April 13, 2006
GFNMS Advisory Council Meeting

MLPA Update
Blue Ribbon Task Force Recommendation Finalized

SMPA Update
Ecotrust study completed
New Timeline
Workgroup identified preliminary areas of interest for federal waters
MLPA IMPLEMENTATION UPDATE

1. Scientific basis for MPA Network design

2. Blue Ribbon Task Force decision to forward 3 MPA network packages to CA Dept of Fish and Game Commission: preferred alternative identified

3. Issues regarding process

4. Future steps
MPA NETWORK
SCIENCE-BASED DESIGN

Connections through Movement
Of Adults and Young

MLPA/SMPA status report April 13, 2006
DETERMINING MPA SIZE

To achieve sustainable populations:
MPA Size > movement of juveniles and adults of a species
## Adult Movement for Species of Interest

<table>
<thead>
<tr>
<th></th>
<th>0 – 1 km</th>
<th>1 – 10 km</th>
<th>10 – 100 km</th>
<th>100 – 1000 km</th>
<th>&gt; 1000 km</th>
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<tbody>
<tr>
<td><strong>Invertebrates</strong></td>
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<tr>
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<td>Invertebrates</td>
<td>Fishes</td>
<td>Invertebrates</td>
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<tr>
<td>Mussel</td>
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<td>Dung. Crab*</td>
<td>Big Skate</td>
<td>Jumbo Squid*</td>
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<td>Octopus</td>
<td>Brown</td>
<td>Rockfishes</td>
<td>Pacific Halibut</td>
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<td>Copper</td>
<td>Bocaccio</td>
<td>Sablefish*</td>
<td>Sharks*</td>
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<tr>
<td>Snail</td>
<td>Greenspotted</td>
<td>Canary</td>
<td>Salmonids*</td>
<td>Tunas*</td>
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<td>Urchin</td>
<td>Olive</td>
<td>Yellowtail</td>
<td>Sturgeon</td>
<td>Turtles*</td>
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<tr>
<td><strong>Rockfishes</strong></td>
<td>Vermilion</td>
<td>Widow</td>
<td>Whiting*</td>
<td>Birds</td>
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<tr>
<td>Blk. &amp; Yellow</td>
<td>Other Fishes</td>
<td>Other Fishes</td>
<td>Birds</td>
<td>Albatross*</td>
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<td>China Gopher</td>
<td>Cabezon Ca.</td>
<td>Anchovy</td>
<td>Gulls*</td>
<td>Pelican*</td>
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<td>Kelp</td>
<td>Halibut</td>
<td>Herring</td>
<td>Salmon*</td>
<td>Shearwater*</td>
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<tr>
<td><strong>Other Fishes</strong></td>
<td>Lingcod</td>
<td>Sardine</td>
<td>Tuna*</td>
<td>Shorebirds*</td>
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<tr>
<td>Gobie</td>
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<td>Albatross*</td>
<td>Terns*</td>
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<tr>
<td>Sculpin</td>
<td></td>
<td></td>
<td>Dolphins</td>
<td>Mammals</td>
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</tbody>
</table>

* Seasonal Migration

Mammals
Porpoises
Sea Lions*

Birds
Gulls*
Mammals
Harbor Seal
Otter

* Whales*
DETERMINING MPA SIZE

Larval movement based on DNA analysis of various species

Estimated Dispersal Distance

- seaweeds
- invertebrates
- fishes
DETERMINING MPA SIZE

Estimated Dispersal Distance

1 km  10 km  100 km

Seaweeds
Invertebrates
Fishes

Little Benefit

Number of species

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Why Not 1 Very Large Reserve?

Probably Not the Best Option

- Too big
- Not big enough
- Loses potential fisheries benefits

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Many Other Benefits of Networks

Single Large Reserve

Dispersal range

Network of Several Reserves

• Same protection in much smaller area
• Greater fisheries benefits
• More flexibility in design = fewer costs
• Greater geographic / habitat / species representation
• Spreads risks of catastrophes

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Dispersal between MPAs is Just as Beneficial as Retention within MPAs

Key Criterion:
Spacing of MPAs < Larval Dispersal

10 km

100 km

500 km

Estimated Dispersal Distance

seaweeds

invertebrates

fishes

Little Benefit

Little Benefit

Little Benefit

Number of species
DETERMINING MPA SPACING

Networks may maximize the #species that benefit

10 km reserves
spaced 100 km apart

20 km reserves
spaced 50 km apart
MPA SIZE and SPACING Guidance

• For an objective of protecting adult populations, based on adult neighborhood sizes and movement patterns, MPAs should have an **alongshore span of 5-10 km (3-6 m or 2.5-5.4 nm) of coastline, and preferably 10-20 km (6-12.5 m or 5.4-11 nm)**. Larger MPAs would be required to fully protect marine birds, mammals, and migratory fish.

• For an objective of facilitating dispersal of important bottom-dwelling fish and invertebrate groups among MPAs, based on currently known scales of larval dispersal, MPAs should be **placed within 50-100 km (31-62 m or 27-54 nm) of each other**.
MPA Package Evolution

FINAL BRTF PACKAGES (Mar 2006):
Package 1  “fishing package”
Package 2R  modified “conservation package”
*Package 3R(R) modified “hybrid”

Outside packages
Package AC  “NRDC/PRBO”
Package B  

*Preferred Alternative

<table>
<thead>
<tr>
<th>CONSERVATION AREA</th>
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<tbody>
<tr>
<td>Package</td>
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<tr>
<td>---------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2R</td>
</tr>
<tr>
<td>3R</td>
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<td>Status Quo</td>
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General Issues

1. Public concern that stakeholders did not reach consensus
2. Public and stakeholder concern that CCRSG packages were edited by the Blue Ribbon Task Force
3. Kelp harvesting at Ano Nuevo, Cambria - impact on proposed SMR?
4. Vandenberg Air Force Base - ability to implement MLPA there?
Future Steps

1. BRTF recommendations forwarded to DFG

2. DFG will assess and review packages

3. DFG presents its recommendations to CDFG Commission

4. CDFG will conduct public process, develop EIR, and make final decision on MLPA network

5. Next project area has not been determined yet
### MBNMS-MPA Workgroup

<table>
<thead>
<tr>
<th>MBNMS MPA EFFORT</th>
<th>2006</th>
<th>2007</th>
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<tbody>
<tr>
<td>Begin to Identify Areas of Interest in Federal Waters</td>
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<td>Release of Draft MP/DEIS</td>
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<td>Release of FEIS</td>
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<tr>
<td>Identify Suite of Alternatives for MPAs in Federal Waters</td>
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<td>Forward Alternatives to Sanctuary Advisory Council</td>
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<tr>
<td>Coordinate with PFMC and Provide Opportunity to Prepare Draft Regulations</td>
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MLPA/SMPA status report April 13, 2006