



A map of the Carlsbad Hydrologic Unit in Southern California. The map shows the coastline to the west, with several creeks flowing into the ocean: Loma Alta Creek, Buena Vista Creek, Encinitas Creek, San Marcos Creek, Escondido Creek, and Escondido Creek. The land is divided into various colored regions representing different land management areas. A scale bar in the top right corner indicates distances of 0, 1.5, 3, and 6 miles. A legend on the left side lists the following areas: Carlsbad (orange), Del Mar (yellow), Encinitas (light green), Escondido (dark green), Oceanside (light blue), Poway (purple), San Diego County (yellow), City of San Diego (light grey), San Marcos (pink), Solana Beach (purple), and Vista (orange). An inset map in the bottom right corner shows the location of the Carlsbad Hydrologic Unit within the larger context of Southern California, with labels for LOS ANGELES, SAN BERNARDINO, ORANGE, and RIVERSIDE.

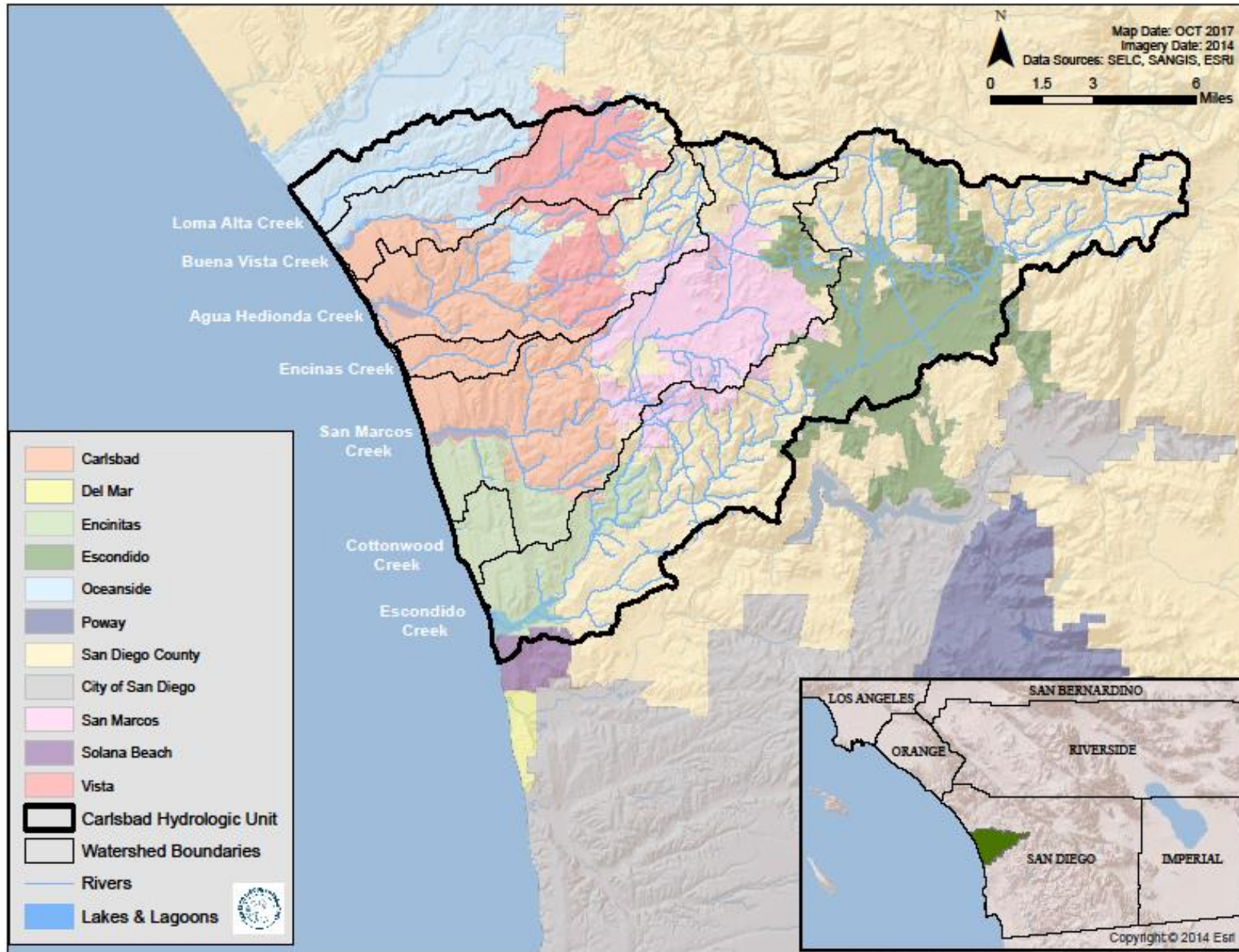
Carlsbad Hydrologic Unit Invasive Plant Species Control Program

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Carlsbad Hydrologic Unit 904.00



Carlsbad Watershed Network

- ☐ Agua Hedionda Lagoon Fdn.
- ☐ Batiquitos Lagoon Fdn.
- ☐ Buena Vista Lagoon Fdn.
- ☐ Canyons Network
- ☐ Cottonwood Creek Conservancy
- ☐ Escondido Creek Conservancy
- ☐ Friends of Hedionda Creek
- ☐ Preserve Calavera
- ☐ **San Elijo Lagoon Conservancy**

CWN Goals: The Carlsbad Watershed Management Plan

“To protect, restore and enhance the quality and beneficial uses of water, habitats, and other natural resources of the watersheds of the CHU and the adjacent coastal shoreline.”

February, 2002



CWN Goals: Solving mutual problems

Control invasive species to restore and maintain a functioning ecosystem, improve water quality and reduce the threats of fire of and floods.



“Water is the one substance from which the earth can conceal nothing; it sucks out its innermost secrets and brings them to our very lips.”

Jean Giraudoux (1882-1944), *The Madwomen of Chaillot*, 1946

CARLSBAD WATERSHED NETWORK

SWRCB PROPOSITION 13 WATERSHED PROTECTION PROGRAM GRANT



Priority Target Species

- ☐ Giant reed (*Arundo donax*)
- ☐ Salt cedar (*Tamarix sp.*)
- ☐ Pampas grass (*Cortaderia sp.*)
- ☐ Vinca major
- ☐ Perennial pepperweed (*Lepidium latifolium*)
- ☐ Various palms



Outreach

PROJECT NIMBY
(**N**o **I**nvasives in **M**y **B**ack **Y**ard)

- ☐ Identify
- ☐ Remove
- ☐ Replant



Monitoring

Water Quality Components of CWN Monitoring Program

- ❑ Hydrologic – Rain and Streamflow
- ❑ Water Chemistry and Indicator Bacteria
- ❑ Bioassessment



Habitat Restoration



Accomplishments

Costco Open Space – Encinas WS

BEFORE (Fall 2004)



AFTER (Spring 2007)



Accomplishments

Harmony Grove – Escondido Creek WS

BEFORE (Winter 2004)



AFTER (Spring 2007)



Accomplishments

Loma Alta Creek WS

BEFORE (Spring 2004)



AFTER (Spring 2007)



Accomplishments

Lake Drive, Encinitas – Escondido Creek WS

BEFORE (Spring 2003)



AFTER (Spring 2007)



Accomplishments

Jesmond Dene – Reidy Creek/Escondido Creek WS

BEFORE (Spring 2003)



AFTER (Spring 2007)



Accomplishments

Pacific Ranch HOA – Escondido Creek WS

BEFORE (Fall 2003)



AFTER (Spring 2007)

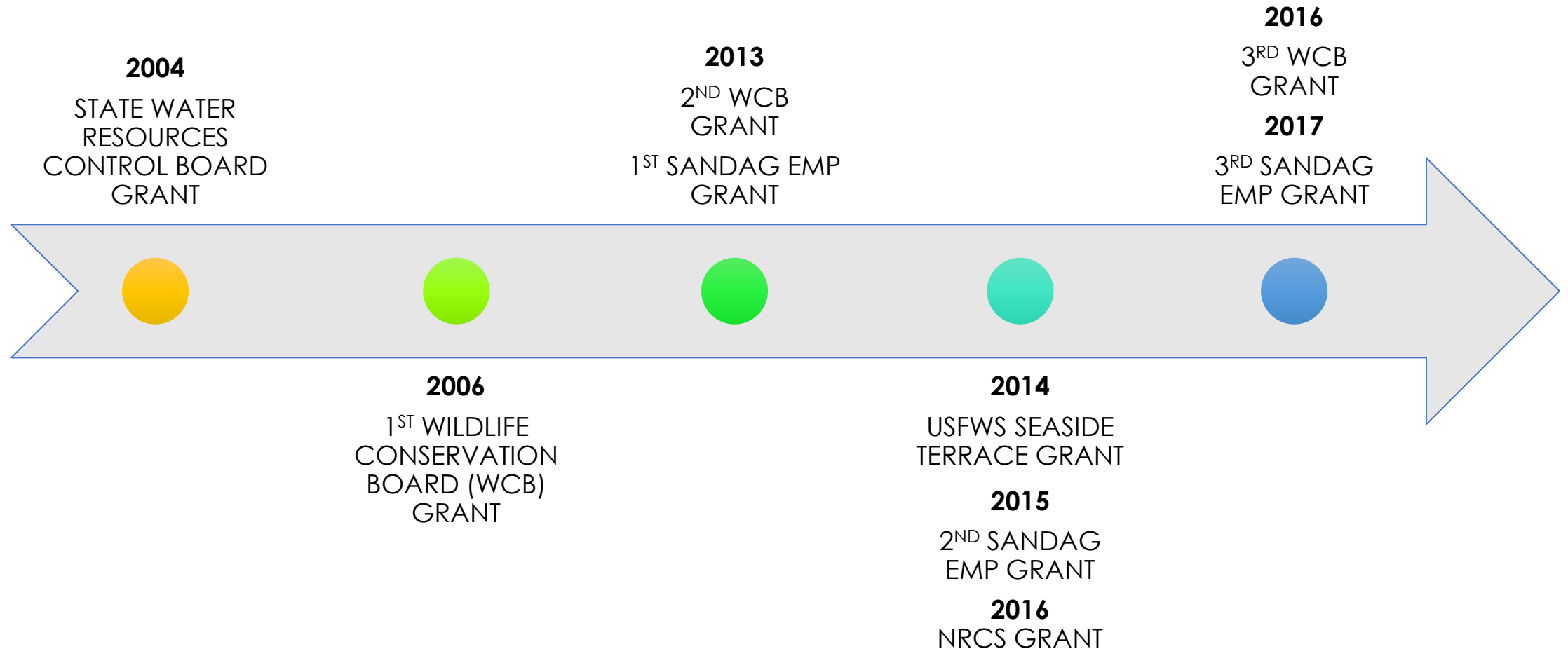


Accomplishments

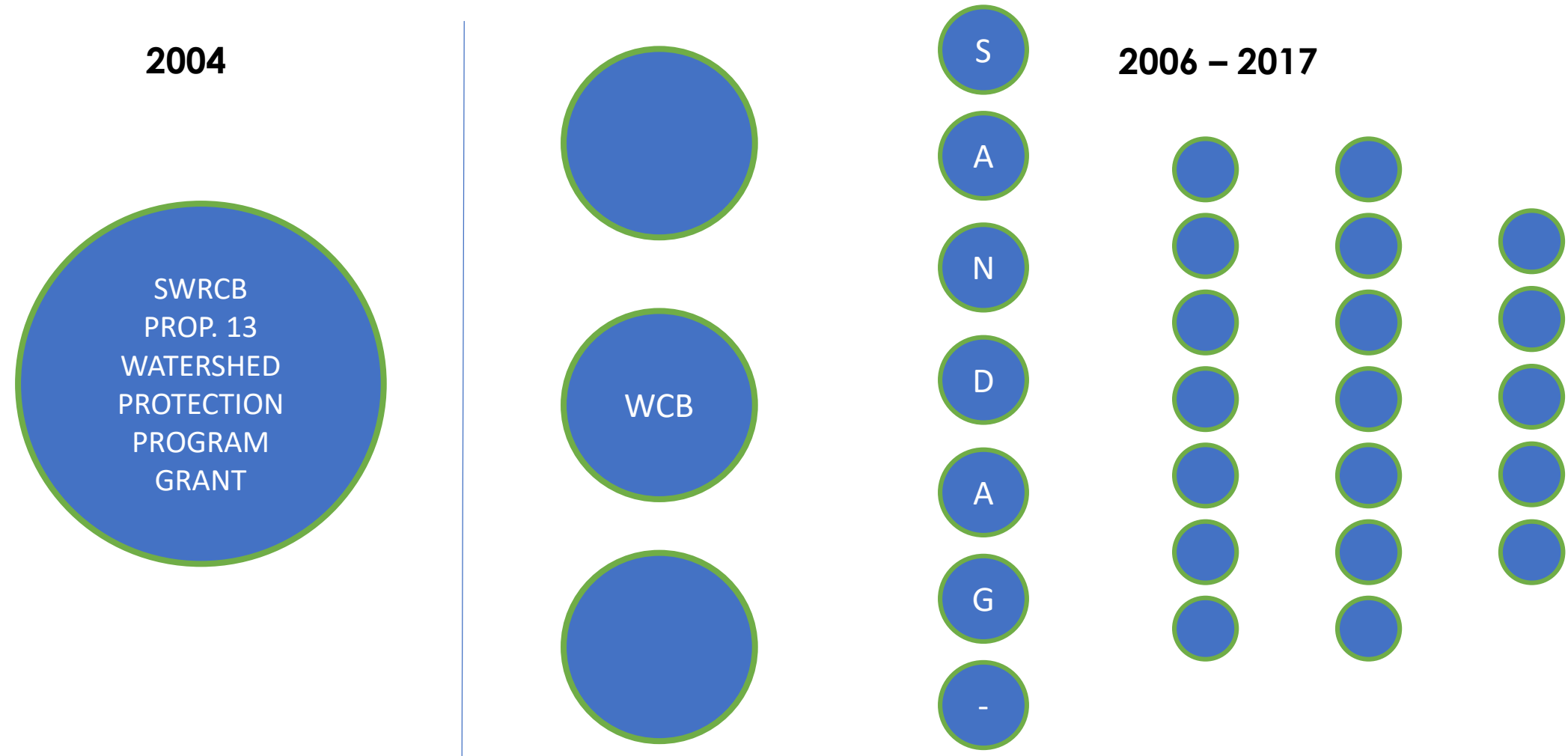
- ✓ Mapped **560 acres** of invasive vegetation
- ✓ Treated and removed **280 acres** of invasive plants
- ✓ Installed **over 55,000 plants** at selected sites
- ✓ Installed six stream and rain gauges on five creeks
- ✓ Made 22 presentations to the general public; 27 to local and state officials



Program Timeline: Major Grants

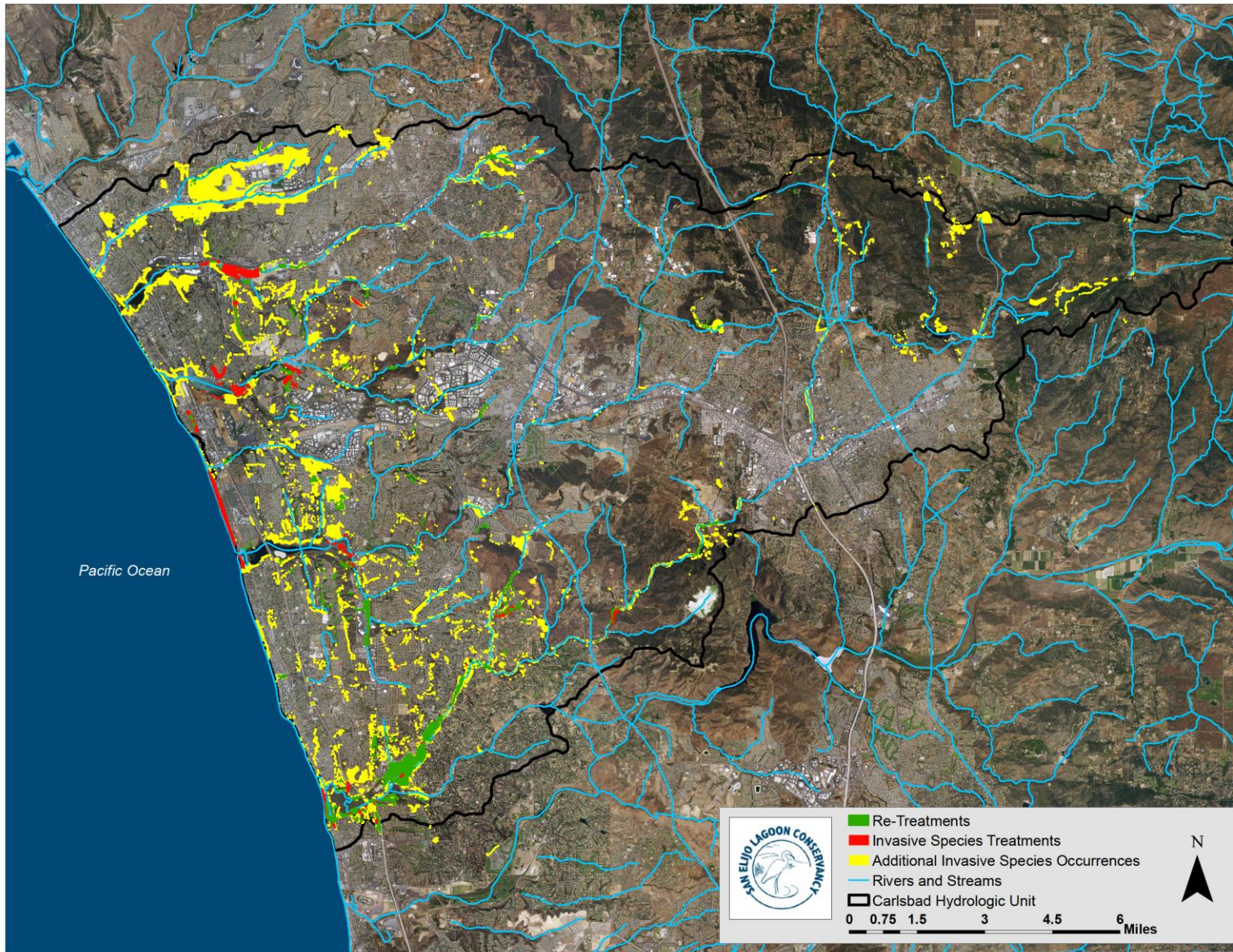


Challenges and lessons learned.



Accomplishments

- Over **3,000 acres** mapped
- Treated over **800 acres**
- Obtained ROE on **over 3,000 parcels**
- Contacted over **35,000 community members**



Restoration Activities Database

Activity Log

- Activity Type
- Labor Source
- Treatment Records/Herbicide Use Records
- Cost Estimates
- Acreage Records

Site Evaluations

- Cover Estimates By Taxon
- Species Richness

Target Species

- Acreage/Individuals Treated By Taxon

Re-vegetation Palettes

- Quantity of Container Plants & Size
- Pounds of Seed By Taxon
- Source

Restoration
Activity Log ID



Site ID



ArcGIS Restoration & Mitigation Site Inventory Shapefile

Geographic Location
Acreage
Vegetation Types
Watershed/Work Area

CHU Invasive Plant Species Control Program

Program Partners

- ☐ ACS Habitat Management
- ☐ CA Dept. of Fish & Wildlife
- ☐ CA Dept. of Parks & Recreation
- ☐ Dendra, Inc.
- ☐ Mission RCD

Key Sponsors

- ☐ CA SWRCB
- ☐ WCB
- ☐ San Diego Assn. of Govts.
(SANDAG)
- ☐ NRCS
- ☐ USFWS

Challenges and lessons learned

- ❑ Continue to refine project public engagement
- ❑ Reset planning for resiliency: climate change and special-status species
- ❑ Project management: it takes a village...aligning multiple projects with organizational goals



Accomplishments

San Elijo Lagoon West Basin Dunes

BEFORE (2011)



AFTER (2015)



What the future holds





0 1.5 3 6

Loma Alta Creek

Buena Vista Creek

Agua Hedionda Creek

Encinas Creek

San Marcos Creek

Escondido Creek

Q&A

Thank you from the SELC!

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- Carlsbad
- Del Mar
- Encinitas
- Escondido
- Oceanside
- Poway
- San Diego County
- City of San Diego
- San Marcos
- Solana Beach
- Vista

