



Marine Life Protection Act Initiative



MPA Decision Support Tools

North Central Coast Regional Stakeholder Group

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Tools and Support Available

- Hardcopy maps, charts
- Internet map service site (view all data layers at www.marinemap.org/mlpa)
- Doris – MPA decision support tool (view data layers, draw candidate MPAs or candidate arrays of MPAs)
- MLPA Initiative team – planning support, GIS analysis, facilitation
- SAT – scientific input and evaluation
- BRTF – policy and guidance



Decision Support Tools

A decision support tool can be anything that helps to inform and support good decision-making

Some specific software / Internet tools available for your use:

- Internet mapping service site – view data layers
- Doris (MPA decision support tool)
- California coastline aerial photos at www.californiacoastline.org
- Google Earth – imagery of study region



SAT Exploring Other Tools & Models

Presentations at August 16, 2007 SAT meeting:

- Marxan/Marzone – optimization software to identify areas to meet specific goals (A. Scholz)
- Single-species fisheries models (R. Hilborn, C. Walters)
- Population sustainability models (L. Botsford)
- Biological-economic models (C. Costello)

Utility of other models in proposal evaluation being discussed at future SAT meetings



Doris: MPA Decision Support Tool

- Doris – web-based tool
 - View data layers
 - Draw candidate MPAs and “Arrays”
 - Get reports on features captured
- Developed during central coast process
- Funding
 - MLPA Initiative
 - National MPA Science Center
 - Monterey Bay Sanctuary Foundation
- Developed by
 - IM Systems Group, Inc.
 - MLPA Initiative, state, and federal staff

Login Page

Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL



Username:

Password:

[Forgot password?](#)

[Change password](#)

Welcome

The Doris Marine Protected Areas Decision support tool is a collaborative effort between Federal and California State Agencies, the Resources Legacy Fund Foundation (RLFF) and the Marine Sciences Institute located at the University of California in Santa Barbara.

The tool is named after Doris a Sea Nymph from Greek mythology who was associated with a "bountiful" ocean. Together with her husband the sea god Nereus, she was the mother to 50 beautiful nymphs known as the Nereids.

For problems accessing this site, please contact the [webmaster](#).

For best results, please use Internet Explorer 5+



MARINEMAP

“Doris” is a sea nymph from Greek mythology who represented the bountiful ocean

Instructions

Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL

Instructions

[log-out](#)[help](#)[Get Started](#)

Step 1: Choose a Study Area

Select a study area. This will default the map to the area of interest.



Step 4: Create a system or array of MPAs

Create and name a new system of MPAs. Add you new MPAs or existing MPAs to your array.



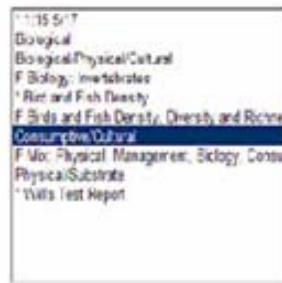
Step 2: Add Map Layers

Add the map layers that you are interested in capturing in your candidate Marine Protected Area (MPA).



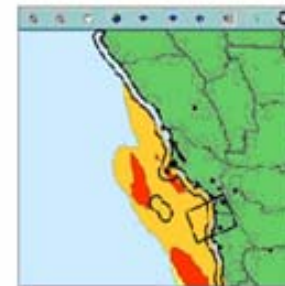
Step 5: Create or Load a Report

Select from existing reports or create a report based on your layers that you selected.



Step 3: Draw you MPA

Draw your own MPA or add existing candidate MPAs.

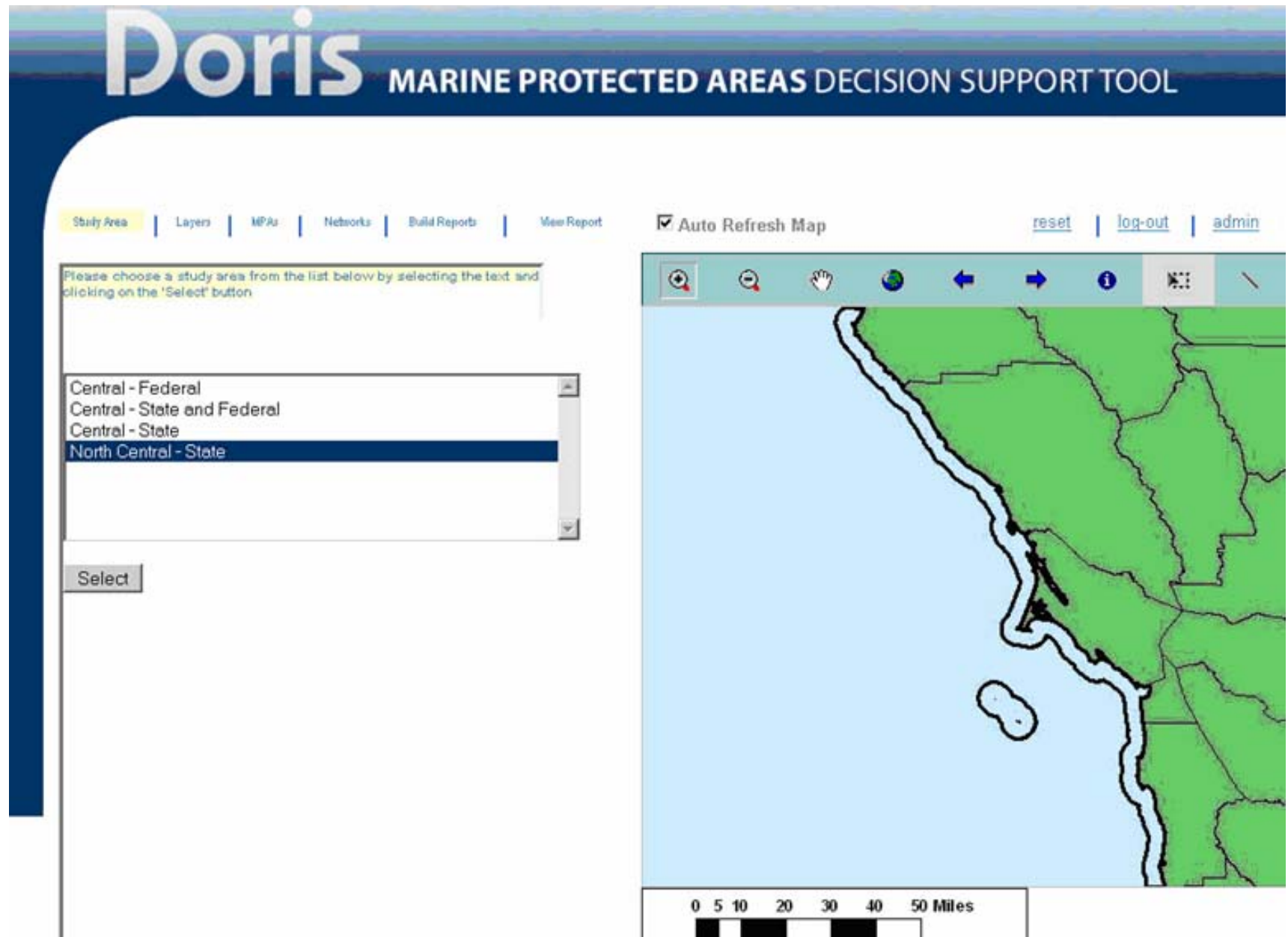


Step 6: View Reports

View statistics and compare percentages to determine if your MPA(s) provided the desired outcome.



Select Study Area



Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL

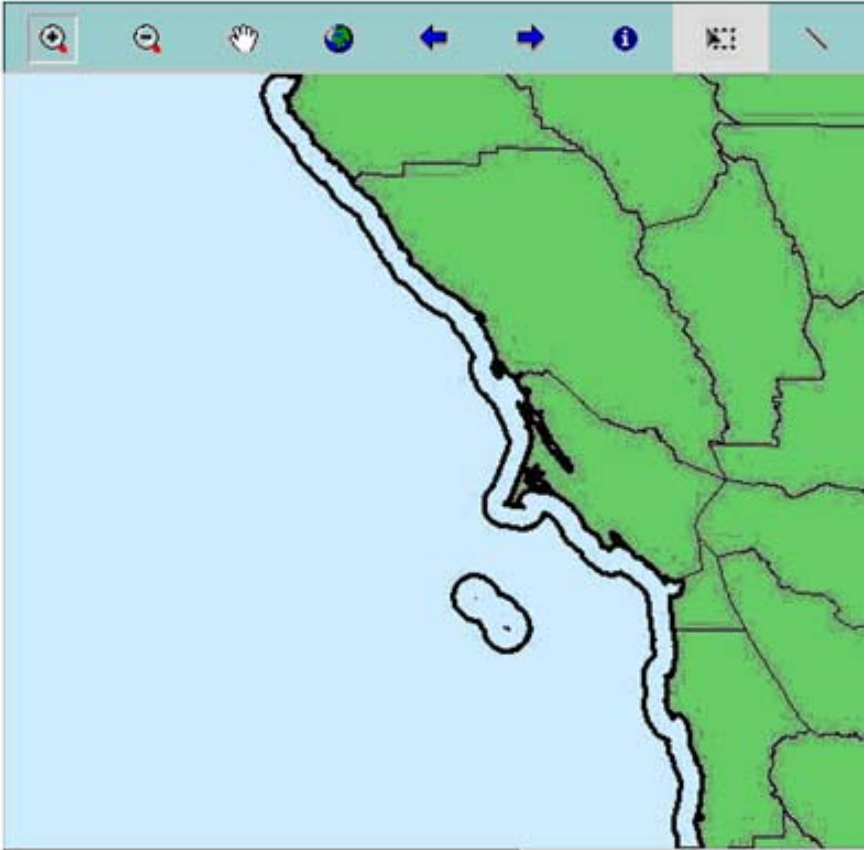
Study Area | Layers | MPAs | Networks | Build Reports | View Report

Auto Refresh Map [reset](#) | [log-out](#) | [admin](#)

Please choose a study area from the list below by selecting the text and clicking on the 'Select' button

- Central - Federal
- Central - State and Federal
- Central - State
- North Central - State**

Select



0 5 10 20 30 40 50 Miles

The screenshot displays the 'Doris' web application interface. At the top, the title 'Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL' is shown. Below the title is a navigation menu with options: 'Study Area', 'Layers', 'MPAs', 'Networks', 'Build Reports', and 'View Report'. On the right side of the header, there is a checked 'Auto Refresh Map' option and links for 'reset', 'log-out', and 'admin'. The main content area is split into two panels. The left panel contains a text box with instructions: 'Please choose a study area from the list below by selecting the text and clicking on the 'Select' button'. Below this is a scrollable list of study area options: 'Central - Federal', 'Central - State and Federal', 'Central - State', and 'North Central - State'. The 'North Central - State' option is highlighted in blue. A 'Select' button is located below the list. The right panel features a map of the Pacific Northwest coast of the United States, with marine protected areas shaded in green. The map includes standard navigation icons (home, search, pan, zoom, info, etc.) and a scale bar at the bottom indicating distances from 0 to 50 miles.

Add, Remove, Display Layers

The screenshot shows the Doris Marine Protected Areas Decision Support Tool interface within a Windows Internet Explorer browser window. The browser's address bar displays the URL <http://maps4.msi.ucsb.edu/doris/Map.aspx>. The page title is "Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL".

The interface includes a navigation menu with options: "Study Area", "Layers", "MPAs", "Arrays", "Build Repo", and "View Report". A "Study Area" dropdown is currently set to "Layers".

The main content area is divided into two sections:

- Left Panel (Layers Management):** Contains a list of layers with checkboxes and management buttons. The "Layers" section includes:
 - Central - State
 - Bird Breeding Colonies
 - Bird Biomass Densities
 - Biomass (kg/km²)
 - 0 - 14
 - 15 - 48
 - 49 - 106
 - 107 - 278
 - 279 - 821
 - California CountiesButtons for "Move Up", "Move Down", "Remove", "Move to Top", and "Zoom" are provided. Below this is a "Biological" section with a list of options and an "Add Layer" button.

- Right Panel (Map):** Displays a map of a coastal region with a color-coded overlay representing biomass density. A scale bar at the bottom indicates distances from 0 to 3.5 miles. The map includes navigation controls (pan, zoom, home, refresh) and a "Map" button.

The Windows taskbar at the bottom shows the system tray with the date and time (11:46 AM) and the start button.

Create Candidate MPAs

The screenshot shows the Doris Marine Protected Areas Decision Support Tool interface. The title bar reads "Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL". The navigation menu includes "Study Area", "Layers", "MPAs", "Arrays", "Build Repo", and "View Report". The "MPAs" tab is active.

On the left side, there is a panel with the following content:

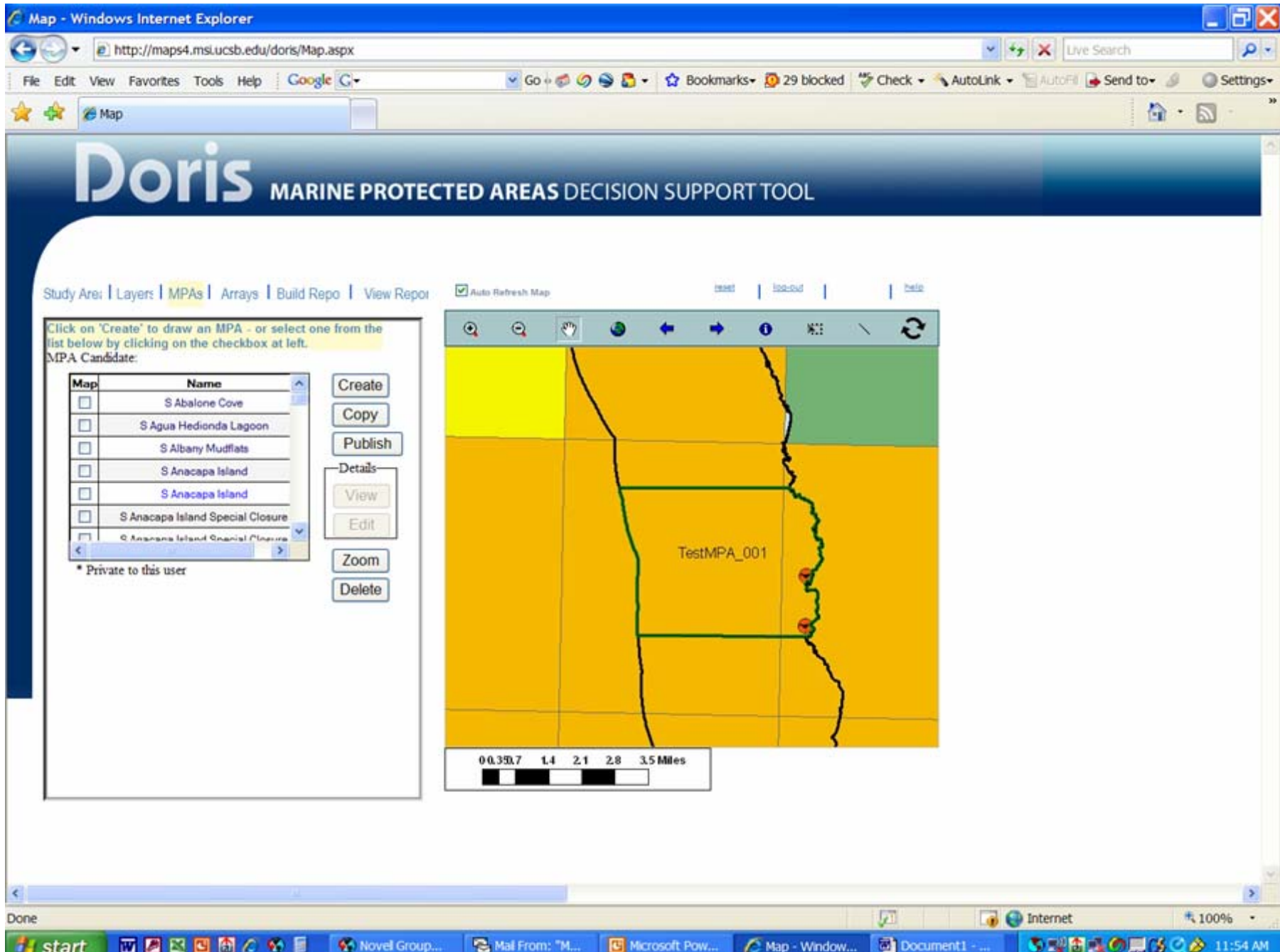
- Instructions: "Click on 'Create' to draw an MPA - or select one from the list below by clicking on the checkbox at left."
- Section: "MPA Candidate:"
- Table with columns "Map" and "Name":

Map	Name
<input type="checkbox"/>	S Abalone Cove
<input type="checkbox"/>	S Agus Hedionda Lagoon
<input type="checkbox"/>	S Albany Mudflats
<input type="checkbox"/>	S Anacapa Island
<input type="checkbox"/>	S Anacapa Island
<input type="checkbox"/>	S Anacapa Island Special Closure
<input type="checkbox"/>	S Anacapa Island Special Closure
- Buttons: "Create", "Copy", "Publish", "Details", "View", "Edit", "Zoom", "Delete".
- Text: "* Private to this user"
- Form: "New MPA: TestMPA_001"
- Buttons: "Save", "Cancel".
- Checkbox: "Clip to Study Area" (checked).

On the right side, there is a map interface with a yellow background and a green rectangular boundary. A scale bar at the bottom indicates distances of 0.0, 0.7, 1.4, 2.1, 2.8, and 3.5 Miles. The map also shows a coastline and several red markers.

MPAs drawn outside the regional boundary can be “clipped”

Create Candidate MPAs



Map - Windows Internet Explorer
http://maps4.msi.ucsb.edu/doris/Map.aspx

Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL

Study Area | Layers | **MPAs** | Arrays | Build Repo | View Report

Auto Refresh Map [reset](#) | [log-out](#) | [help](#)

Click on "Create" to draw an MPA - or select one from the list below by clicking on the checkbox at left.
MPA Candidate:

Map	Name
<input type="checkbox"/>	S Abalone Cove
<input type="checkbox"/>	S Agua Hedionda Lagoon
<input type="checkbox"/>	S Albany Mudflats
<input type="checkbox"/>	S Anacapa Island
<input type="checkbox"/>	S Anacapa Island
<input type="checkbox"/>	S Anacapa Island Special Closure
<input type="checkbox"/>	S Anacapa Island Special Closure

* Private to this user

Create
Copy
Publish
Details
View
Edit
Zoom
Delete

TestMPA_001

0 0.35 0.7 1.4 2.1 2.8 3.5 Miles

Done
start | Novel Group... | Mail From: "M... | Microsoft Pow... | Map - Window... | Document1 - ... | Internet | 100% | 11:54 AM

Sharing Candidate MPAs

Candidate MPAs can be kept private (only viewable with your password) or shared (“published”) so others who log on can see

Click on 'Create' to draw an MPA - or select one from the list below by clicking on the checkbox at left.

MPA Candidate:

Map	Name
<input type="checkbox"/>	* A Test - Small MPA
<input type="checkbox"/>	* AA Test - Bigger MPA
<input checked="" type="checkbox"/>	* AAA Test
<input type="checkbox"/>	* AAAAAA
<input type="checkbox"/>	S Alder Creek SMCA
<input type="checkbox"/>	S Alder Creek SMCA Package1 06020
<input type="checkbox"/>	S Alder Creek SMR

* Private to this user

Create
Copy
Publish
Details
View
Edit
Zoom
Delete

Author: will
Date: 08/06/2007
Description: A test MPA for the Doris User's Manual.
Type: SMCA

Adding MPA Details

Dôris MARINE PROTECTED AREAS DECISION SUPPORT TOOL

MPA Details

View or Edit information about the selected MPA. Click the "Save" button to save changes or click "Cancel" to close window without saving changes.

Name:

Description:

Boundaries:

Allowable Uses:

Designation of MPA:

- Marine Conservation Area
- Marine Reserve
- Marine Park
- Other
- New Designation

Save

Cancel

Combining Candidate MPAs into “Arrays”



Study Area | Layers | MPAs | Arrays | Build Report | View Report

Create a new array or select an existing one from list below.

Array:

Map	Name
<input checked="" type="checkbox"/>	* AAATestArray_TESTONLY
<input type="checkbox"/>	S Existing North Central Coast MPAs
<input type="checkbox"/>	S New Central Coast MPAs

Create
Copy
Publish
Details
Edit
View
Delete

* Private to this user

Author: ugoertz
Date: 08/21/2007
Description: Test Array to display tool

Name: AAATestArray_TESTONLY **Save** **Cancel**

Description: Test Array to display tool

Details: Created for RSG Demonstration


Available MPA Candidates:

- Abalone Cove
- Agua Hedionda Lagoon
- Albany Mudflats
- Anacapa Island
- Anacapa Island
- Anacapa Island Special Closure
- Anacapa Island Special Closure
- Ano Nuevo Invertebrate Area
- Arrow Point to Lion Head Point (Catalina Island) Invertebra
- Atascadero Beach
- Bair Island
- Batiquitos Lagoon




Add
Remove
Clear List

In/Added to Array:
TestMPA_001
TestMPA_002
TestMPA_003

Array Color: Use individual MPA colors. Choose a custom color. Current Color:

Predefined Colors: 

Custom Color:

	-	255	+
	-	255	+
	-	255	+

Selecting candidate MPAs to include in an “array”. Editing candidate arrays.

Building Reports

Doris MARINE PROTECTED AREAS DECISION SUPPORT TOOL

Study Area | Layers | MPAs | Arrays | **Build Repo** | View Report

Auto Refresh Map

08:00

100.00%

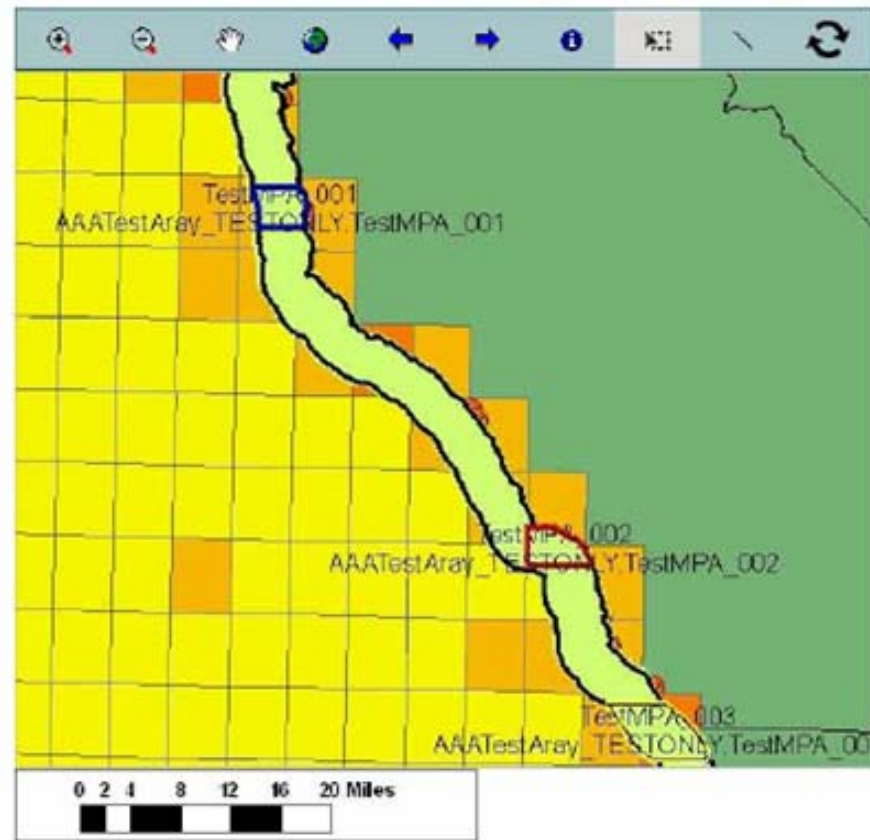
08/2

Build a new report or select existing one from the list below.

Cultural
Habitat
S MPA Area
Recreational Fisheries
Select Species

Select

* Private to this user
SELECTED REPORT:
Habitat



Viewing Reports

The screenshot displays the Doris Marine Protected Areas Decision Support Tool interface. The top navigation bar includes links for Study Area, Layers, MPAs, Arrays, Build Repo, and View Report. The main content area is divided into two sections: a list of MPA candidates and a map of the study area.

MPA Candidates:

- [TestMPA_001](#)
- [TestMPA_002](#)
- [TestMPA_003](#)
- [AAATestArray_TESTONLY.TestMPA_001](#)
- [AAATestArray_TESTONLY.TestMPA_002](#)

MPA Candidate Arrays:

- [AAATestArray_TESTONLY](#)

The map on the right shows a coastal area with a grid overlay. A green line represents the coastline. Three MPA candidates are highlighted with colored boxes: TestMPA_001 (orange), TestMPA_002 (red), and TestMPA_003 (yellow). The map also shows the AAATestArray_TESTONLY array. A scale bar at the bottom indicates distances from 0 to 20 miles.

Only selected candidate MPAs or arrays will appear in a report



Types of Reports

- Habitat
- Select species
- Recreational fisheries
- Commercial fisheries
- Cultural



Summary

- Doris (and the IMS site) will be updated with new information as it becomes available
 - We will notify you of updates
- New report formats and improvements still underway
 - We welcome your suggestions
- Individual passwords provided
- Breakout session for closer look at tool