1

Marine Life Protection Act Initiative

Water Quality in the MLPA North Coast Study Region

Presentation to the MLPA Blue Ribbon Task Force
March 1, 2010 • Fort Bragg, California

Dominic Gregorio, MLPA Master Plan Science Advisory Team and California State Water Resources Control Board

2

North Coast Study Region

- Drainage from 10,000 square miles of watershed
- Generally sparse population
  - population concentrated within only a few coastal watersheds
  - forestry and some agricultural land use
- Generally very good marine water quality!
- Water quality problems spatially limited

3

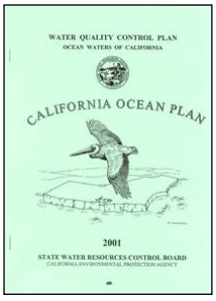
Water Quality Overview

- Water quality standards
- Water quality opportunities
  - Areas of special biological significance
- Water quality concerns to avoid
  - Urban runoff and non-point source pollution
  - Point source waste water pollution
- Special considerations
- Guidance and evaluation methods

4

Water Quality Standards

- California Ocean Plan
  - EPA-approved water quality control plan
  - Near coastal ocean waters to three mile limit
  - Beneficial uses of ocean waters – human health and marine life receptors
  - Water quality objectives
  - Program of implementation
  - Areas of special biological significance (ASBSs)



- Other Standards
  - Enclosed Bays and Estuaries Plan, California Toxics Rule, Regional Board Basin Plan

5

Areas of Special Biological Significance

- ASBSs can be considered water quality opportunities
- Four in MLPA North Coast Study Region
- All ASBSs are marine managed areas and a subset of state water quality protection areas (SWQPAs)
- Waste discharges are prohibited
- 2003 survey found storm water and other discharges, currently being regulated by water boards
- On-going monitoring effort

6

ASBS - Large Areas of North Coast

ASBS Site	Area (mi^2)	SWQPA ID Number
Jughandle Cove	0.32	1
Trinidad Head	0.46	6
King Range	39.15	7
Redwood National Park	97.88	8

7

Water Quality Concerns – Urban Runoff and Nonpoint Sources

- Urban Stormwater Runoff
  - Numerous pollutants, toxic to marine life
- Sources of Concern - Phase II Permitted Communities
  - McKinleyville
  - Arcata
  - Eureka
  - Fortuna
  - Fort Bragg

8

Water Quality Concerns – Urban Runoff and Nonpoint Sources

- Areas to consider
  - Smith River
  - Crescent City and harbor
  - Klamath River (*Mycrocystis* blooms)
  - Trinidad and harbor
  - Mad River
  - Arcata and Humboldt bays
  - Eel River
  - Shelter Cove and harbor
  - Fort Bragg/Noyo Bay

- Nonpoint sources
  - urban runoff
  - agricultural runoff
  - timber harvest
  - marinas/harbors

Water Quality Concerns – Wastewater Discharges

Major Discharges	Effluent
Samoa Island Pulp Mill/Fairhaven Power	Lumber (pulp) mill wastewater and cooling water

Intermediate Discharges	Effluent
Crescent City	Treated sanitary wastewater and seafood wastes
City of Arcata	Treated sanitary wastewater
Sierra Pacific Industries Arcata Division	Lumber (pulp) mill wastewater
City of Eureka	Treated sanitary wastewater
Fort Bragg, City of	Treated sanitary wastewater
Fortuna and other Eel River dischargers, collectively	Treated sanitary wastewater, cooing water and industrial wastewater

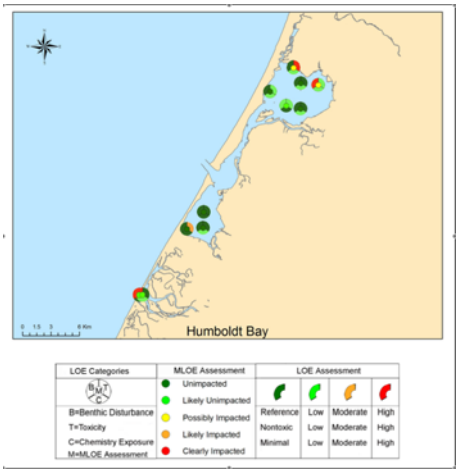
Water Quality Concerns – Wastewater Discharges

Minor Discharges	Effluent
CSU Humboldt	Marine lab waste seawater
Pacific Gas and Electric Humboldt Bay Power Plant	Industrial wastewater (reclassified from major due to re-powering
Shelter Cove Waste Water Plant	Treated sanitary wastewater
Shelter Cove Fish Cleaning Station	Seafood wastes (currently un-permitted, may be controlled soon)
Mendocino City	Treated sanitary wastewater

11

Special Considerations

- Impaired water bodies (not meeting standards)
  - Several watersheds for stream quality (e.g., timber harvest effects, sediment, temperature, etc.)
  - Sediment pollution (Humboldt Bay for dioxins and polychlorinated biphenyls)



12

Special Considerations

- Impaired water bodies, continued
  - Beaches for bacteria (Trinidad, Moonstone)
  - Blue green algae (Klamath)
- Coastal energy development
  - Projects in planning stage so will not be included in evaluation
- Aquaculture
  - Some habitat, water/sediment quality effects
  - Best handled by MLPA Master Plan Science Advisory Team (SAT) Levels of Protection Work Group

13

Water Quality Guidance

SAT recommendations:

- Co-location, where possible, with SWQPAs
  - ASBSs are special subset of SWQPAs
- Avoiding, where possible, areas of water quality concern:
  - Urban stormwater and nonpoint sources of pollution (e.g. harbors)
  - Waste water point sources
    1. Intermediate sources – ¼ mile radius buffer
    2. Minor sources – avoid outfall point

14

Evaluation Methods

- Two categories of marine protected areas (MPAs):
  1. Bay and estuary MPAs
     - Bays and estuaries are more likely to be associated with storm-water runoff
     - No areas of special biological significance (ASBSs) currently designated in embayments
  2. Coastal MPAs
     - Coast and offshore rocks
     - Large ASBSs provide opportunities for co-location

15

Scoring of MPA Proposals

- Scores based on presence/absence of areas of water quality concern and opportunity
- Co-location with areas of water quality concern: Water quality scores deducted
  - Stormwater and nonpoint source discharges
  - Industrial/municipal wastewater discharges
- Co-location with areas of opportunity: Water quality scores improved
  - State water quality protection areas (SWQPAs) and ASBSs

16

Water Quality Concern Areas

Waste Water discharge

Waste Water discharge

SWQPA Scoring

South Coast Example: Existing Heisler Park State Marine Reserve and Heisler Park SWQPA/ASBS

- MPA (in red) does not completely coincide within an ASBS (in black)
- ASBS shoreline covers 90% of MPA shoreline

Next Steps

- Create guidance document for north coast study region
  - Maps to show areas of water quality concerns, and water quality opportunities
- SAT approved evaluation process; maps andcurrently being developed