

San Nicolas Island Invasive Plant and Biosecurity Program

lessons learned and next steps

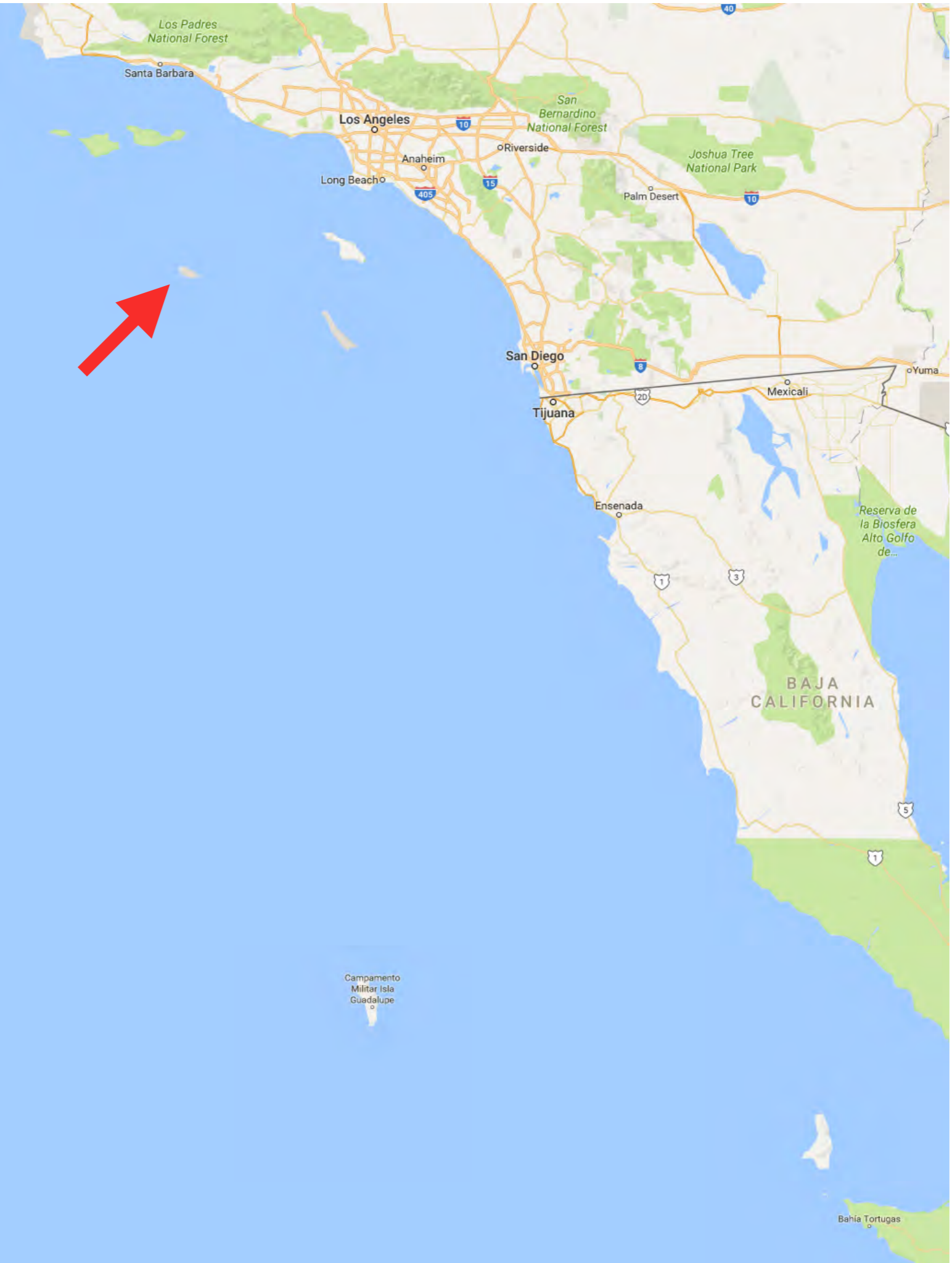
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Natural Resources Manager, San Nicolas Island
Naval Base Ventura County

SNI Facts

- ~ 65 miles off-shore
- Owned by US Navy
- Part of the California Islands
- ~9x3 miles, 910ft Elevation
- 137 native vascular plant taxa, 141 non-native, 15 endemic to CA Islands, 2 endemic to SNI



- Farallons Islands
- Año Nuevo
- San Miguel
- Santa Rosa
- Santa Cruz
- Anacapa
- Santa Barbara
- Catalina
- San Nicolas
- San Clemente
- Islas Coronado
- Islas Todos Santos
- San Martin
- San Jeronimo
- Guadalupe
- San Benito
- Cedros
- Natividad



Leptosyne gigantea



Buckwheat Badlands



Pinniped Covered Coastal Beach Strand



How we manage all of
this...

Biosecurity

- SNI Biosecurity Plan
- Signed Biosecurity Instruction with “teeth”
- Plan/INST Placed in contracts in RFP stage
- Navy currently funding a biosecurity technician with CHINPS and TNC



Invasive Plant Program

- Funded by federal drivers: Sikes Act, EO 13112, ESA
- Started in early 1980's with fennel and garland chrysanthemum removal
- Currently targets ~dozen species
- Last major mapping effort by Junak in ~2001



Constraints, and how we work with them

- UXO: Map out, make contractors aware of situation, EOD then removes them.
- Archeology: Programmatic agreement with SHIPO for spraying weeds on SNI
- Funding: Try to stress that multiple years of effort can be lost by missing one season.
- Logistics: Try to plan ahead, but this can be challenging...SNI requires a plane flight, separate cargo barges or flights for herbicide transport, and is typically short on housing.
- ESA: Programmatic BO with USFWS





Historical Vectors

- Sheep farmers (animal feed, new species for them to eat)
- Navy (erosion control efforts)
- Ventura Nurserymen's Association (1970)





Wendell Thompson of Santa Susana plants bushes and trees on leeward side of steep slopes.

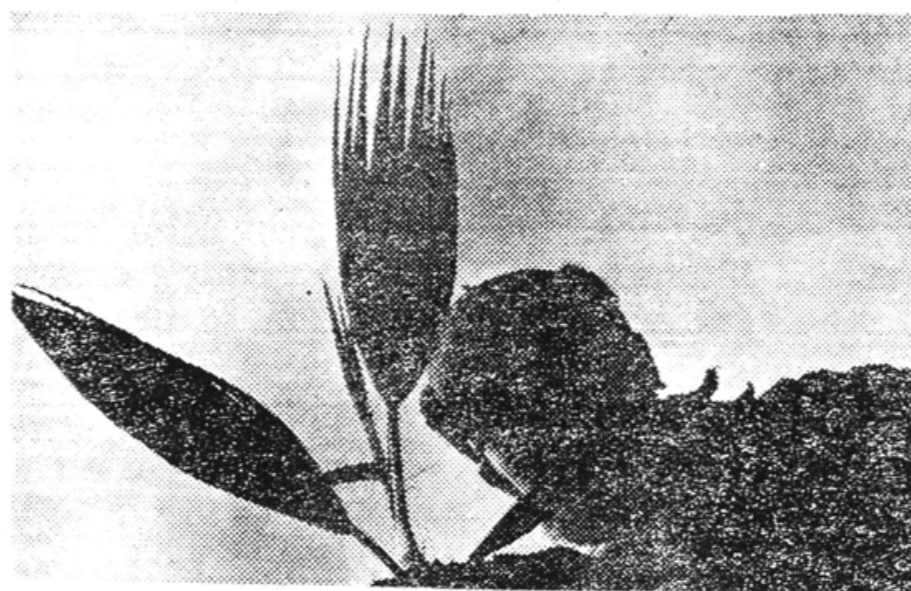
Then Came The Nurserymen

A lone tree was once the high-point of a visitors tour to the Point Mugu Naval Air Station outlying field and Naval Facility on San Nicholas — but not anymore.

who observe them, that what they planted would survive. The trees were junipers, pines, eucalyptus and Washington palms. Ground cover was rosemary prostrata, myoporum, and osteospermum.



Austen Perley, Ventura Park Dept., points out an arid area for Harry Camacho to plant ground cover on San Nicolas Island. Perley, four nurserymen and a college student spent a weekend on the island planting various types of shrubby plants and trees as a civic project. (U. S. Navy Photos).



The Ventura Nurserymen's Association changed all this recently. But earlier, the story of the lonely tree went like this: The guide proudly pointed to

"We felt," said Austen Perley, from the Ventura Park Dept., "that our nurserymen could do something about plant life out



JIRO MATSUYAMA sets in a fernlike plant.

"Tall pines and eucalyptus will grow where they aren't supposed to grow - thanks to the Ventura Nurserymen's Association"

there is no sign of even a medium-sized bush growing anywhere.

Contrary puffs of wind pick up sand and dust to create whirlpools that dash erratically up the long, sloping, bare hills. At the beaches, the wind sculpts spiral columns of sand. And always, there is the total lack of trees and bushes.

Then came the Ventura Nurserymen's Association. With them they brought 200 specimens of trees and shrubs to this barren island.

"I took with me," said Richard Matsui, owner of Embee Nursery in Camarillo, "ground cover not unlike North African ice plant. Other men in our party took out plant material native to Australia and New Zealand.

The nurserymen spent the day planting on the leeward side of hills. They placed trees near buildings in some cases but mainly they searched for and found isolated areas where plant life was desperately needed. One such location was One Thousand Springs where they planted material indigenous to California's arid areas.

Seeing these professional men tenderly cultivating new life lent an air of confidence to all

In addition to Embee, the nurserymen included the Carpinteria Nursery, K. M. Nursery, Abe Nursery and Perry's Plant, all of Carpinteria. From Santa Barbara came specimens from Mistletoe Sales and from Santa Susana, the Thompson Nursery also gave plants.

Since nurserymen came to this island to beautify it, there will no longer be a lone tree standing alongside a dry cliff. Don Sheets, microwave section, Range Communications Dept., reports the plants from the nurserymen are doing extremely well. Someone has even placed wind shields behind them. They are growing.

"We have a chief out here," said Sheets, "who took money from his own pocket and went out over this island planting things. And one time we had a commander highly interested in plant life also. He did his best to start various growths out here."

The story of the "lone" tree will die out, for soon the guide will point to new ground cover over the scrubby surface.

Tall pines and eucalyptus will grow where they aren't supposed to grow — thanks to the Ventura Nurserymen's Association.



Nicolas Island.

Modern External Vectors

- Dirty construction equipment
- Gravel for construction
- Biologists'/Sailors' shoes
- Birds...probably
- People bringing out seeds for flowers





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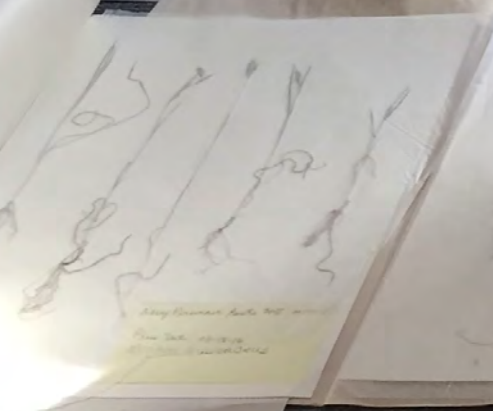
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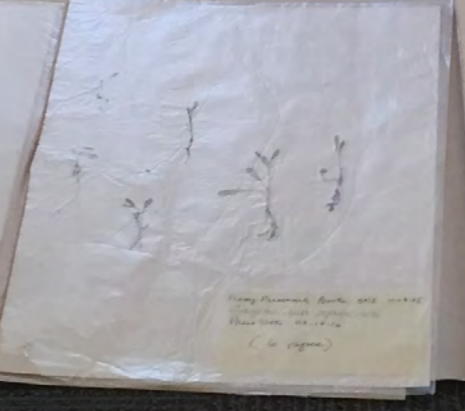
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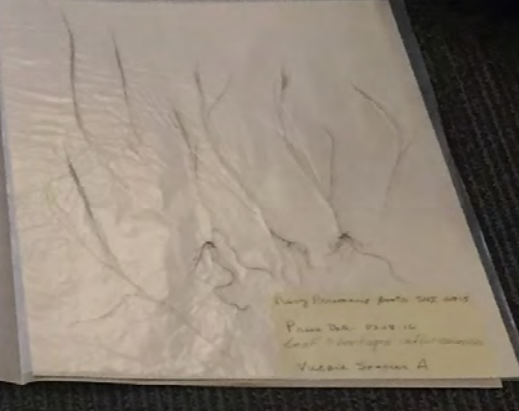
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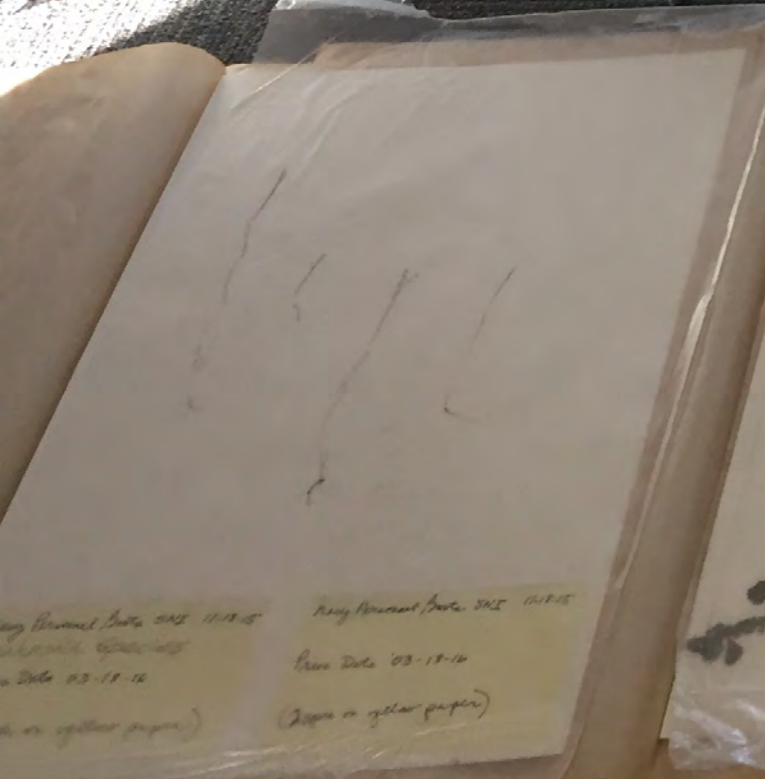
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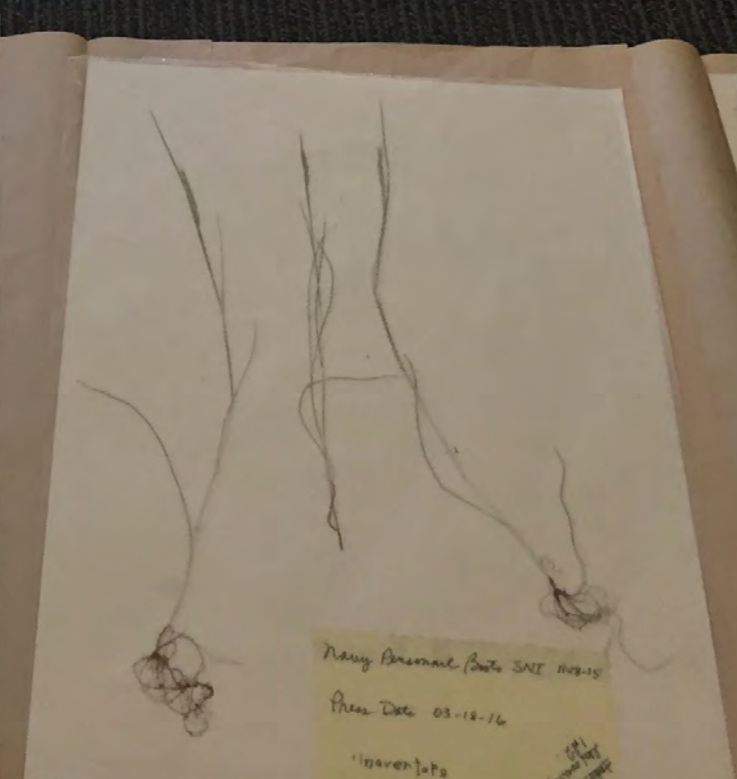
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Internal Vectors

- Biologists' Shoes
- Dirty PW/Contractor equipment (e.g.: Mowing, backhoes, pick-ups with muddy tires)
- Animals (birds/foxes spread *Atriplex semibaccata*, foxes also spread *Carpobrotus spp.*, chukar might be spreading seeds as well)
- Weather (wind, runoff)



Environmental Challenges

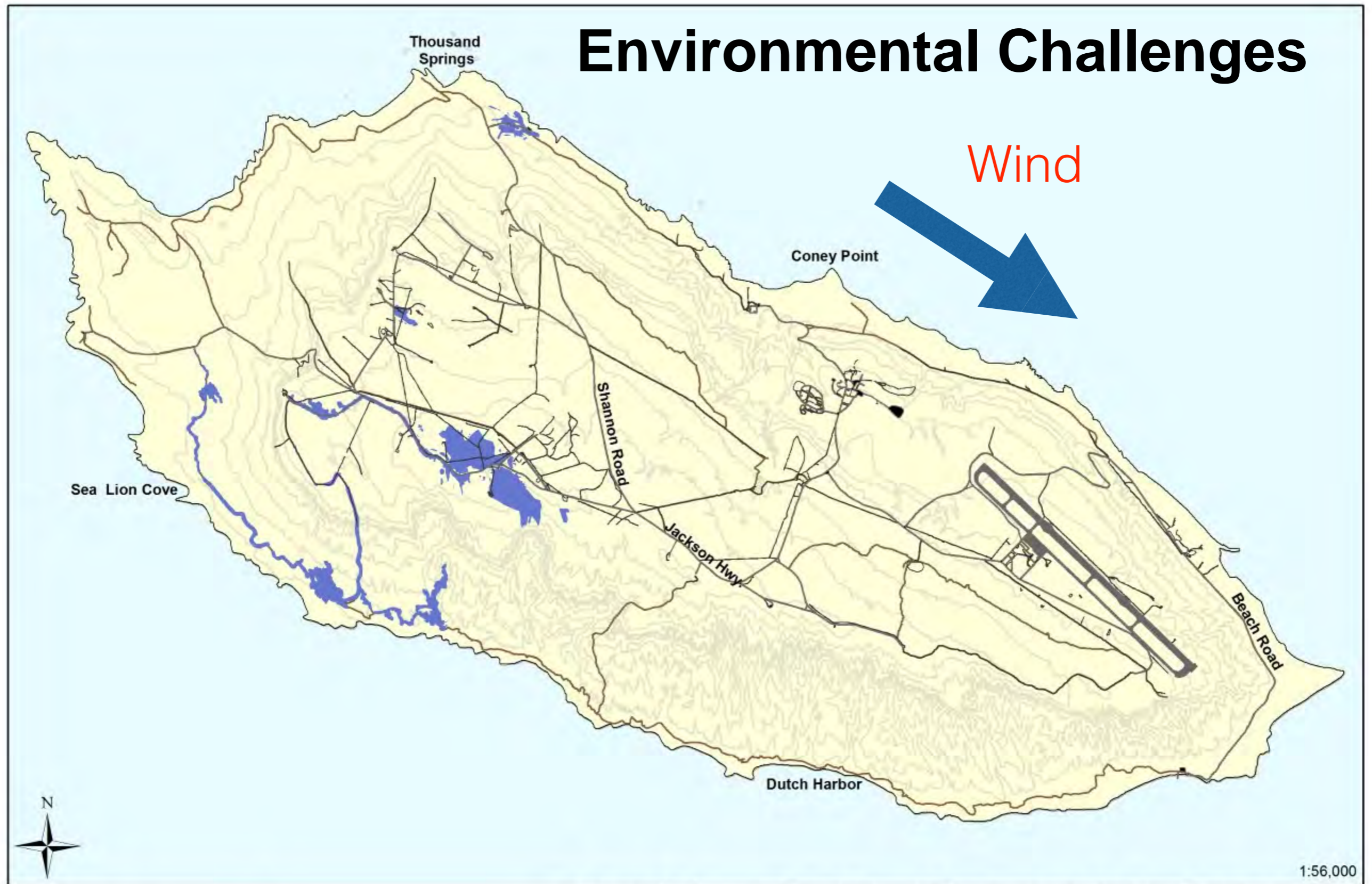



Figure 2. Observed Populations of *Brassica tournefortii* on San Nicolas Island

 ***Brassica tournefortii***

 Paved Road

 ATV Road

0 0.75 1.5 3 Miles

Wind Challenges

- Can affect ability to spray, so we always have two projects to go to, one mechanical, one chemical
- Try to control up wind to down wind, this can be confounded with slope, runoff, and roads.
- Control populations near road sides.



A few targeted weeds

- *Euphorbia terracina*
- *Brassica tournefortii*
- *Carpobrotus* spp.
- Fennel
- *Myoporum laetum*
- *Stipa miliaceum*





Photos by ACS



Photos by ACS

Trying new things with Mesembryanthemum





I would like to thank

ACS Habitat
Management

as well as

Channel Islands
Restoration

The Nature
Conservancy

Channel Islands NP

Santa Barbara
Botanical Garden