

AGENDA

- Review from last meeting
- Study design refinements
 - Biological component
 - Reference watershed selection
- Pilot study options

At Our Last Meeting

- Need for ASBS monitoring
 - Northern Cal has same issues
- Desire for “natural water quality”
 - Focus on receiving water
- Primary concern was wet weather (2008/09)
 - Pilot study this winter

Goals of the SWRCB

- Want to initiate a statewide ASBS monitoring program
 - Linkage to large regional programs is a plus
- Have some flexibility in monitoring design
- Willing to provide monitoring trade-offs to regulated stakeholders

Monitoring Questions

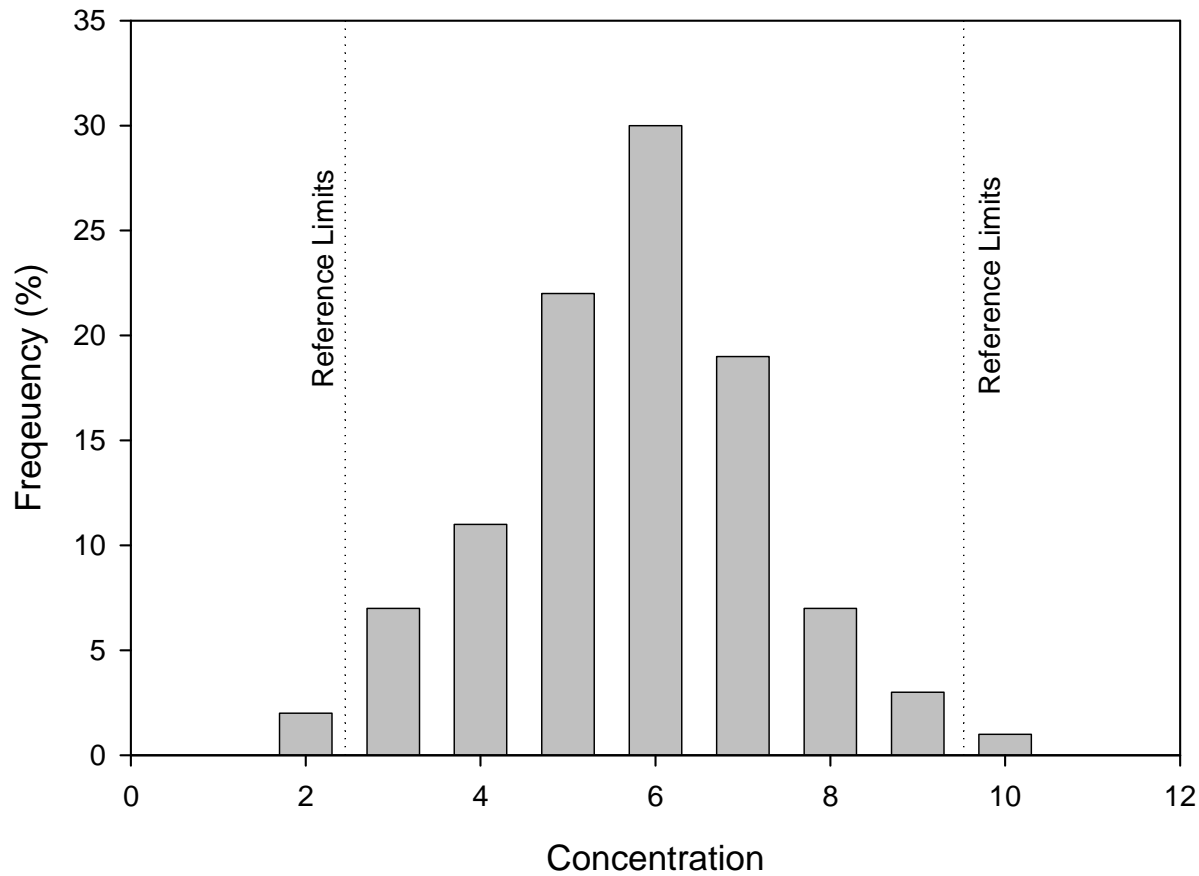
- What is the range of natural conditions at reference intertidal locations?
- How does this range of natural water quality compare to ASBS sites during wet weather?
 - Dry weather?
- What is the extent of impact at shorelines in ASBS with and without discharges?

Three Phase Approach

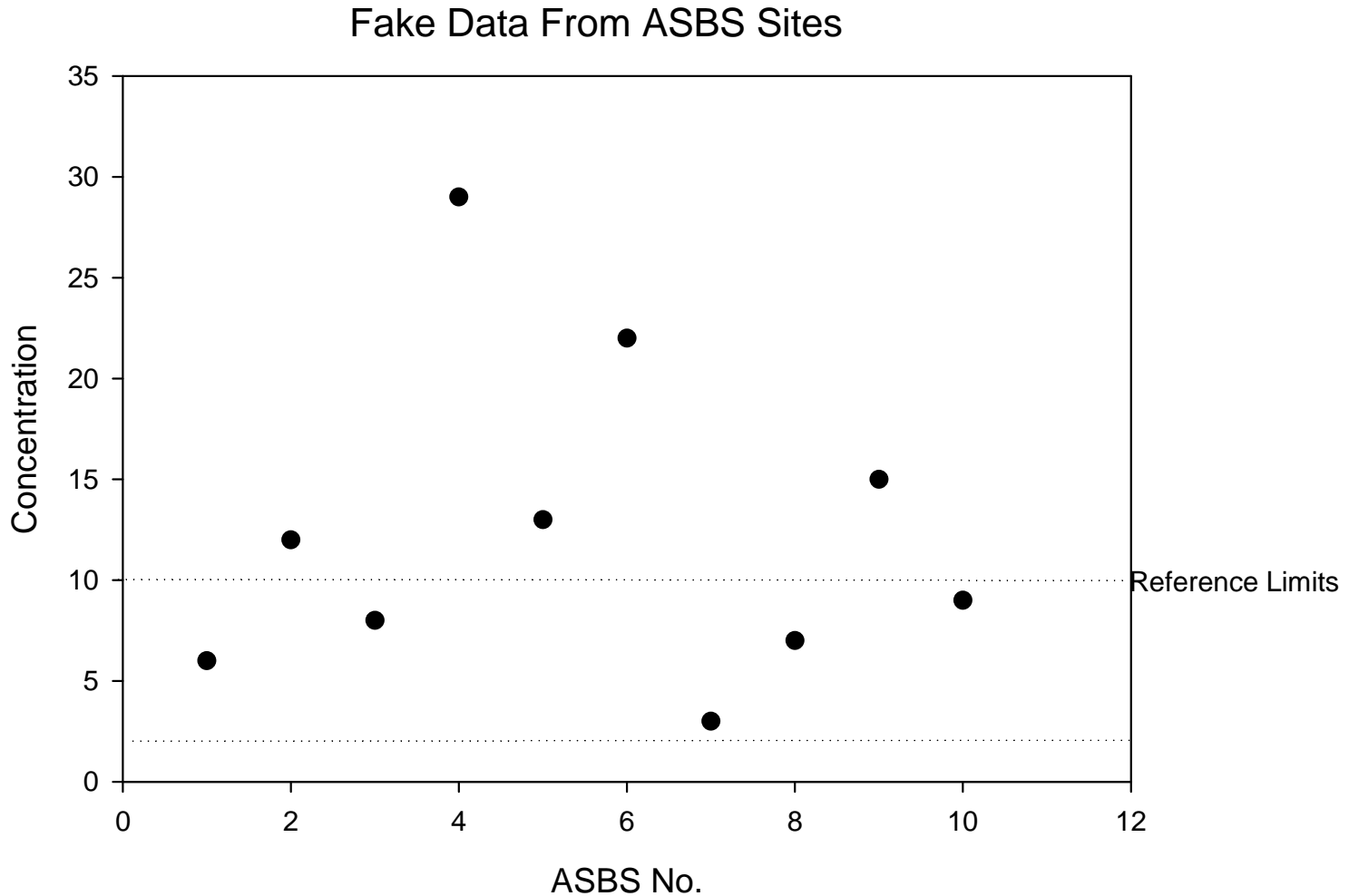
- Develop natural water quality “limits”
- Compare specific ASBS locations to natural water quality limits
 - Near discharges
- Estimate extent of ASBS shoreline that exceeds natural water quality limits

Defining Natural Water Quality

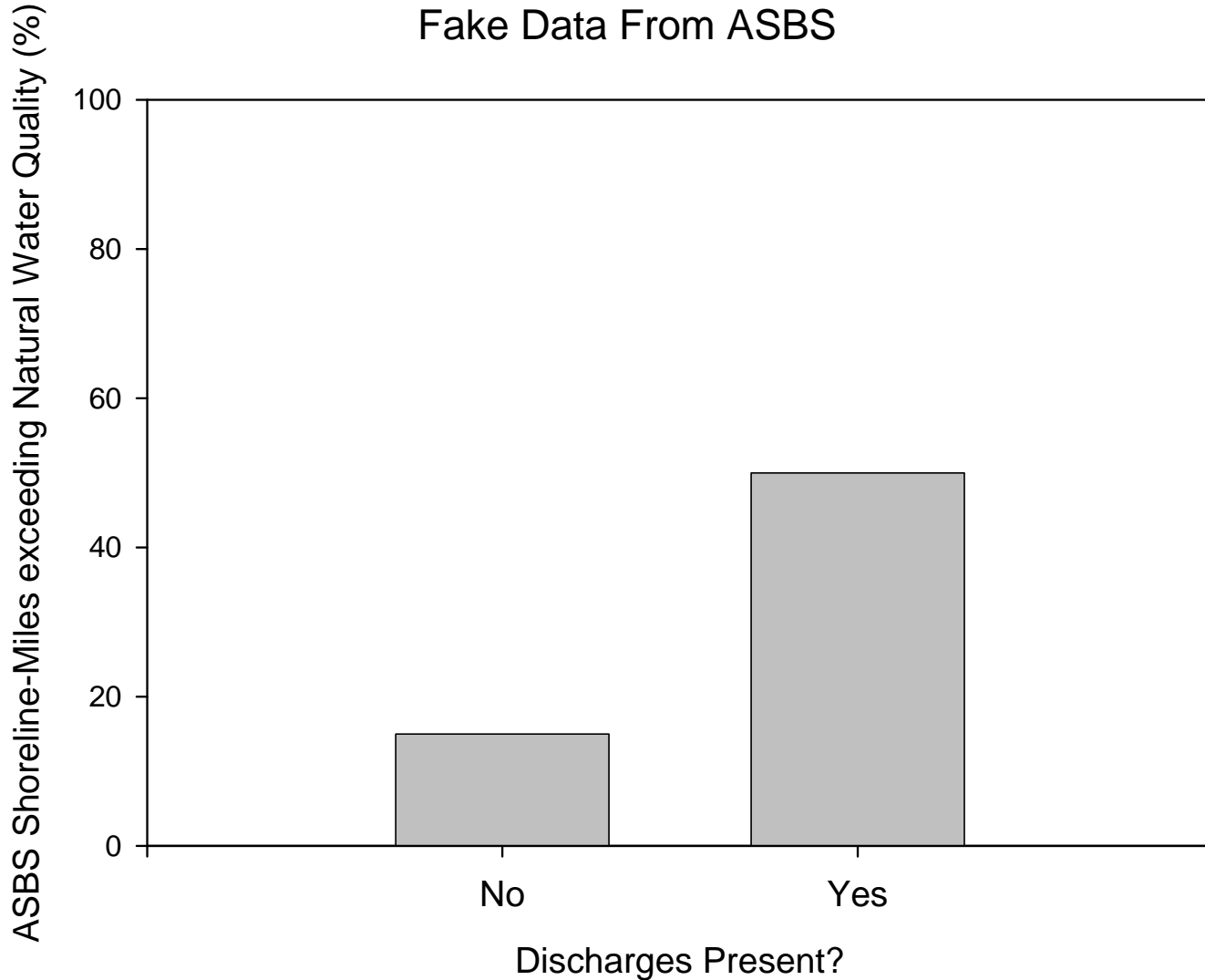
Fake Data From Reference Sites



Comparing ASBS to NWQ Limits



Extent of ASBS Impacts



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Site Selection

- Two types of sites to discuss
- Reference sites
- ASBS sites

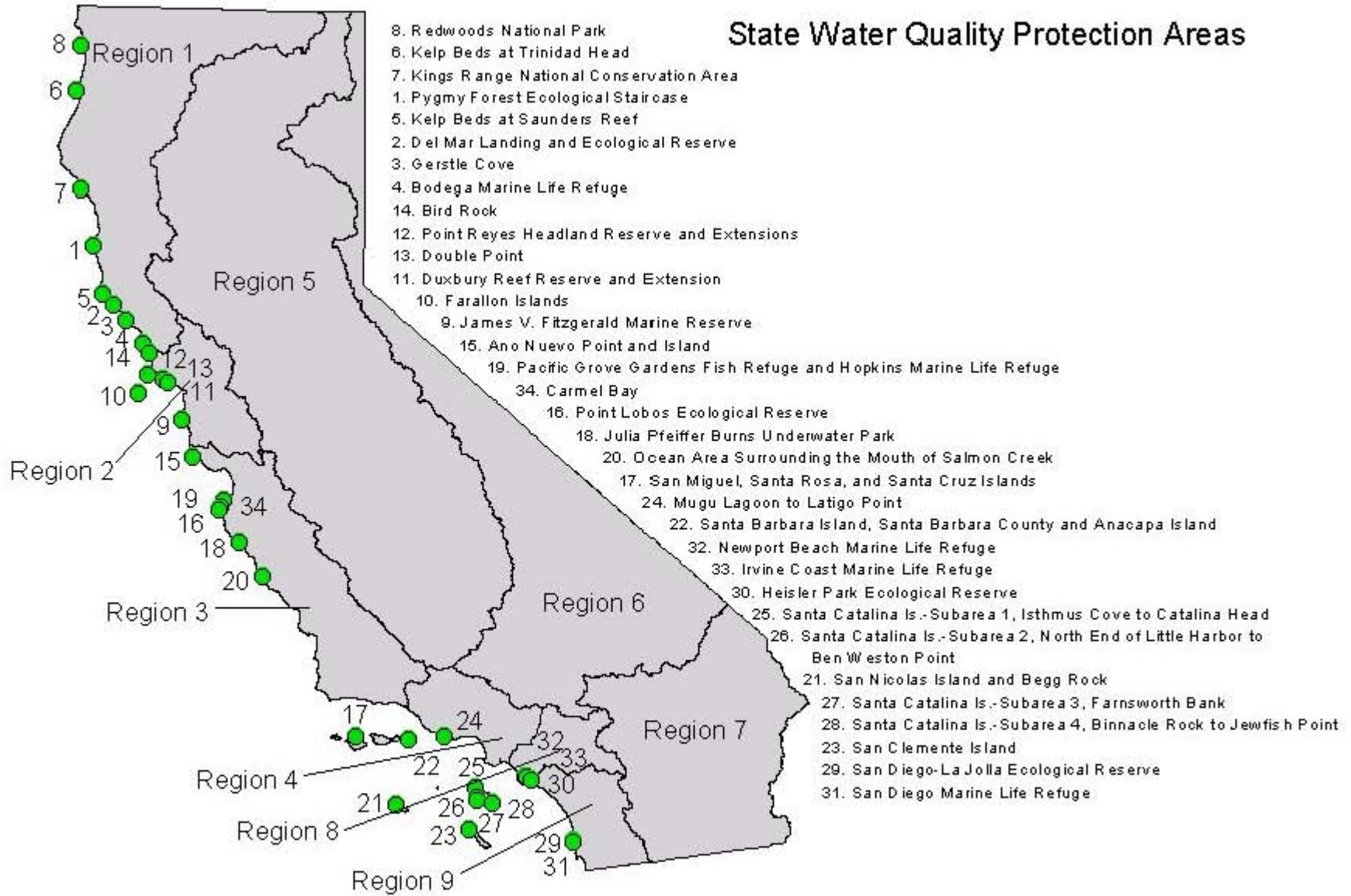
Reference Site Criteria

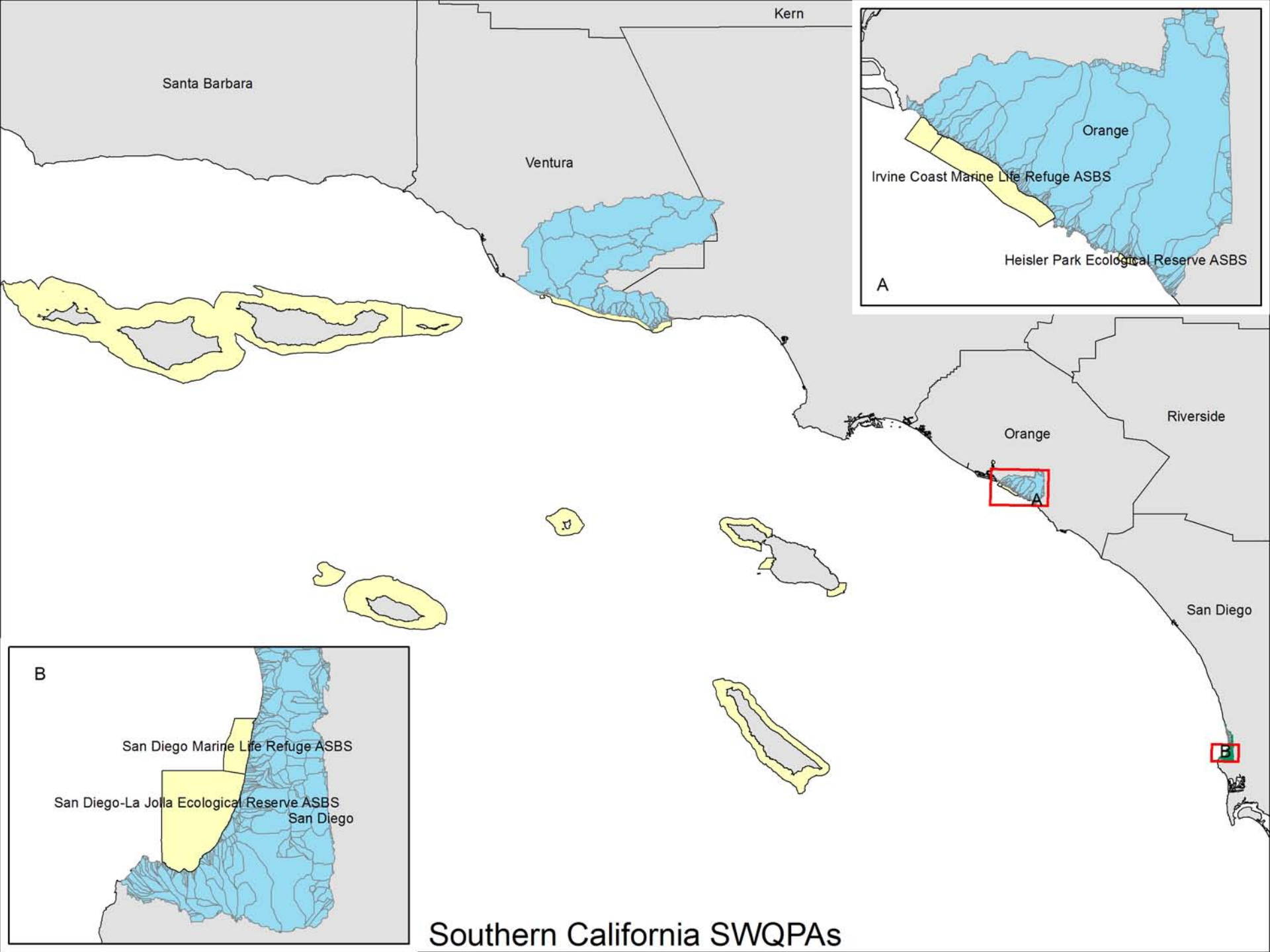
- Open beach with breaking waves
- Not 303(d) listed
- Minimal human disturbance
 - Land use
- Catchment size within the range of ASBS discharges

GIS Information Used For Site Selection

- SWRCB coastline layer
- SWRCB's 2006 303(d) list
- NOAA's land cover data set
- CalWater watershed layer with some local data enhancements

State Water Quality Protection Areas





Santa Barbara

Kern

Ventura

Orange

Irvine Coast Marine Life Refuge ASBS

Heisler Park Ecological Reserve ASBS

A

Riverside

Orange

A

San Diego

B

B

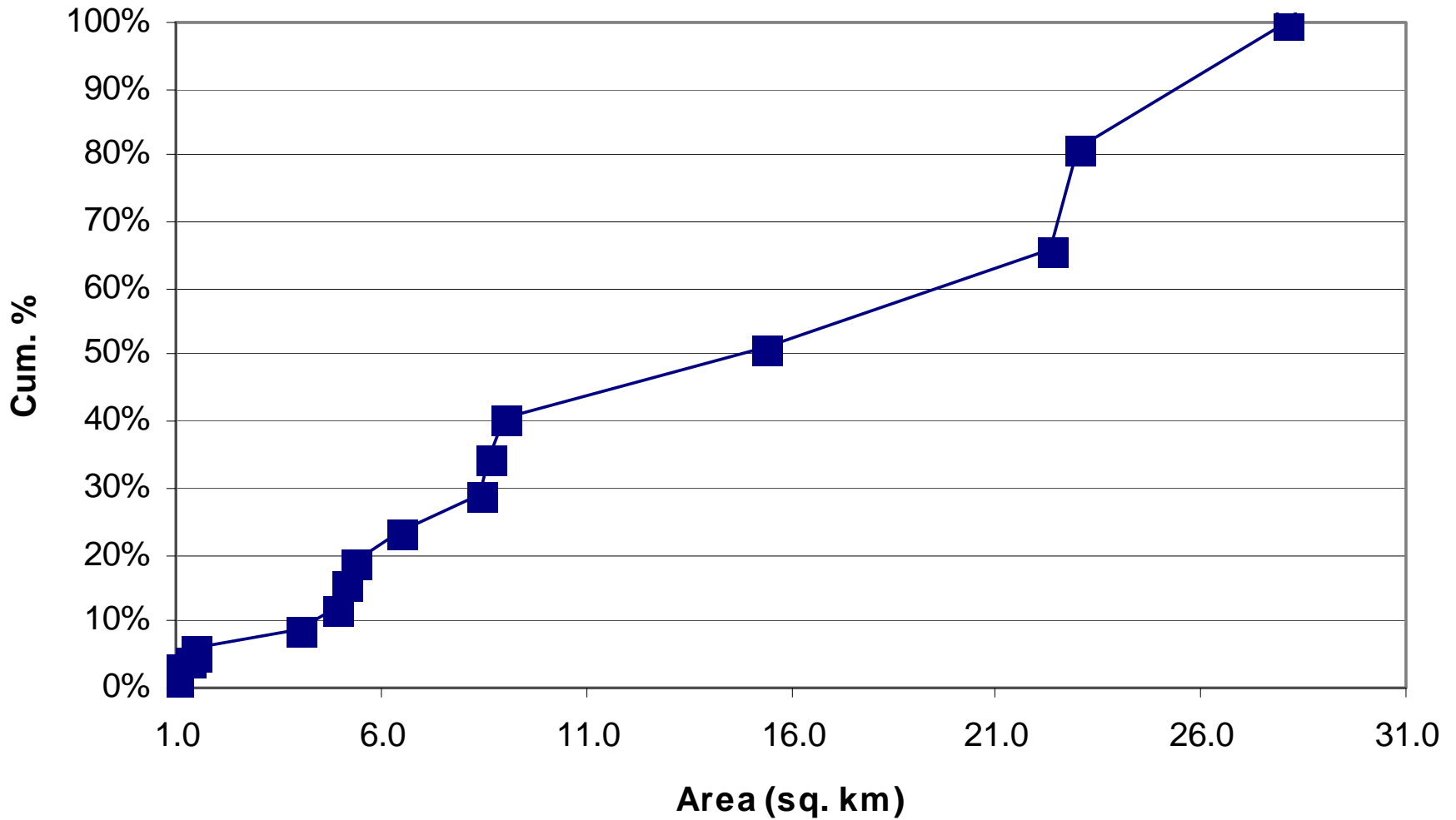
San Diego Marine Life Refuge ASBS

San Diego-La Jolla Ecological Reserve ASBS

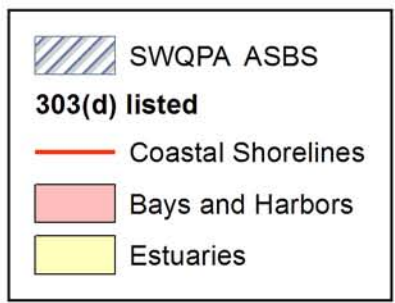
San Diego

Southern California SWQPAs

All mainland ASBS watersheds-Excluding Calleguas

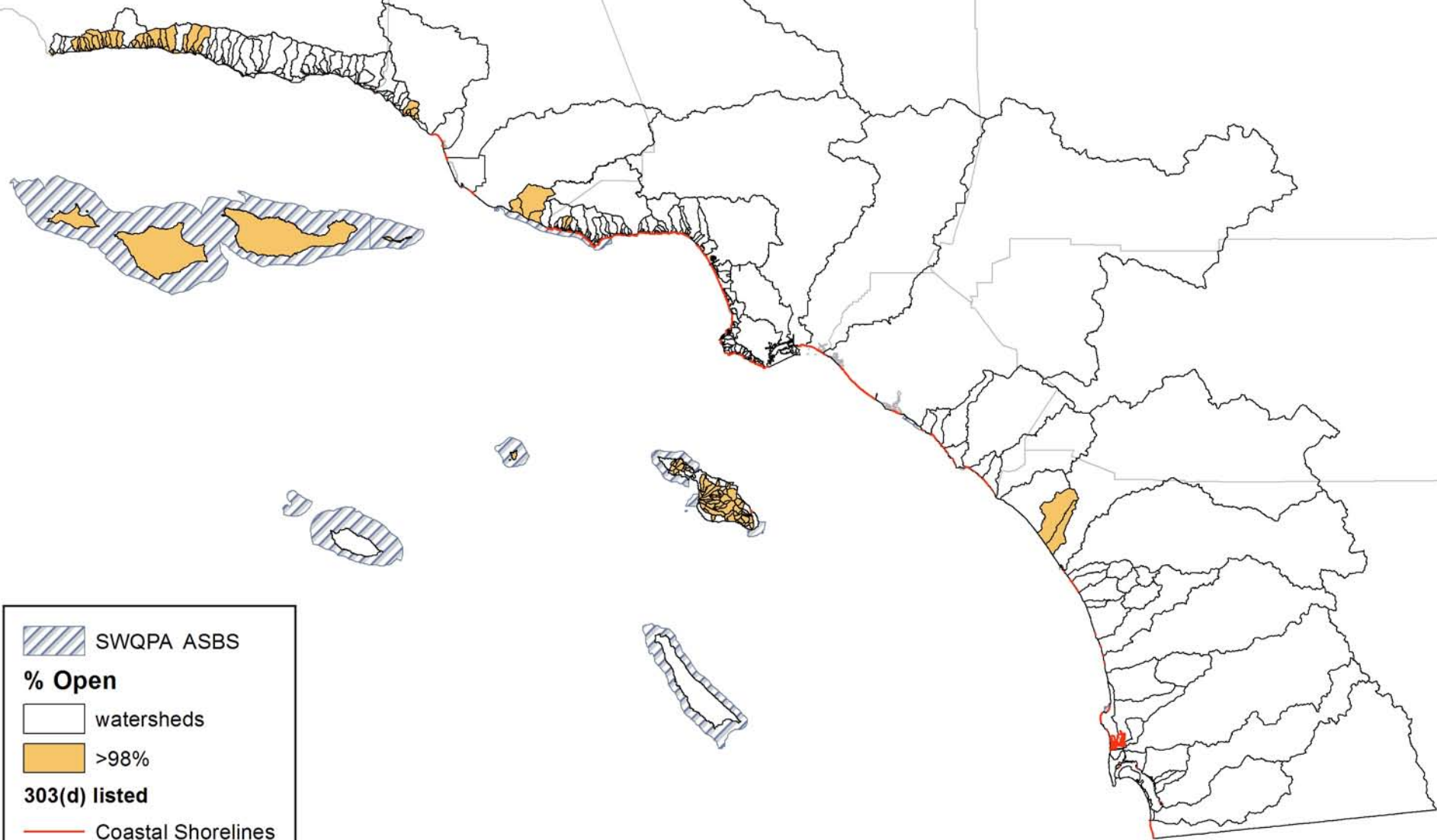


303(d) Listed Beaches, Bays/Harbors, and Estuaries-2006

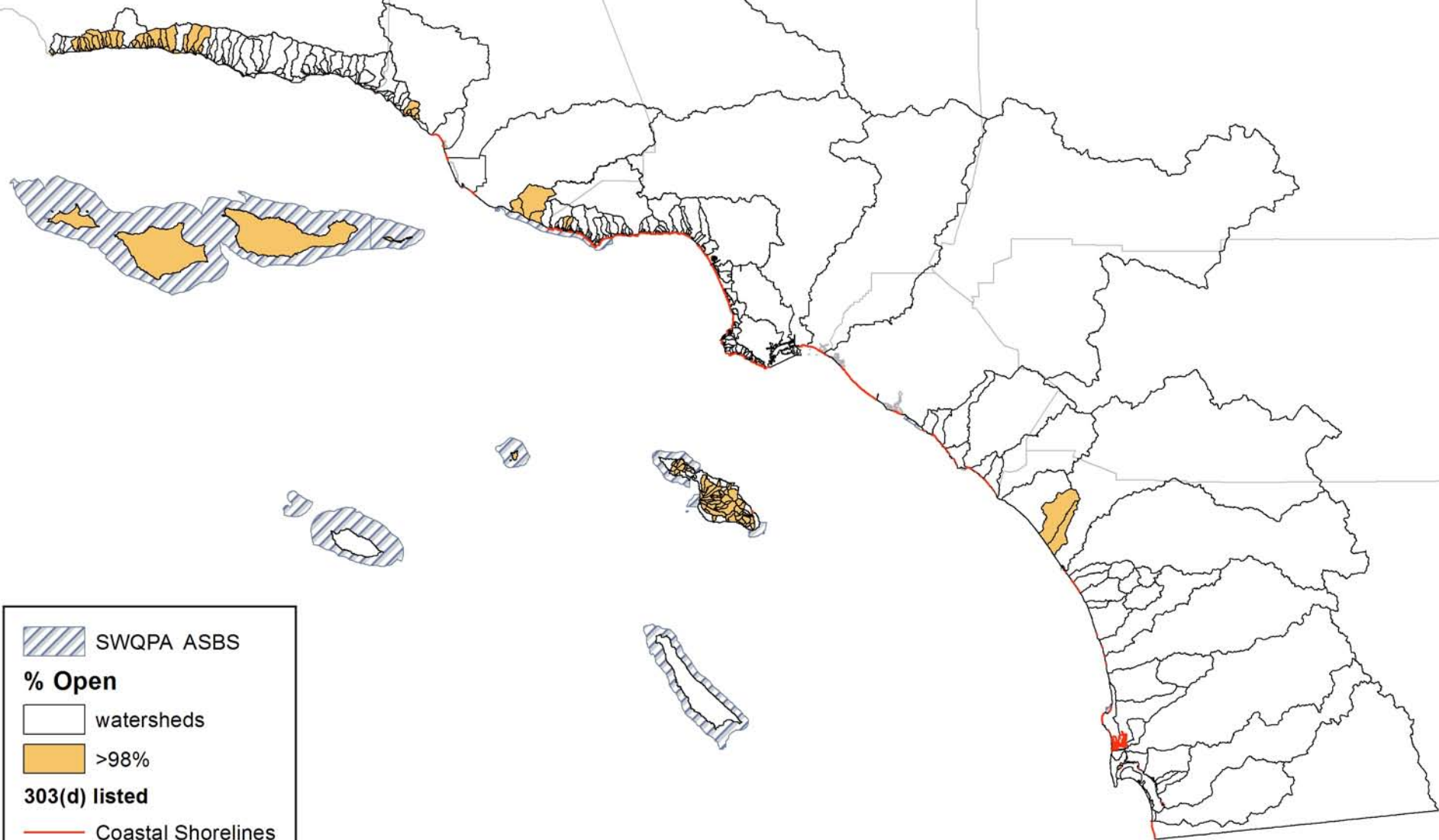




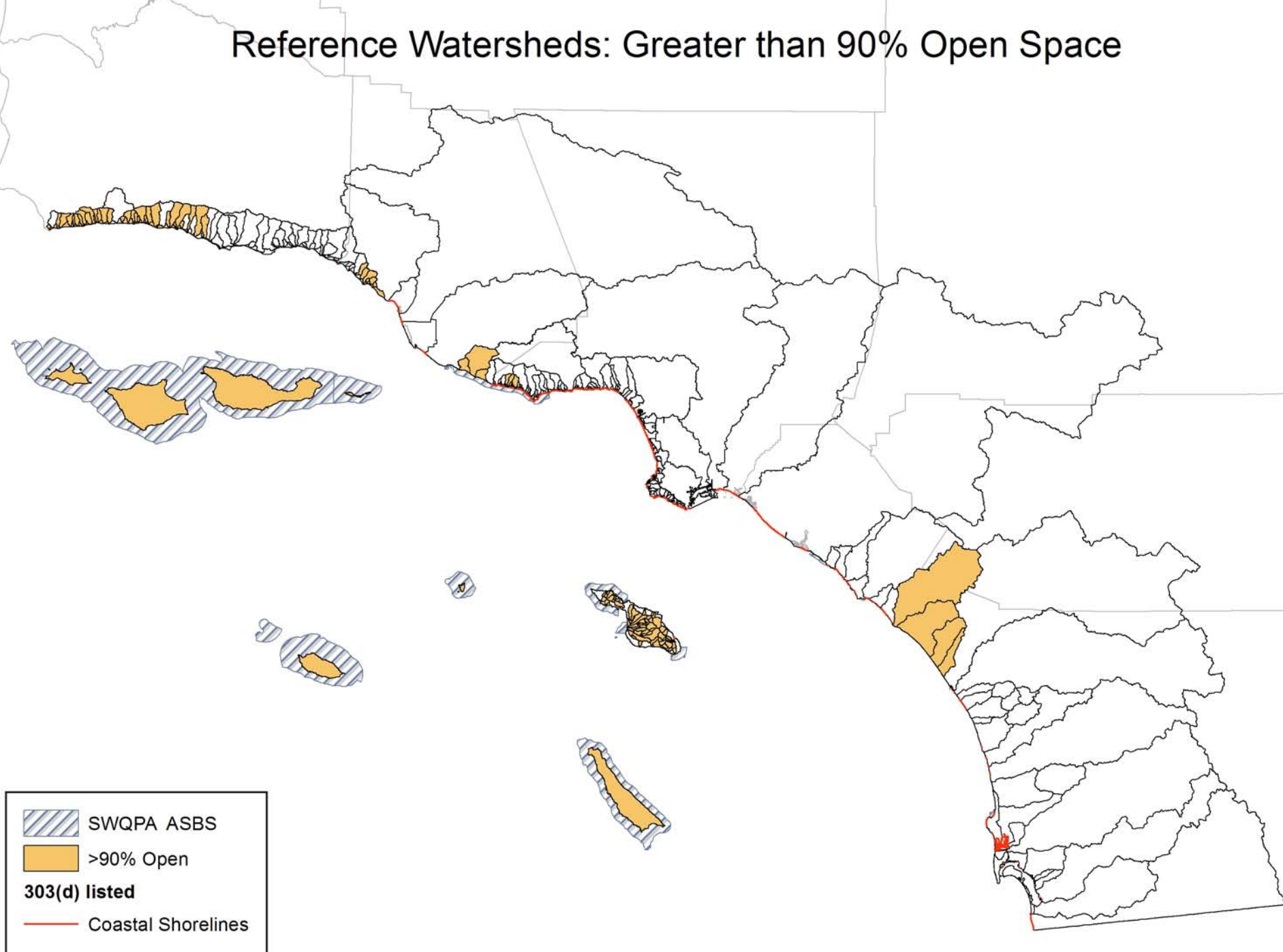
Reference Watersheds: Greater than 98% Open Space



Reference Watersheds: Greater than 95% Open Space



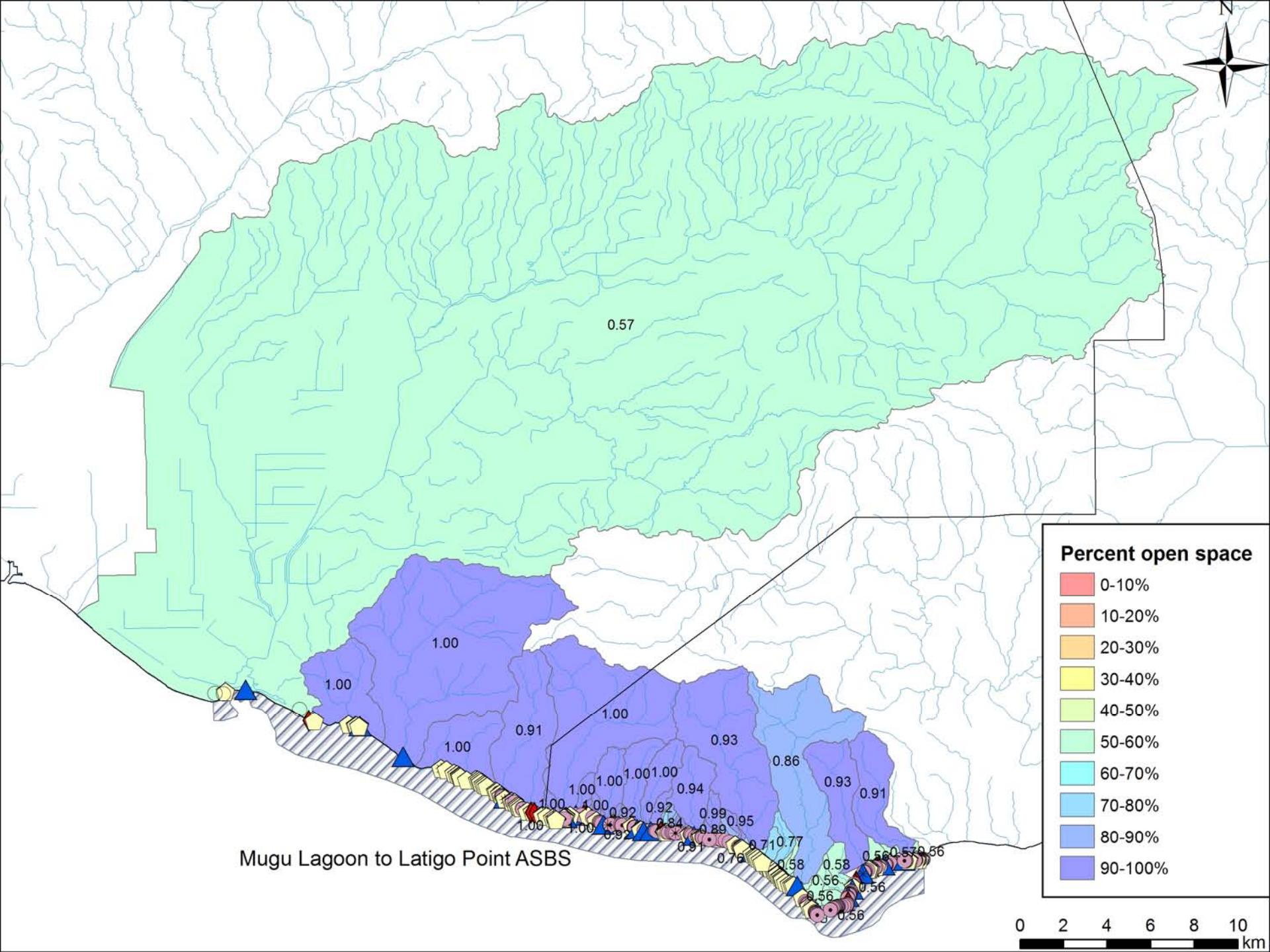
Reference Watersheds: Greater than 90% Open Space



Site Selection

- Two types of sites to discuss
- Reference sites
- ASBS sites





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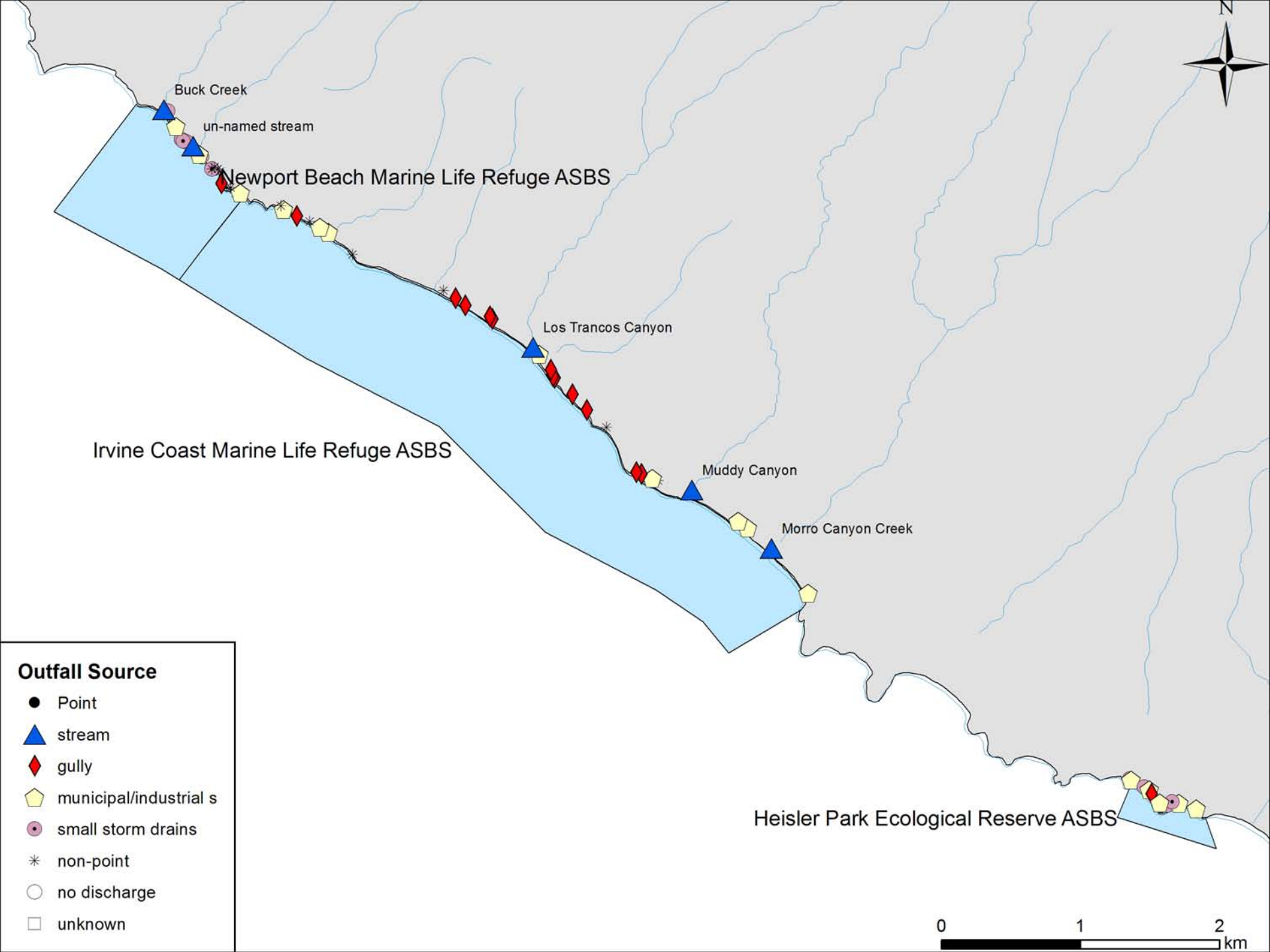
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Buck Creek

un-named stream

Newport Beach Marine Life Refuge ASBS

Los Trancos Canyon

Irvine Coast Marine Life Refuge ASBS

Muddy Canyon

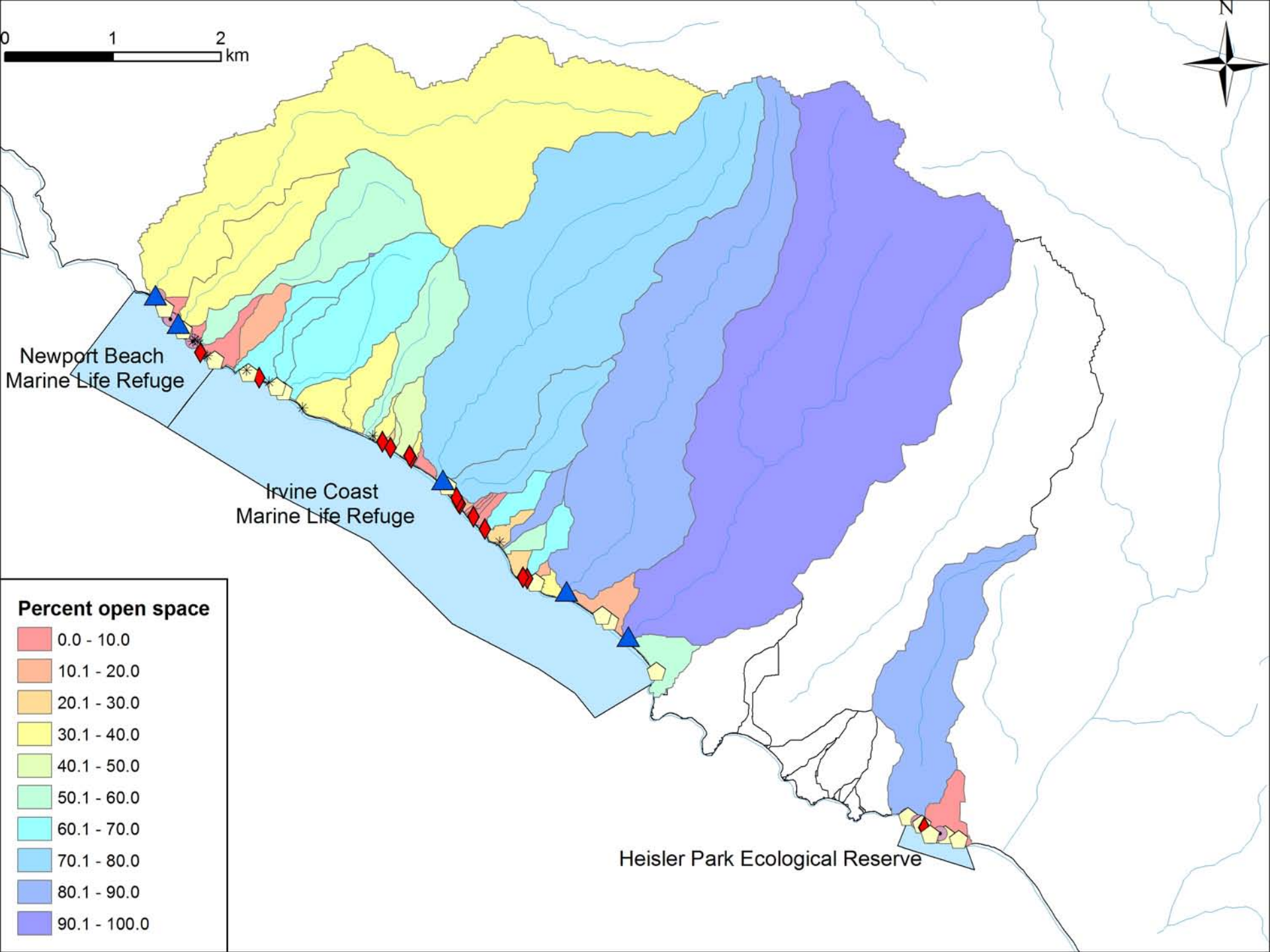
Morro Canyon Creek

Outfall Source

- Point
- ▲ stream
- ◆ gully
- ⬠ municipal/industrial s
- small storm drains
- * non-point
- no discharge
- unknown

Heisler Park Ecological Reserve ASBS

0 1 2 km





San Diego Marine Life Refuge ASBS

San Diego-La Jolla
Ecological Reserve ASBS

San Clemente
Island ASBS

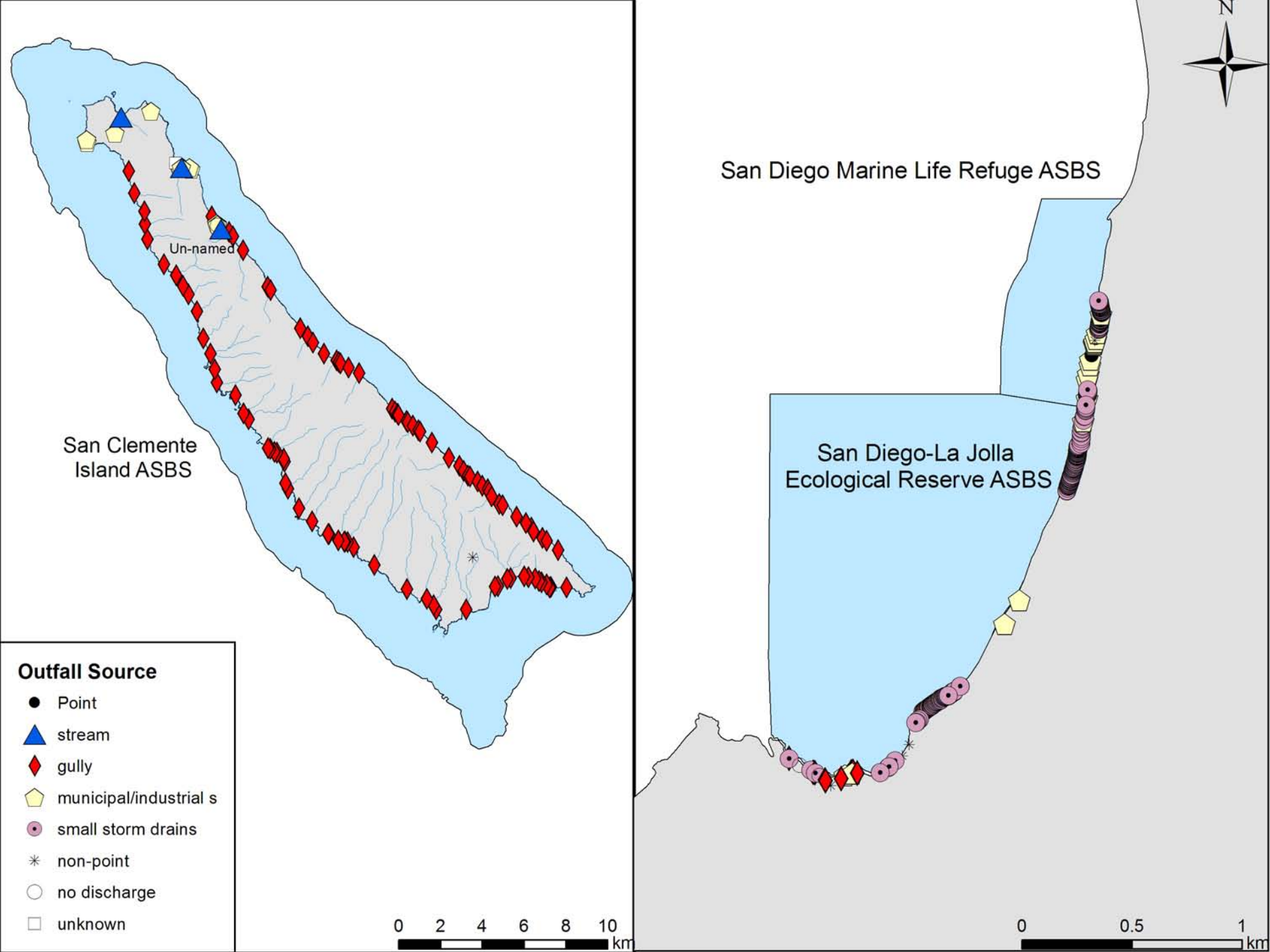
Un-named

Outfall Source

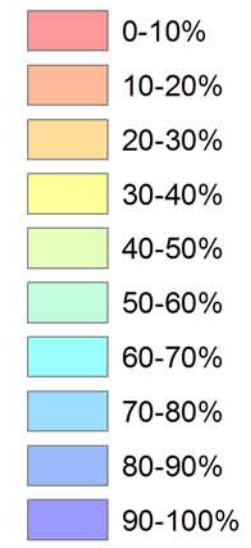
- Point
- ▲ stream
- ◆ gully
- ◡ municipal/industrial s
- small storm drains
- * non-point
- no discharge
- unknown

0 2 4 6 8 10 km

0 0.5 1 km

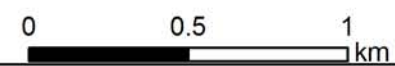
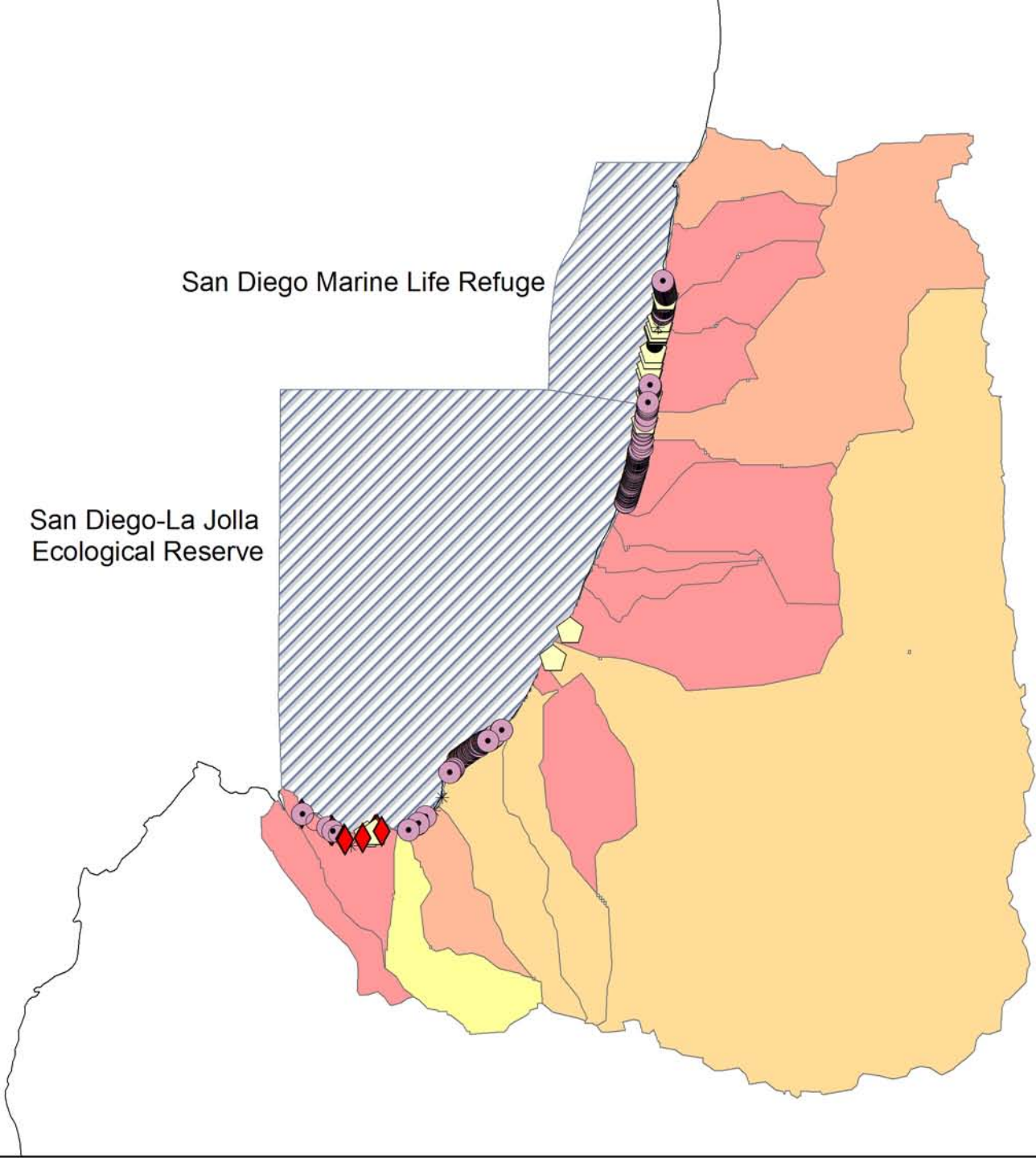


Percent open space

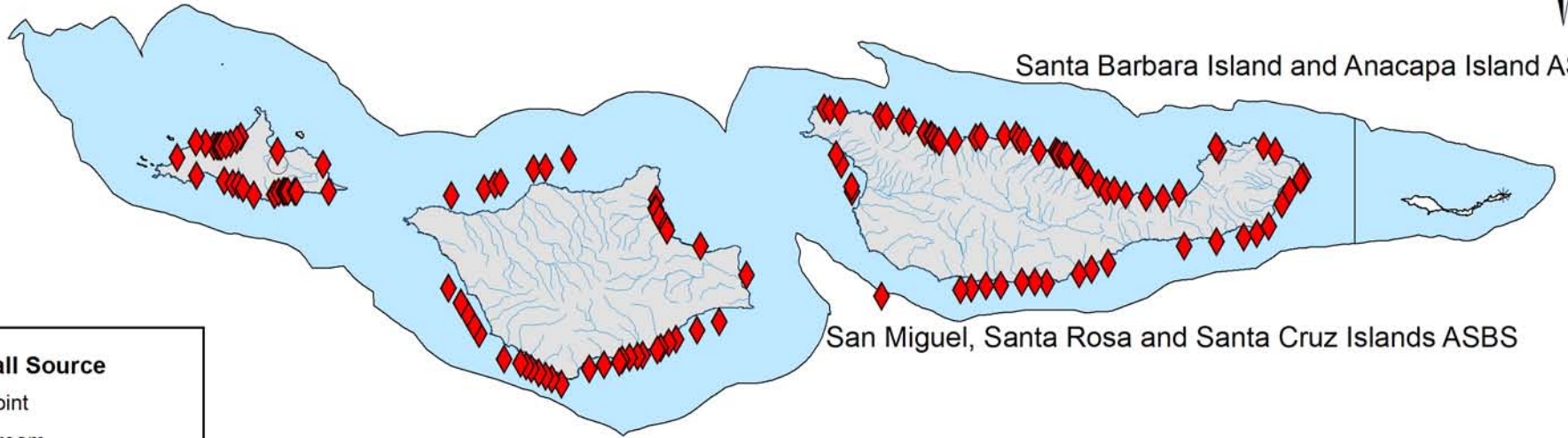


San Diego Marine Life Refuge

San Diego-La Jolla Ecological Reserve



0 4 8 12 16 20 km

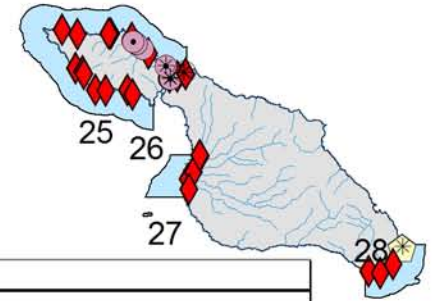
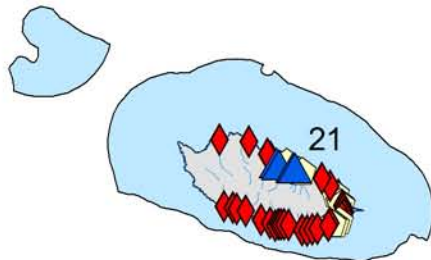


Santa Barbara Island and Anacapa Island ASBS

San Miguel, Santa Rosa and Santa Cruz Islands ASBS

Outfall Source

- Point
- ▲ stream
- ◆ gully
- ◊ municipal/industrial s
- small storm drains
- * non-point
- no discharge
- unknown



SWQPA_NUM	SWQPANAME
21	San Nicholas Island and Begg Rock ASBS
22	Santa Barbara Island and Anacapa Island ASBS
23	San Clemete Island ASBS
25	Santa Catalina Island-Subarea One, Ismuth Cove to Catalina Head ASBS
26	Santa Catalina Island-Subarea Two, North End of Little Harbor to Ben Weston Point ASBS
27	Santa Catalina Island-Subarea Three, Farnsworth Bank Ecological Reserve ASBS
28	Santa Catalina Island-Subarea Four, Binnacle Rock to Jewfish Point ASBS

0 5 10 15 20 25 km

Site Selection

- Two types of sites to discuss
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