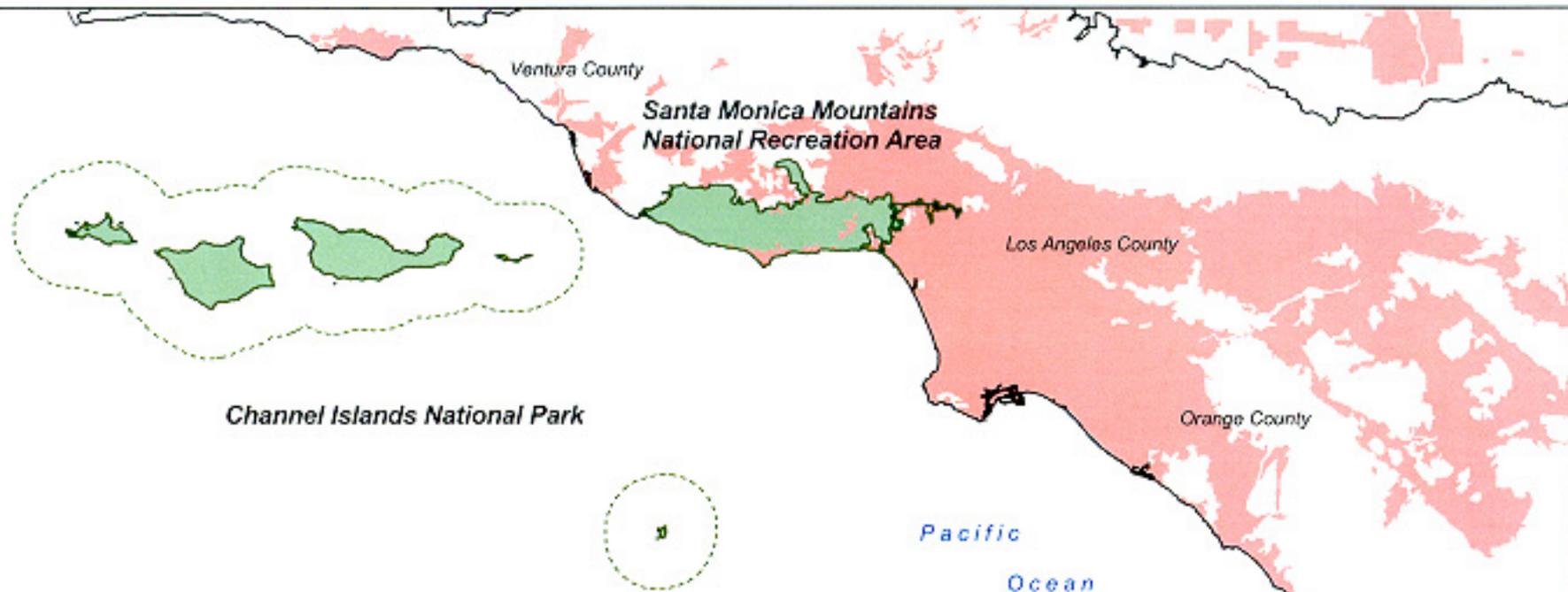


Mediterranean Coast Network



Inventory &
Monitoring



Mediterranean Coast Network

Cabrillo National Monument
 Channel Islands National Park
 Santa Monica Mountains National Recreation Area



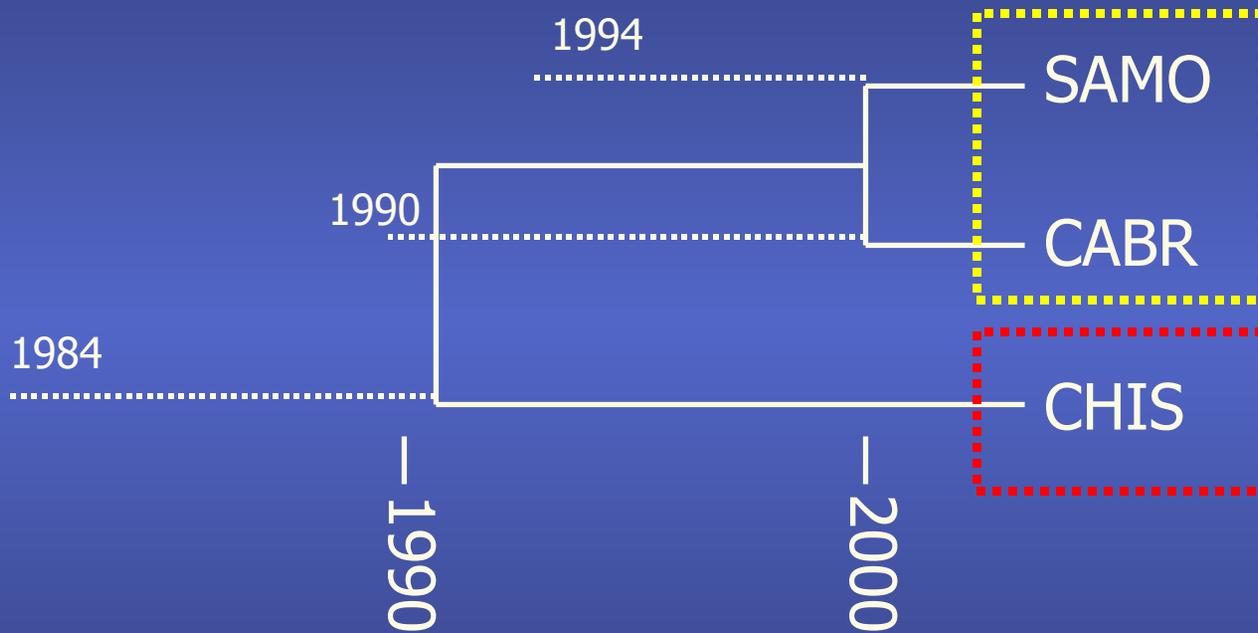
LEGEND

- National Park Boundaries
- Developed Land
- Southwest Ecoregion Boundary



1:1500000

MCN Parks & Monitoring Relationships



I&M Funding added to Park Base

I&M Funding to Network

Seven Steps to Developing a Network Monitoring Program

1. Form a Network Board of Directors and a Scientific Advisory Committee.
2. Summarize existing data and (resource) understanding.
3. Prepare for and hold a scoping workshop.
4. Write a report on the workshop and have it widely reviewed.
5. Hold meetings to decide on priorities and implementation approaches.
6. Draft the monitoring strategy.
7. Have the monitoring strategy reviewed and approved.

1. Form a Network Board of Directors and a Scientific Advisory Committee.

- In April 2001 the network charter establishing the Board of Directors and Technical Committee was approved and signed by park superintendents.
- Scientific Advisory Committee not specifically defined in network charter. Organization under consideration and committee to be formed by 2nd quarter of FY03.



Mediterranean Coast I&M Network Organizational Chart

Washington Support Office Natural Resources Information Division

Gary L. Williams - National I&M Program Manager
Steve Fancy - National Monitoring Coordinator

Pacific West Regional Office

Jim Shevock - Associate Regional Director
Katherine L. Jope - Natural Resources Program Lead
Penelope Latham - Regional I & M Coordinator

Technical Committee

Ray Sauvajot - Chief of PSRM SAMO
Andrea Compton - Chief of Natural Resource Science CABR
Kate Faulkner - Chief of Natural Resources CHIS
J. Lane Cameron - Network Monitoring Coordinator
Denise Kamradt - Network Inventory Coordinator
Park Natural Resources Staff / Subject Matter Experts

Board of Directors

CABR Superintendent - Terry M. DiMattio
CHIS Superintendent - Tim Setnicka
SAMO Superintendent - Woody Smeck
Ex Officio Members:
PWR I&M Coordinator - Penelope Latham
MCN Monitoring Coordinator - J. Lane Cameron

I & M Network Staff

Network Monitoring Coordinator - J. Lane Cameron
Biological Inventory Coordinator - Denise Kamradt
Water Quality Monitoring Coordinator - TBA
GIS & Database Technician - Lena Lee

2. Summarize existing data and (resource) understanding.

- SAMO - Major emphasis of 1994 RMP, which was driven by need to establish baseline information for establishing resource management priorities in light of expanding I&M program.
- CABR - Ongoing effort driven by data mining activities of Inventory Program.
- CHIS - Steps 1.2.1, 2.2.1, & 2.2.3 of the Step-down approach to developing monitoring plan as implemented.

1.2.1
Review
Literature
for
Resources
Occurrence
&
Distribution

2.2.1
Review
Legislation,
E.O.'s & NPS
Policy

2.2.3
Review
Knowledge of
Each
Component

3. Prepare for and hold a scoping workshop.

- **MCN** - Inventory scoping workshop was held in June of 2000 over 80 people attended.
- **CABR** - A park specific monitoring workshop was held in Jan 2000. Gary Davis was heavily involved in the organization of this workshop. There were five breakout work groups. A report is in review and revision at this time.
- **CHIS** - Two planning sessions were held which included park staff, outside scientists, and managers of agencies and organizations directly involved with the park. In September of 1999 after acquisition of land on Santa Cruz Island a workshop was held to identify natural and cultural resource management needs specific to Santa Cruz. This workshop was attended by over 50 people.
- **SAMO** - Between 1995 & 2002 over 15 mini-workshops or monitoring workgroups were convened to plan Inventory & VSM activities. A vital signs monitoring workshop is to be held in the first quarter of FY03 specifically to address SAMO VSM issues.
- **MCN** - A network wide workshop will be held early in the second quarter of FY03

Program Development in Process or Pending

4. Write a report on the workshop and have it widely reviewed.
5. Hold meetings to decide on priorities and implementation approaches.
6. Draft the monitoring strategy.
7. Have the monitoring strategy reviewed and approved.

Service-wide I&M Goals

- Identify status and trends on ecosystem health
- Define normal limits of variation
- Provide early warning of situations that require intervention
- Suggest remedial treatments and frame research hypotheses
- Determine compliance with laws and regulations

CHIS I&M Goals

- Know and understand status and trends of resources, natural processes, and threats to resource integrity.
- Restore impaired resources and processes
- Protect resources from harm
- Partner with agencies, organizations, and individuals to better achieve the park mission

SAMO Resource Management and I&M Goals

- Obtain resource knowledge and understanding.
- Implement conservation and restoration actions.
- Determine status and trends of ecosystem health.
- Empirically establish normal ranges of variation of ecosystem resources and processes.
- Provide early diagnosis of abnormal conditions that require intervention.
- Identify potential agents of abnormal change to guide research and prescribe treatments.

CABR - Resource Management and I&M Goals

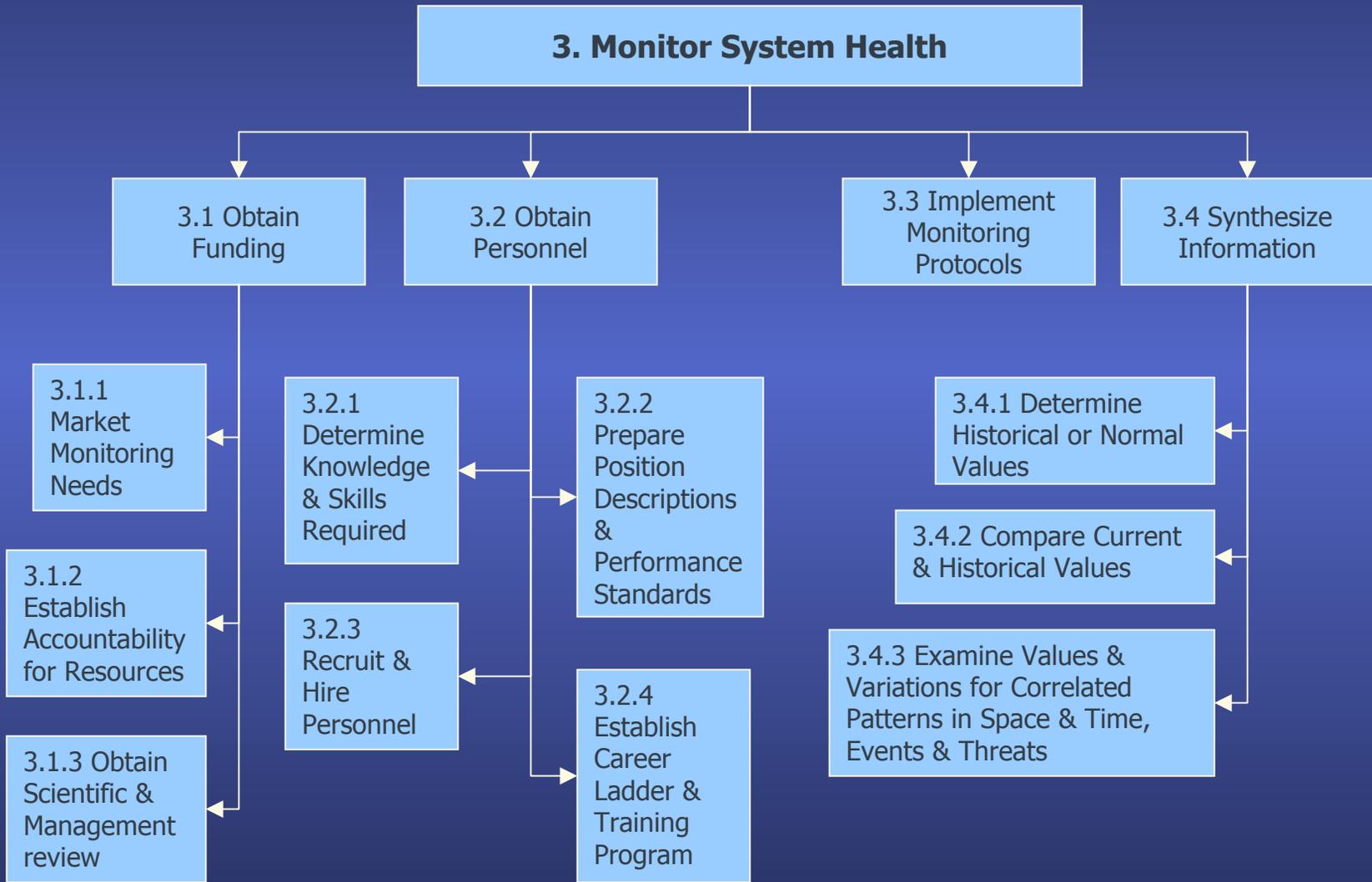
- Determine and mitigate if necessary effects of expanded waste water treatment by City of San Diego on intertidal resources.
- Preserve coastal sage scrub.
- Monitor air quality for impacts on viewshed deterioration resulting from anthropogenic sources associated with the City of San Diego.
- Preserve intertidal resources by monitoring tidepool health and visitor use impacts.
- Eliminate, where possible, exotic vegetation from the park.

MCN Vital Signs Monitoring

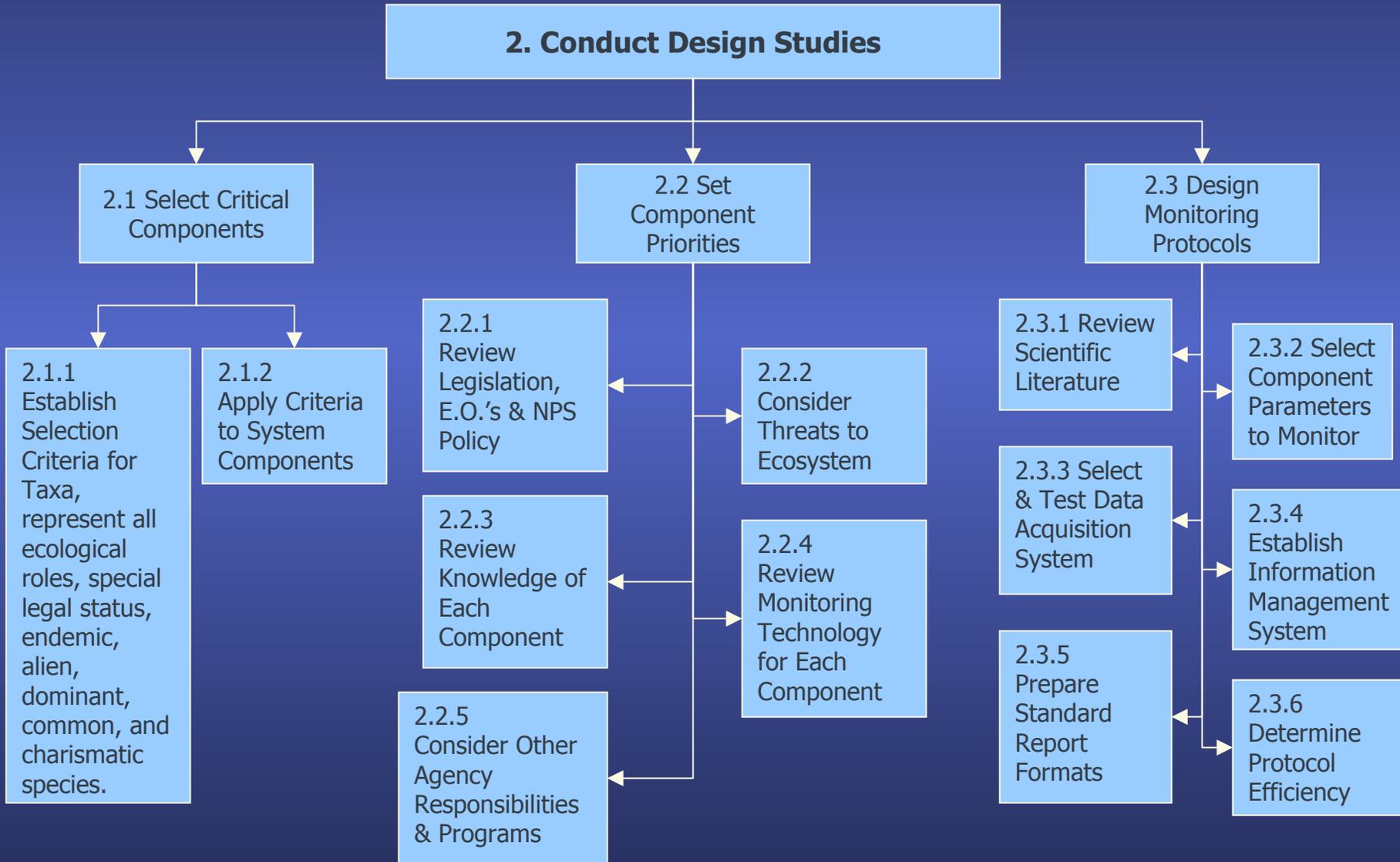
2002 - 2003 Objectives

- Compile and summarize existing information on monitoring programs and stewardship issues;
- Develop park and/or network conceptual ecosystem model(s);
- Seek to identify additional park-specific management issues, stressors, and vital signs to monitor;
- Hold workshop(s) to identify network issues and to determine overlap of park issues, identify indicators and potential monitoring strategies, and generally evaluate programs in terms of overall network monitoring needs and priorities; and
- Develop a network vital signs monitoring plan to fill gaps and meet network goals.

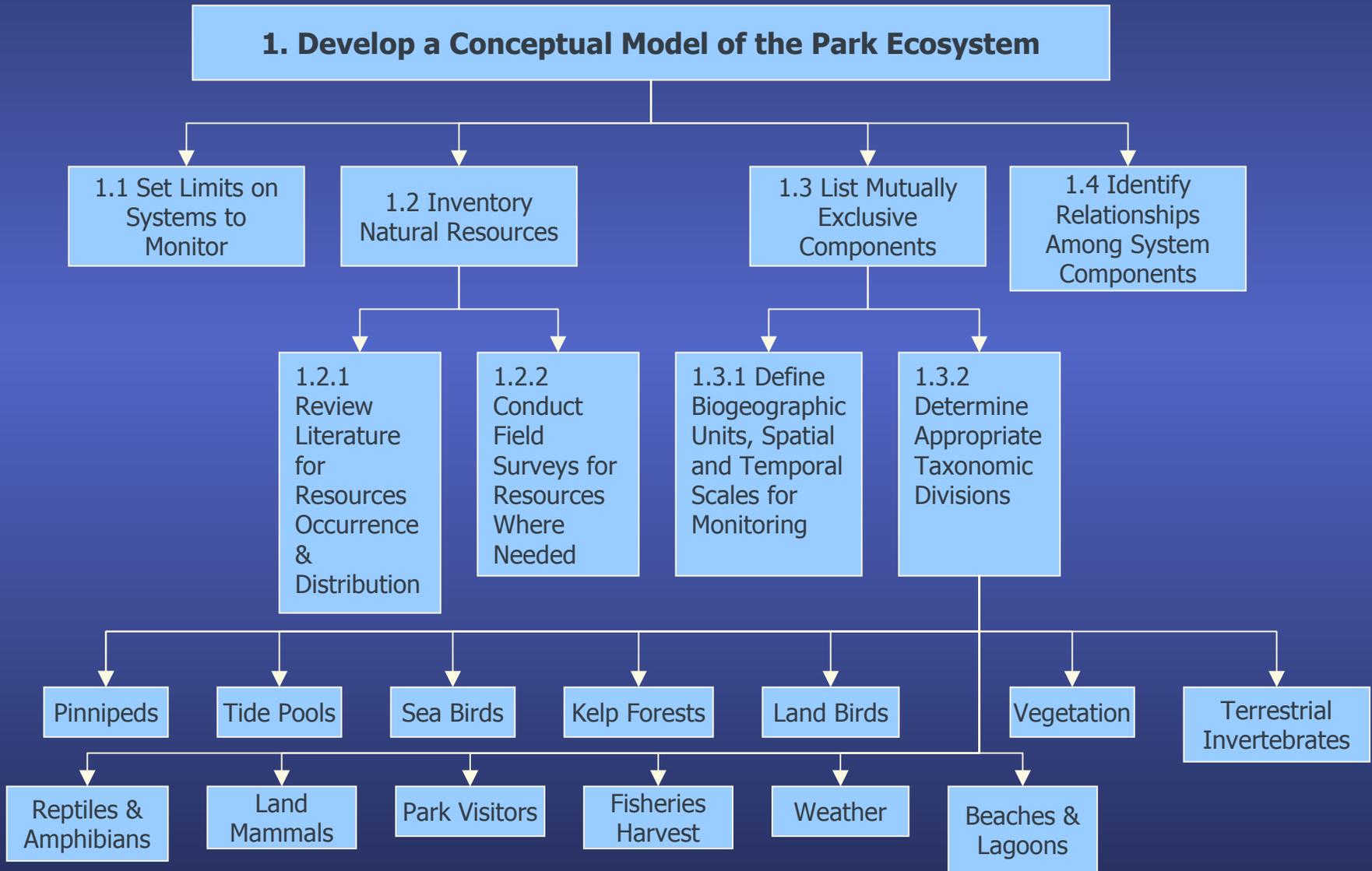
CHIS Three-Step Planning Process (Step 3)



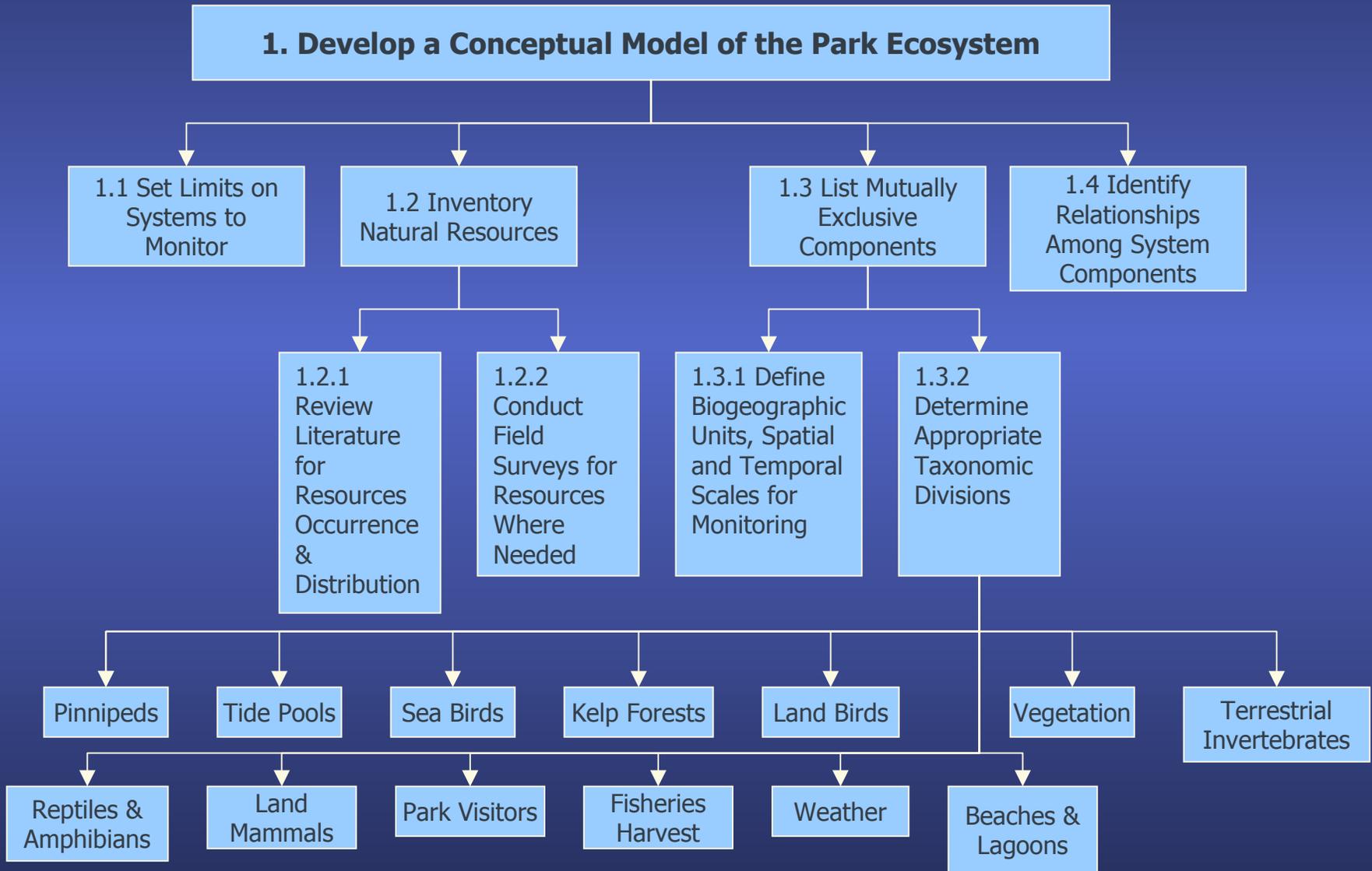
CHIS Three-Step Planning Process (Step 2)



CHIS Three-Step Planning Process (Step 1)



CHIS Three-Step Planning Process (Step 1)



General Ecosystem Services

Ecological Society of America, *Issues in Ecology*, Daily *et al.*, 2001

- Purification of Air & Water
- Mitigation of droughts and floods
- Generation and preservation of soils and renewal of their fertility
- Detoxification and decomposition of wastes
- Pollination of crops and natural vegetation
- Dispersal of seeds
- Cycling and movement of nutrients

Ecosystem Services (Continued)

- Control of agricultural pests
- Maintenance of biodiversity
- Protection of coastal shores from erosion by waves
- Protection from sun's ultraviolet rays
- Stabilization of climate
- Moderation of weather extremes
- Provision of aesthetic beauty and intellectual stimulation that lift the human spirit.

Ecosystem Services Provided by Parks of the Mediterranean Coast Network

- Purification of Air & Water (Preservation of public health value as an airshed for Southern California metropolitan area noted in SAMO's enabling legislation)
- Generation and preservation of soils and renewal of their fertility
- Pollination of natural vegetation
- Dispersal of seeds
- Cycling and movement of nutrients
- Protection of coastal shores from erosion by waves
- Maintenance of biodiversity
- Provision of aesthetic beauty and intellectual stimulation that lift the human spirit

Drivers/
Sources

Conceptual Model Design

(The Comprehensive Everglades Restoration Project Model)

Stressors

Ecological
Effects

Attributes

Measures

- **Drivers/Sources:** The major external driving forces that have large scale influences on natural resources.
- **Stressors:** The physical or chemical changes that occur within natural systems that are brought about by the drivers, which cause significant changes in the biological components of natural systems.
- **Ecological Effects:** The biological responses caused by the stressors.
- **Attributes: (Indicators or End Points)** A parsimonious subset of all potential biological elements or components of natural systems, i.e. populations, species, guilds, communities or processes.
- **Measures:** The specific features of each attribute to be monitored.

MCN Drivers & Stresors

Climate

Parent Materials

Recreational
Use

Land Use
(Development)

Fire

Anthropogenic

Topography

Precipitation

Altered
Hydrology

Exotic
Species

Habitat
Fragmentation

Erosion

Water
Pollution

Air Pollution

Habitat
Loss

Sedimentation

Altered
Air

Altered
Soil

Water Quality

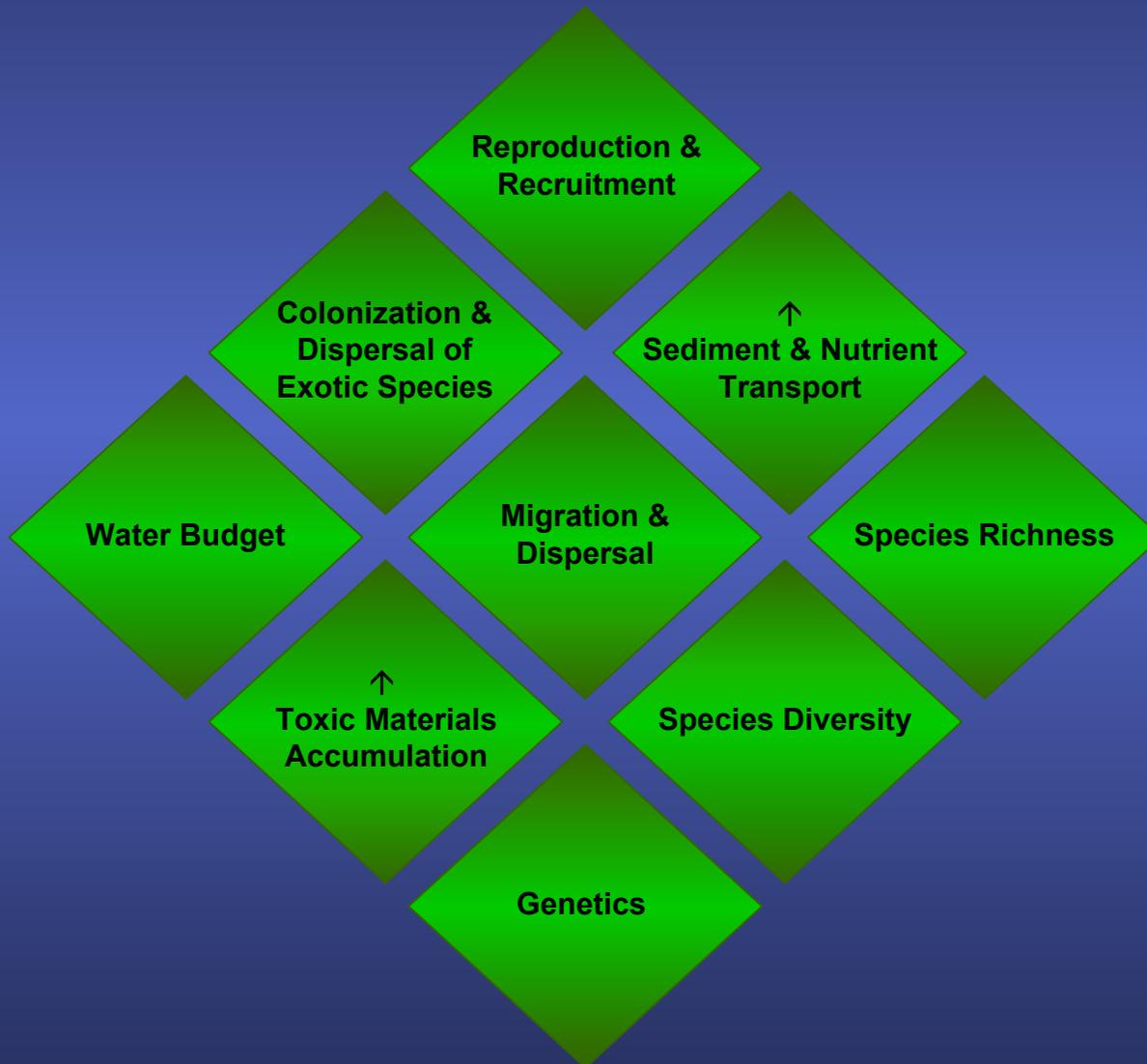
Non-Sustainable
Use

Light Pollution

↓ Fire Return
Interval

Hazard Fuel
Reduction

MCN Ecological Effects





Attributes

Attributes
&
Measures



Measures

Are Being Defined

Water Quality Monitoring

FY2002 & 2003 Objectives

- Collect, compile, and evaluate known information about fresh, estuarine, and marine water resources and water quality monitoring among the network parks.
- Support and/or complete ongoing baseline water quality data collection in the network parks, specifically at SAMO and CHIS.
- Develop a long-term strategy to implement appropriate water quality monitoring programs, including consideration of existing efforts from cooperating agencies across the network and the provision of NPS staff and resources to coordinate and manage such a strategy.

MCN Water Quality Planning

- Resource Conservation District of the Santa Monica Mountains tasked in Jan 02 to:
 - Identify all ongoing fresh, estuarine, and marine WQ monitoring within and adjacent to network parks.
 - Categorize these efforts by factors or parameters monitored.
 - Prepare park specific database(s) of results.
 - Develop appropriate geographical display of results.
 - Identify gaps in existing monitoring efforts and identify WQ monitoring needs.
 - Final report due Nov 02.
- Network Water Quality Coordinator to be hired in first quarter of FY03.

NATURAL HISTORY MUSEUM
OF LOS ANGELES COUNTY

UNIVERSITY OF CALIFORNIA
RIVERSIDE



Rancho Santa Ana Botanic Garden



Occidental College



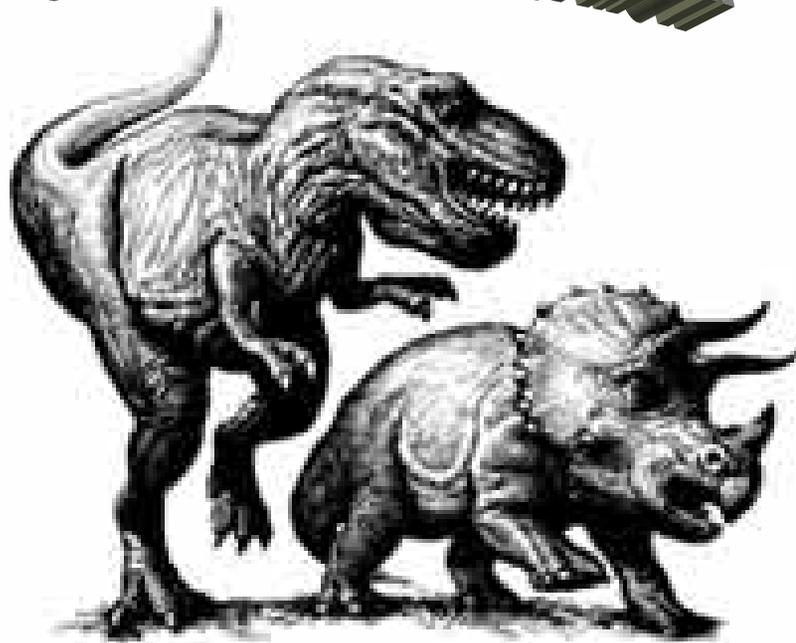
Stakeholders vs. MMS

MMS



PPS
TION
GRAPHY

UCI



ural History



Biological Sciences
University of Massachusetts/Amherst

UCDA



Biological Resources



UCLA



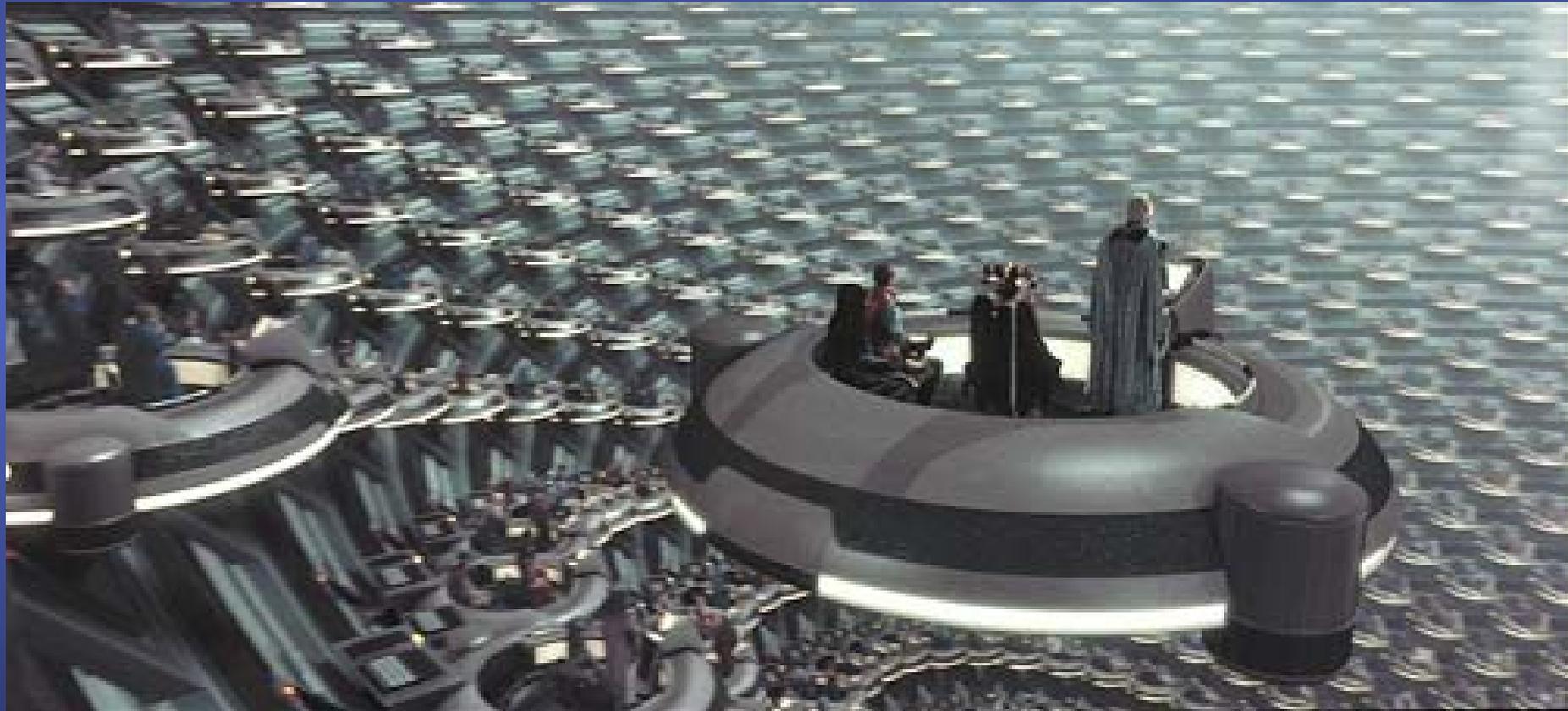
CONSERVATION
BIOLOGY
INSTITUTE

CALIFORNIA STATE UNIVERSITY
CHANNEL ISLANDS

MCN Cooperators

- USGS BRD, Western Ecological Research Center (WERC)
- USGS BRD, WERC – Channel Islands Field Station
- USGS BRD, Forest and Rangeland Ecosystem Science Center
- University of California, Los Angeles
- San Diego State University
- University of California, Santa Barbara
- California State University Northridge
- Santa Monica College
- Los Angeles County Museum of Natural History
- California Department of Parks and Recreation
- Santa Monica Mountains Conservancy
- US Coast Guard
- Metropolitan Waste Water Dept.
- Pt. Loma Nazarene University
- Minerals Management Service
- Mountains Restoration Trust
- Resource Conservation District of the Santa Monica Mountains
- Pepperdine University
- Rancho Santa Ana Botanic Garden
- Santa Barbara Museum of Natural History
- Santa Barbara Botanic Garden
- University of California, San Diego
- The Nature Conservancy
- San Diego Natural History Museum
- Maturango Museum
- County of San Diego
- University of California, Berkeley
- Stephen Birch Aquarium
- US Navy Natural Resources
- US Navy Southwest Region
- City of San Diego
- California Dept. of Fish & Game

A Typical Meeting of the MCN Cooperators Working Group



Successes:

- Utilization of “prototype” park experience
- Development of mutually beneficial working relationship with sister parks in network
- Professional development of resource management staff
- Forging of stronger ties with local experts/researchers



Stumbling Blocks:

- Integration of new programs with established programs
- Balancing long-term monitoring vs. immediate resource needs
- Data Management



