1. Status Update
2. Management Plan Structure
3. Action Plan Topics
4. CINMS Climate Change Impacts: Zachary Cannizzo, Ph.D.
5. Next Steps - Options for Council Assistance
6. Possible council action: Subcommittees for Climate Change & Marine Debris
1. Status of Management Plan Update Process

- **Sanctuary Condition Report released July 2019**
- **Public Scoping Period and Scoping Meetings Oct 1-Nov 15, 2019**
- **Management Issue Identification and Prioritization**
- **Develop Draft Management Plan and Environmental Review Documents**
- **WE ARE HERE**
- **Public Review and Comment on Draft Documents**

= public and advisory council input

= step complete
1. Status of Management Plan Update Process, continued

**At the last council meeting (March 20):**
- Review of council and staff ratings of public scoping comments

**Recent staff progress:**
- Program coordinator meetings
- Reviewing proposed structure of the draft management plan
- Discussion of NEPA Environmental Review assessment requirements
- Discussion of issues that could be high priority within the plan (we have more to cover)
2. Management Plan Structure
2. Management Plan Structure

Section 1 - Introduction

Section 2 - Issue based action plans

Section 3 - Program based action plans
2. Management Plan Structure: Section 1

Section 1 - Introduction

1.1 Background
1.2 Setting
1.3 Regulations
1.4 Process and Implementation
2. Management Plan Structure: Section 1

Section 1 - Introduction

1.1 Background

Introduction to CINMS and management plan
- National Marine Sanctuaries Act
- Ecosystem-Based Management
- CINMS Designation
- History
- Mission and Goals

Focus and Accomplishments
- Research and Monitoring Program
- Resource Protection Program
- Education & Outreach Program
- Maritime Heritage Program
- Operations & Administration
- Public Participation in SAC

1.2 Setting
1.3 Regulations
1.4 Process and Implementation
2. Management Plan Structure: Section 1

Section 1 - Introduction

1.1 Background
1.2 Setting
1.3 Regulations
1.4 Process and Implementation

Human Environment
Regional Context
Socio-Economic Environment
Cultural Significance
Resource Use

Natural Habitats of the Sanctuary
Rocky Shores
Kelp Forests
Sandy and Mud Seafloor
Estuaries
Open Ocean
Deep Sea
Submarine Canyons Seamounts

Physical Environment
Regional Geography
Geology
Oceanography

Living Marine Resources
Marine Mammals
Seabirds and Shorebirds
Fishes
Invertebrates
Algae and Surf Grass
Species of Special Concern
2. Management Plan Structure: Section 1

Section 1 - Introduction

1.1 Background
1.2 Setting
1.3 Regulations
1.4 Process and Implementation

Brief Intro to Existing CINMS Regulations:
- Scope of Regulations
- Prohibitions
- Marine Zones
- Exceptions to Prohibitions
2. Management Plan Structure: Section 1

Section 1 - Introduction

1.1 Background
1.2 Setting
1.3 Regulations
1.4 Process and Implementation

Implementation
Performance Evaluation
Action Plan Prioritization
Implementation Table

Process
Management Plan Review
Condition Report
Public Scoping
Identification and Issue Prioritization
Action Plan Development
### Table I-2: Implementation Table

<table>
<thead>
<tr>
<th>Implementation (w/ federal funding):</th>
<th>Implementation 5% per year increase</th>
<th>Implementation 5% decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>H – High</td>
<td></td>
<td></td>
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<tr>
<td>M – Medium</td>
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<td></td>
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<tr>
<td>L – Low</td>
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#### ISSUE BASED ACTION PLANS

<table>
<thead>
<tr>
<th>Action Plan #1</th>
<th><img src="image1.png" alt="Image" /></th>
<th><img src="image2.png" alt="Image" /></th>
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<tbody>
<tr>
<td>Strategy 1: Title her</td>
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<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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</table>
2. Management Plan Structure: Section 1

**Section 1 - Introduction**

- 1.1 Background
- 1.2 Setting
- 1.3 Regulations
- 1.4 Process and Implementation

**Section 2 - Issue based action plans**

**Section 3 - Program based action plans**
2. Management Plan Structure: Section 2

Section 2 - Issue based action plans

2.1 TBD  2.2 TBD  2.3 TBD  2.4 TBD

Issue-Based Action Plans will focus strategies and activities to address select high priority themes, bringing together sanctuary programs and tools. E.g., “climate change” or “marine debris”.
Section 3 - Program based action plans

3.1 Education & Outreach
3.2 Research & Monitoring
3.3 Maritime Heritage
3.4 Resource Protection
3.5 Operations & Administration

Program-Based Action Plans will describe strategies and activities that support ongoing core functions/departments at CINMS.
3. Action Plan Components & Issue Topics

**Action Plan Components**
- Goal statement, Background on the issue, Strategies CINMS will use to address the issue, Specific planned activities; Performance metrics.

**Issue-Based Action Plan Topics**
- Staff first considered resource protection threats that received high levels of interest/support based on advisory council ratings worksheets.
3. Action Plan Components & Issue Topics

Three topics (thus far) staff agree should be Issue-Based Action Plans:

- climate change
- marine debris
- vessel traffic
Guest Speaker:

**Dr. Zachary Cannizzo**
Visiting Climate Scientist & Climate Coordinator,
NOAA Office of National Marine Sanctuaries & NOAA Climate Program Office

zac.cannizzo@noaa.gov
Climate Change Impacts Profiles
Purpose and Process

• Four major climate drivers

• Two case-studies
  • Regional-scale issue
  • Focal resource

• What is the sanctuary doing?
Science Driven

- Extensive Literature Review
- Expert Input
- CINMS Profile – 71 cited sources
Channel Islands NMS Profile

• Major Climate Drivers
  • Ocean Acidification
  • Increasing Water Temperatures
  • Changing Oceanographic Processes
  • Rising Ocean Waters

• Regional-Scale Issue
  • Harmful Algal Blooms

• Focal Resource
  • Kelp
Ocean Acidification

- CA waters increasing in acidity much faster than global average
  - 60% since 1895 vs 30% since 1790

- Sanctuary resources are vulnerable
  - Deep water corals
  - Trophic effects

- Northern islands may be a refuge
Harmful Algal Blooms

• The Santa Barbara Channel has been a HAB hot-spot since 1998

• HABs could become larger, more frequent, more toxic, and increase in duration

ONMS 2019; adapted from McCabe et al. 2016
Kelp and Climate Change

• Kelp as Blue Carbon
  • Globally, macroalgae could sequester 13% more carbon than annual emissions of LA

• Warming could reduce reproduction

• Kelp in CINMS appear resilient to warming
  • Compared to other west coast populations
Increasing Water Temperatures

- Could warm 7°F by 2100
- Contributing to deoxygenation
- Community sensitive to ecological shifts
Changing Oceanographic Processes

• Changes to currents uncertain
  • Could have large impacts

• El Niño events to increase in frequency and intensity

• 2013-2016 marine heatwave
  • Could be good predictor of future conditions
Rising Ocean Waters

• Impacts on the islands uncertain

• Could threaten haul-out and intertidal habitat

• Could “drown” seagrasses
An Eye on the Future
## 5. Next Steps: Options for Council Assistance

<table>
<thead>
<tr>
<th>1. Wait for complete Draft Management Plan to be ready for presentation to the SAC, then provide review comments from least involved to most involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Receive process updates at SAC meetings and provide input/feedback on select issues/items</td>
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<tr>
<td>3. Participate in and comment during some single-issue Webinar sessions open to all council members and the public</td>
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<tr>
<td>4. Schedule some expert speakers/panels at select SAC meetings to discuss management plan topics, with council participation</td>
</tr>
<tr>
<td>5. Establish a limited number of short-term council Subcommittees inviting a few members to work with staff on action plan development during key stages</td>
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<tr>
<td>6. Request specific existing council Working Groups to take on development of action plan recommendations for select topics</td>
</tr>
<tr>
<td>7. Form and convene new short-term Working Groups to focus on development of action plan recommendations for select topics</td>
</tr>
</tbody>
</table>
6. Request for Council Action

**Council authorization to convene two Subcommittees**

- **1 - Climate Change**
- **2 - Marine Debris**

**Purpose:** To assist with development of action plans on these topics, receiving and responding to information from staff. Recommendations to be brought back to the full council for review/forwarding to CINMS.

**Timing:** Probably within the next three months, then disbanding.

**Membership:** To be determined soon. 2-3 council members. Ideal participants would have some subject matter knowledge and good awareness of CINMS programs/capabilities.
For More Information

Mike Murray
Deputy Superintendent for Programs
michael.murray@noaa.gov

Claire Nasr
CA Sea Grant Fellow
Program Support Specialist
claire.nasr@noaa.gov

https://channelislands.noaa.gov/manage/plan/revision.html