by 2015
 - Program management
 - Data collection/analysis
 - Reporting and publication
 - Data Management
 - Contracting/agreements
 - Logistics and survey support
- Shift in staff expertise
- Shift to permanent positions (19 to 26)



Next Steps

- TWG Review—January 2010
- Initial Presentation to AMWG— Winter 2010
- TWG Recommendation—March 2010
- AMWG Recommendation— Spring/Summer 2010



General Core Monitoring Plan

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Chapter 1. Introduction and Background

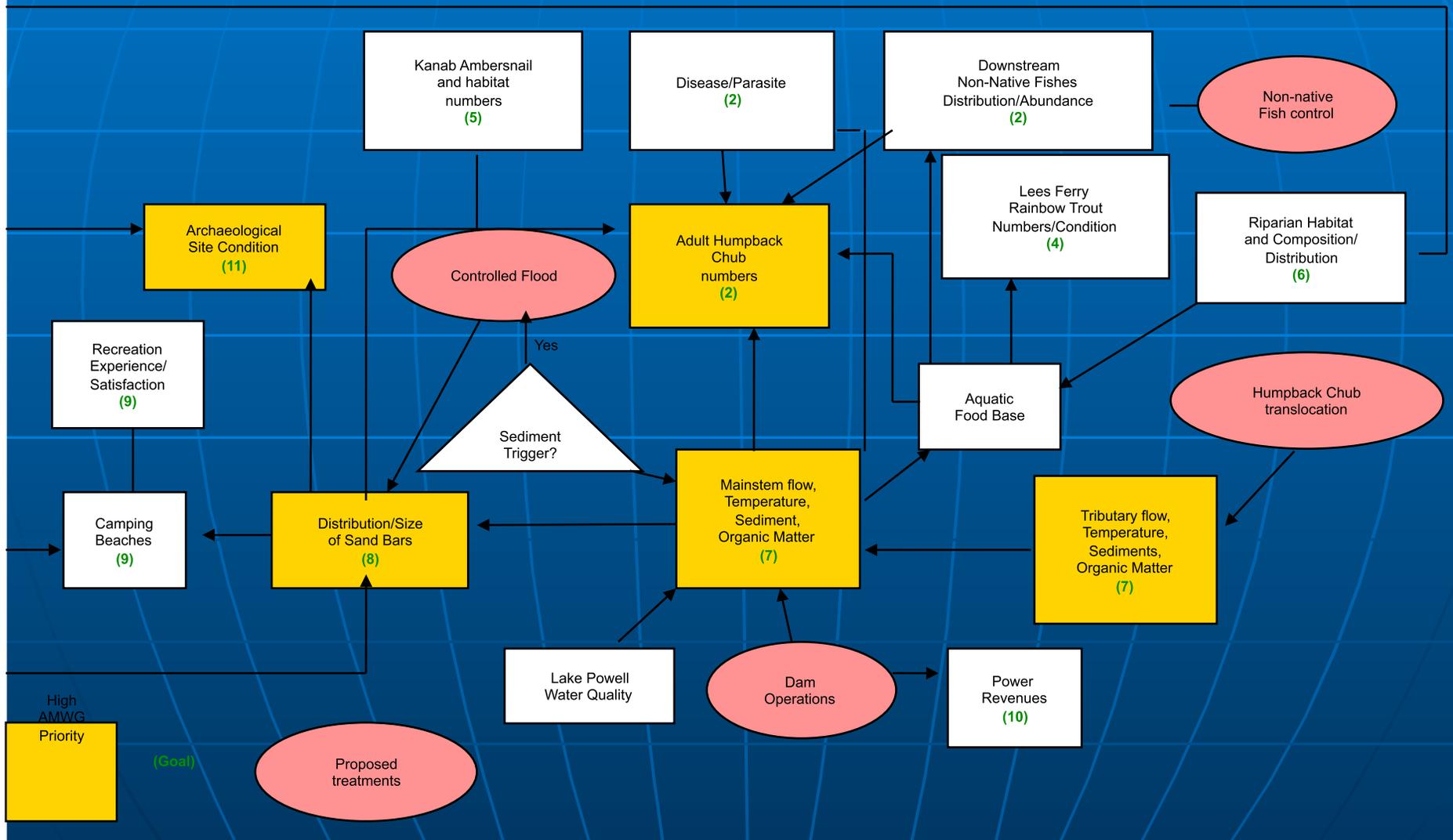
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Chapter 4. Data Management, Quality Assurance and Reporting

Chapter 5. Management Strategy Staffing and Budget

INTEGRATED CORE MONITORING PROGRAM



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MRP Core Monitoring Evaluation Process

1. **General Core Monitoring Plan:**
 - Based on existing planning documents
 - Specify by resource area goals, objectives, preliminary information needs, scope, priority, schedule, and funding level
 - Review/approval by TWG/AMWG
2. **Annual TWG Information Needs Workshops:**
 - **Scope:** monitoring projects that will be evaluated for core monitoring status in a given FY
 - Refine/formulate specific management objectives, core monitoring information needs and project scope
3. **PEP Reviews**
 - Independent science panel that recommends monitoring protocols and technical specifications consistent with 1 and 2 above
4. **Detailed Core Monitoring Project Reports**
 - **Scope:** Includes sufficient info for TWG to evaluate proposed projects for core monitoring status

Step 1: General Core Monitoring Plan:

- Based on existing planning documents
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Step 2: Annual TWG Information Needs Workshop

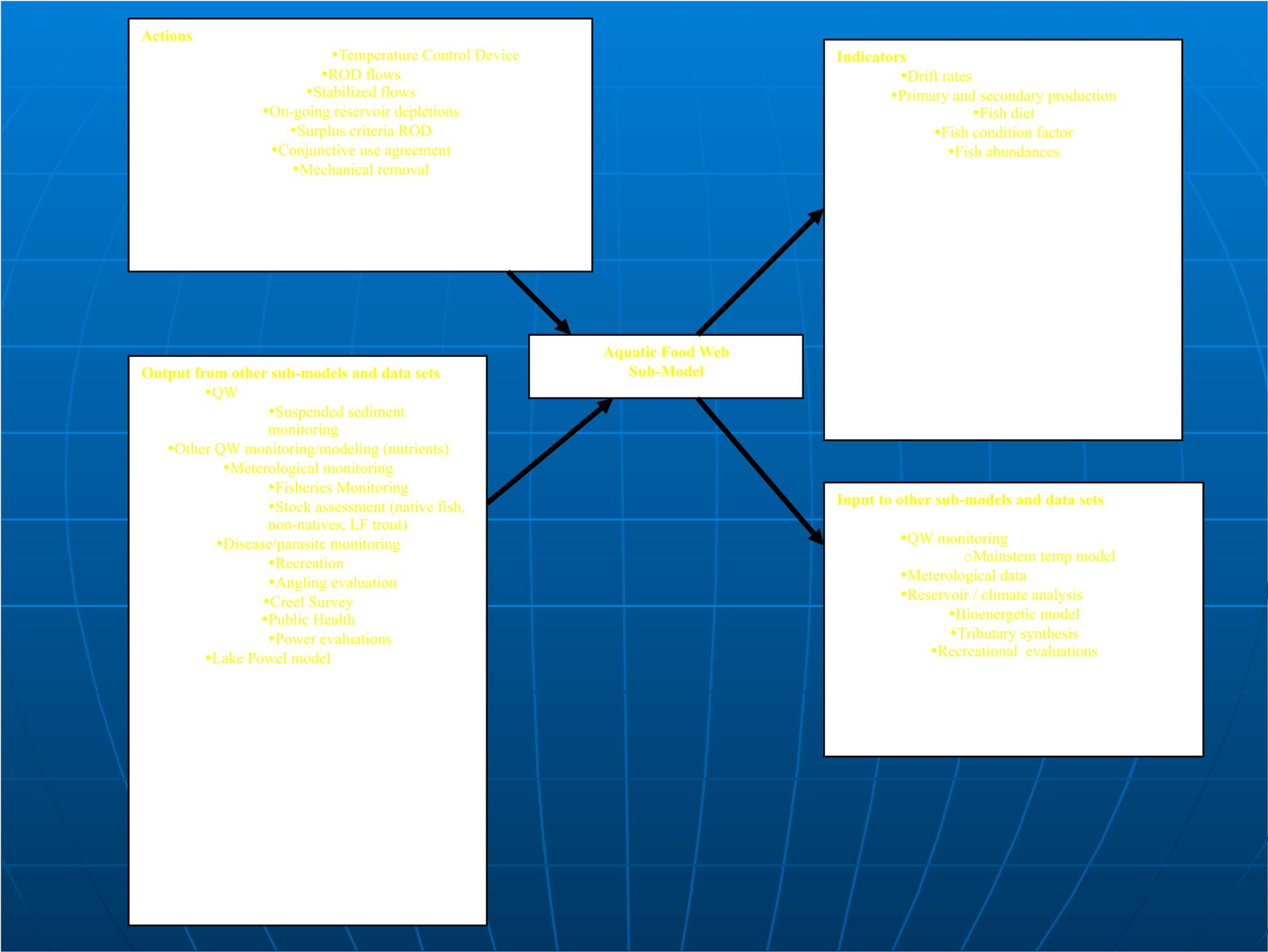
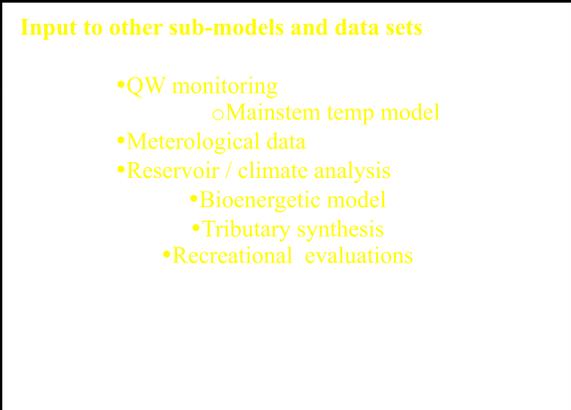
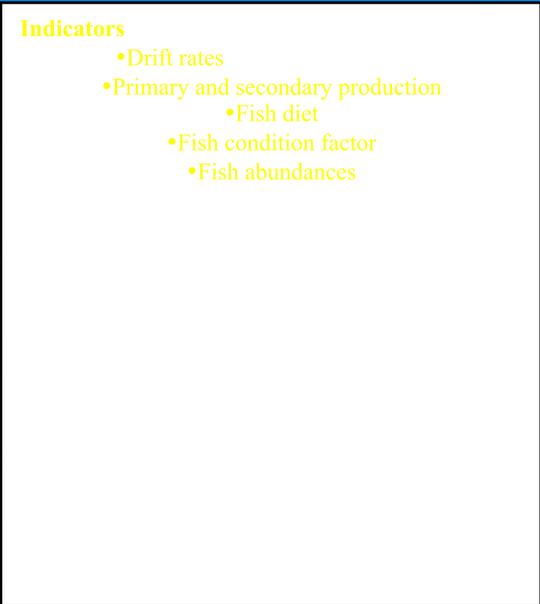
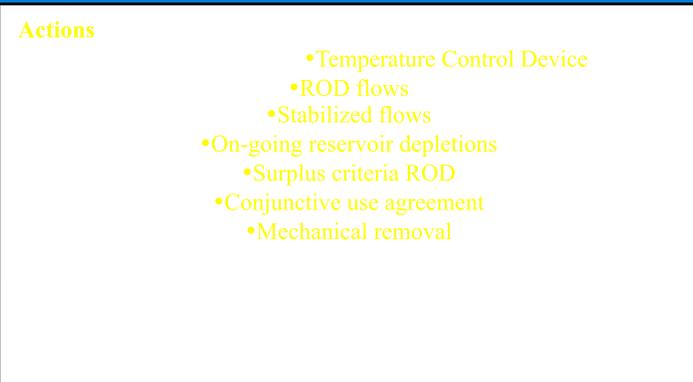
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Schedule (cont)

Goa	Resource	Completed PEPs	R&D/Pilot Phases	CMIN Workshop/Final PEP	CMP Report	Implement CMP
6	Riparian and spring communities	FY00	FY01-06	FY07, FY12	FY07	FY08
7*	Quality of Water	FY98 FY02	FY98-06	FY11	FY12	FY13
8	Sediment	FY98 FY02	FY98-06	FY06	FY07	FY08
9**	Recreational Experience Quality	FY05	FY07-09**	FY11**	FY11*	FY11*
10	Hydropower	N/A	FY07	FY10	FY10	FY11
11	Cultural Resources	FY00	FY07-12	FY12	FY12	FY12

Schedule

Goal	Resource	Completed PEPs	R&D/Pilot Phases	CMIN Workshop/Final PEP	CMP Report	Implement CMP
1*	Food base	FY00	FY06-08	FY11	FY11	FY12
2	Native fish	FY00	FY10	FY07/09	FY10	FY11
4	Lees Ferry trout	FY00	FY01-06	FY09 FY07	FY10	FY10
5	Kanab ambersnail	FY00	FY01-10	FY11	FY11	FY12
6	Riparian and spring communities	FY00	FY01-06	FY07, FY12	FY07	FY08