SAT Evaluations of IPA Proposal
North Central Coast Study Region

Presentation to the MLPA Science Advisory Team
May 30, 2008 Presented by Dr. Steve Gaines
MLPA Goals: Populations

1. To protect the natural diversity and function of marine ecosystems.
2. To help sustain and restore marine life populations.
3. To improve recreational, educational, and study opportunities in areas with minimal human disturbance.
4. To protect representative and unique marine life habitats.
5. Clear objectives, effective management, adequate enforcement, sound science.
6. To ensure that MPAs are designed and managed as a network.
Size Analysis Methods

- Measure individual MPA lengths and area
- Combine contiguous MPAs into single MPA complexes
- Consider level of protection
- Tabulate MPA lengths and areas relative to minimum & preferred guidelines
MPA Cluster Sizes
(Very High Protection)

Below Minimum  At Minimum  Preferable Range

Size (sq. miles)

IPA 4
2 XA 1 - 3
1 - 3
0
MPA Cluster Sizes (High Protection)

<table>
<thead>
<tr>
<th>IPA</th>
<th>0</th>
<th>1 - 3</th>
<th>4</th>
<th>2 XA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Minimum</td>
<td>0</td>
<td>1 - 3</td>
<td>4</td>
<td>2 XA</td>
</tr>
<tr>
<td>At Minimum</td>
<td>0</td>
<td>1 - 3</td>
<td>4</td>
<td>2 XA</td>
</tr>
<tr>
<td>Preferable Range</td>
<td>0</td>
<td>1 - 3</td>
<td>4</td>
<td>2 XA</td>
</tr>
</tbody>
</table>

Size (sq. miles)
MPA Cluster Sizes
(Moderately High Protection)

Below Minimum
At Minimum
Preferable Range

IPA
4
2 XA
1 - 3
0

Size (sq. miles)


**MPA Size Conclusions**

- Most MPAs meet minimum size guideline
- All MPAs meet minimum size for High/Mod High Protection in all proposals

<table>
<thead>
<tr>
<th>Avg MPA Size</th>
<th>Very High Protection</th>
<th>High Protection</th>
<th>Mod High Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3</td>
<td>12.2</td>
<td>14</td>
<td>17.7</td>
</tr>
<tr>
<td>2 XA</td>
<td>9.4</td>
<td>13.8</td>
<td>18.8</td>
</tr>
<tr>
<td>4</td>
<td>12.7</td>
<td>16.6</td>
<td>18.8*</td>
</tr>
<tr>
<td>IPA</td>
<td>11.9</td>
<td>14.7</td>
<td>19.2</td>
</tr>
</tbody>
</table>

*Proposal 4 has two more MPA Clusters than other Proposals*
Average MPA Cluster Sizes (High Protection)

- Below Minimum
- At Minimum
- Preferable Range

<table>
<thead>
<tr>
<th>Size (sq. miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>40</td>
</tr>
</tbody>
</table>

- May
- Jan
- Nov
Spacing Analysis Methods

- MPAs must meet the minimum size guidelines (9 sq mi)

- Characterize each MPA by the habitats included

- For each habitat, measure the gaps between adjacent MPAs
Maximum Gaps
(Very High Protection)

SAT guideline for Maximum spacing

0 - 30m
Rocky Intertidal
Surfgrass/Eelgrass
Sand: 0 - 30m
Sand: 30 - 100m
Rock: 30 - 100m
Sandy Beach

Miles

0 70 140 210

0 1 - 3 2 XA 4 IPA

Graph showing various environmental zones and their maximum gap distances.
Maximum Gaps
(High Protection)

SAT guideline for Maximum spacing:

- Sandy Beach
- Surfgrass/Eelgrass
- Rocky Intertidal
- Sand: 0 - 30m
- Sand: 30 - 100m
- Rocky Intertidal
- Rock: 0 - 30
- Rock: 30 - 100

Miles

0 1 - 3 2 XA 4 IPA
Maximum Gaps
(Moderately High Protection)

<table>
<thead>
<tr>
<th></th>
<th>Sandy Beach</th>
<th>Surfgrass/Eelgrass</th>
<th>Rocky Intertidal</th>
<th>Sand: 0 - 30m</th>
<th>Sand: 30 - 100m</th>
<th>Rock: 0 - 30</th>
<th>Rock: 30 - 100</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>70</td>
<td>210</td>
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<td></td>
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<tr>
<td>1-3</td>
<td>140</td>
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</tr>
<tr>
<td>2 XA</td>
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<tr>
<td>IPA</td>
<td>4</td>
<td></td>
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</tr>
</tbody>
</table>

SAT guideline for Maximum spacing:

- Sandy Beach: 70 miles
- Surfgrass/Eelgrass: 210 miles
- Rocky Intertidal: 4 miles
- Sand: 0 - 30m: 4 miles
- Sand: 30 - 100m: 4 miles
- Rock: 0 - 30: 4 miles
- Rock: 30 - 100: 4 miles
MPA Spacing Conclusions

- All Proposals have gaps that exceed guidelines for two or three habitats at Very High and High Levels of Protection
- Large gaps are all in sandy habitats
- Proposal 2 XA meets guidelines for Moderately High Protection
- Proposals 1 - 3 and 4 have a single gap (Shallow Sand) that exceeds guidelines for Moderately High Protection
- Proposal IPA has two gaps (Shallow Sand & Sandy Beach) that exceed guidelines for Moderately High Protection