

Las Vegas Wash Revegetation Program 2000-2012

May 23rd, 2013



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Las Vegas Wash
Coordination
Committee



www.lvwash.org



Creation or Restoration?

- **Society of Ecological Restoration**
definition:
 - *Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.*

Why Revegetate the Las Vegas Wash?

- **Stakeholder vision (LVWCC CAMP)**
 - Improve ecosystem to a self-sustaining state
- **Permit requirements**
 - Wetland impact from construction of erosion control structures (US Army Corps of Engineers 404 permits)
 - Stormwater permits (Nevada Division of Environmental Protection)
- **Grant Obligation**
 - Multiple grants received to help pay for erosion control structure construction require revegetation components



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Before Restoration Began

- As of 2001, about 1500 acres of Salt Cedar or Tamarisk lined the Wash channel



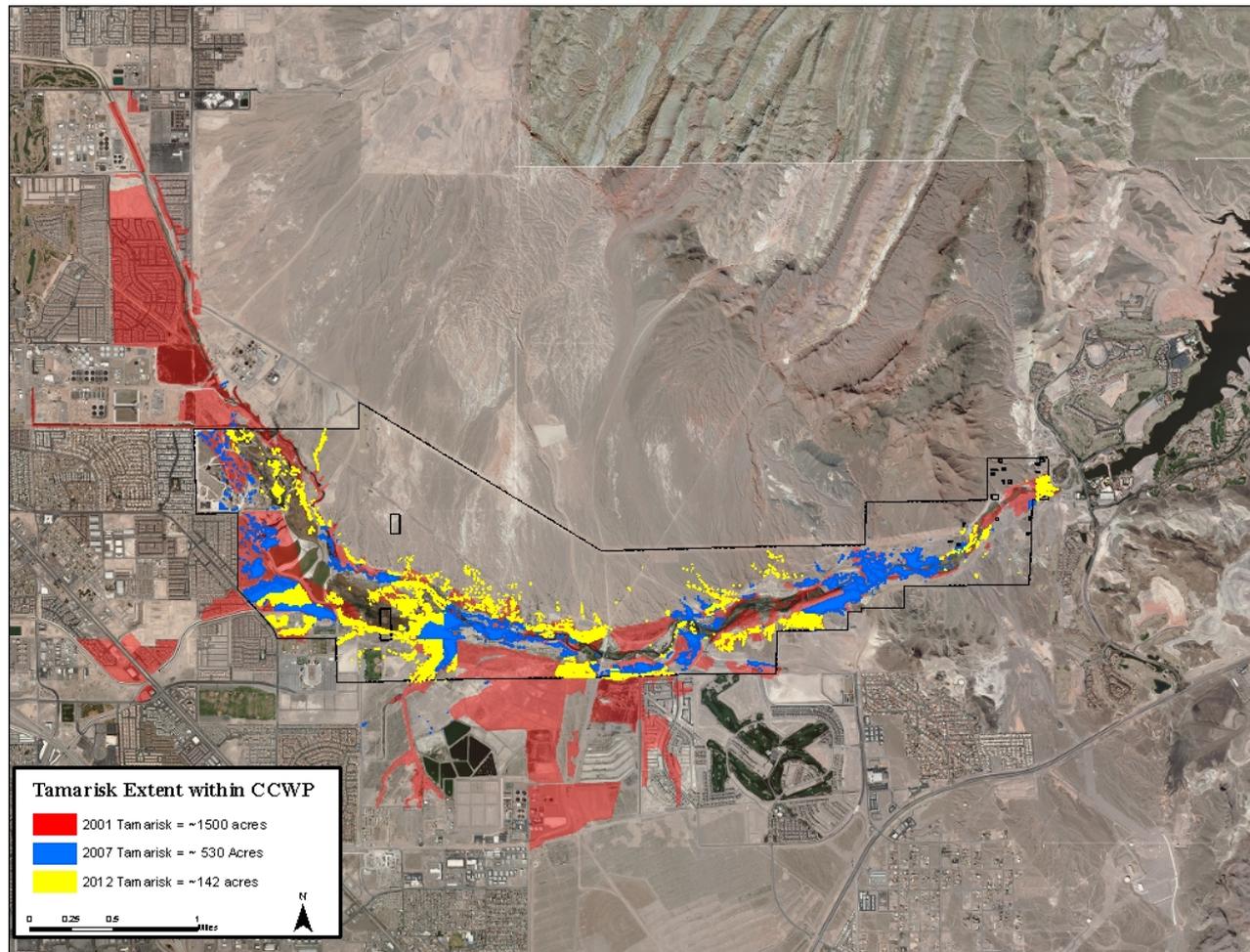
Tamarisk Removal

- Majority is removed as part of construction of erosion control structures and property development



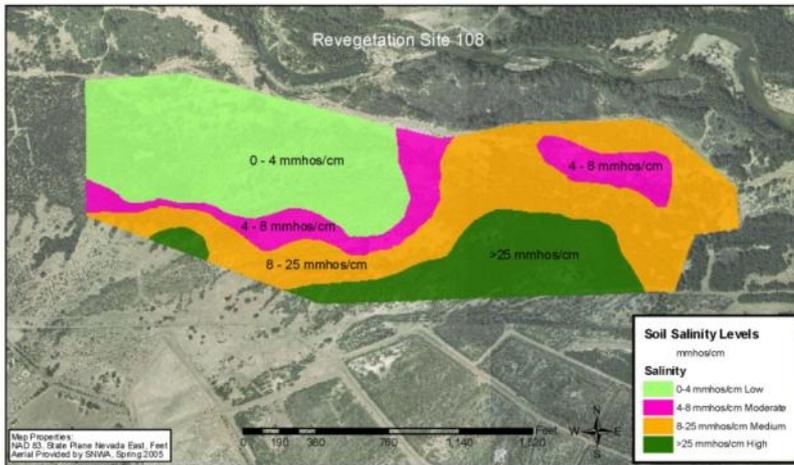
Tamarisk Removal

- Today just 142 acres remain of the 1500 identified in 2001



Revegetation Planning

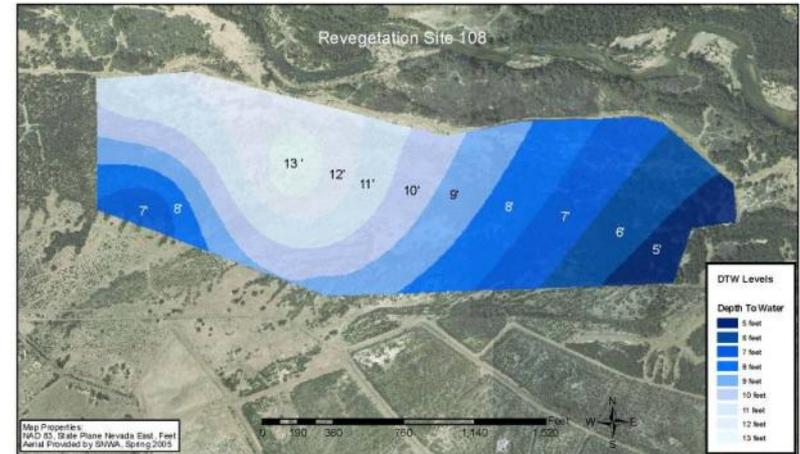
- Soil sampling
 - Salinity
 - Texture
- Depth to Water
- Choose plants that will survive under microclimate conditions



Prepared By:
Fred Phillips Consulting, LLC
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Southern Nevada Water Authority
Las Vegas Wash Revegetation Design

April 1, 2006
Soil Salinity Map



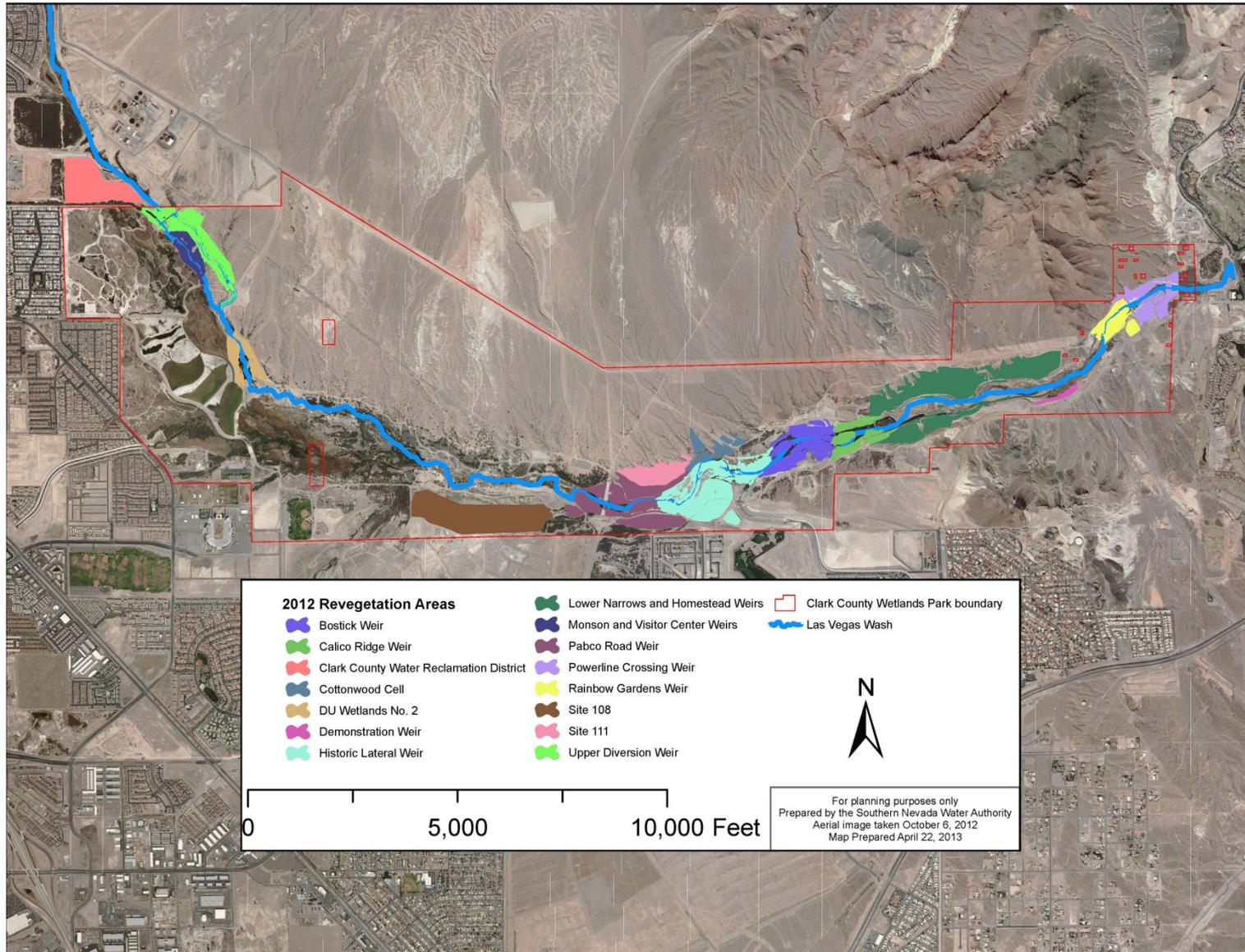
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April 1, 2006
Surface To Water
Table Depth Map



Las Vegas Wash revegetation areas 2001 through 2012 ~ 360 Acres



Revegetation Implementation

- **Planting**
 - Potted Plants from nursery
 - Seeding
 - Pole planting & Transplants



Revegetation Implementation

- Volunteer Events
 - 22 semi-annual Green-Ups so far
 - 178 acres
 - Average about 600 volunteers
 - Creates ownership



Revegetation Implementation

- Transplants
 - Saltgrass



Revegetation Implementation

- Transplants
 - Bulrush



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Revegetation Implementation

- Pole planting
 - Cottonwoods
 - Willows
 - Arrowweed
 - Seep willow



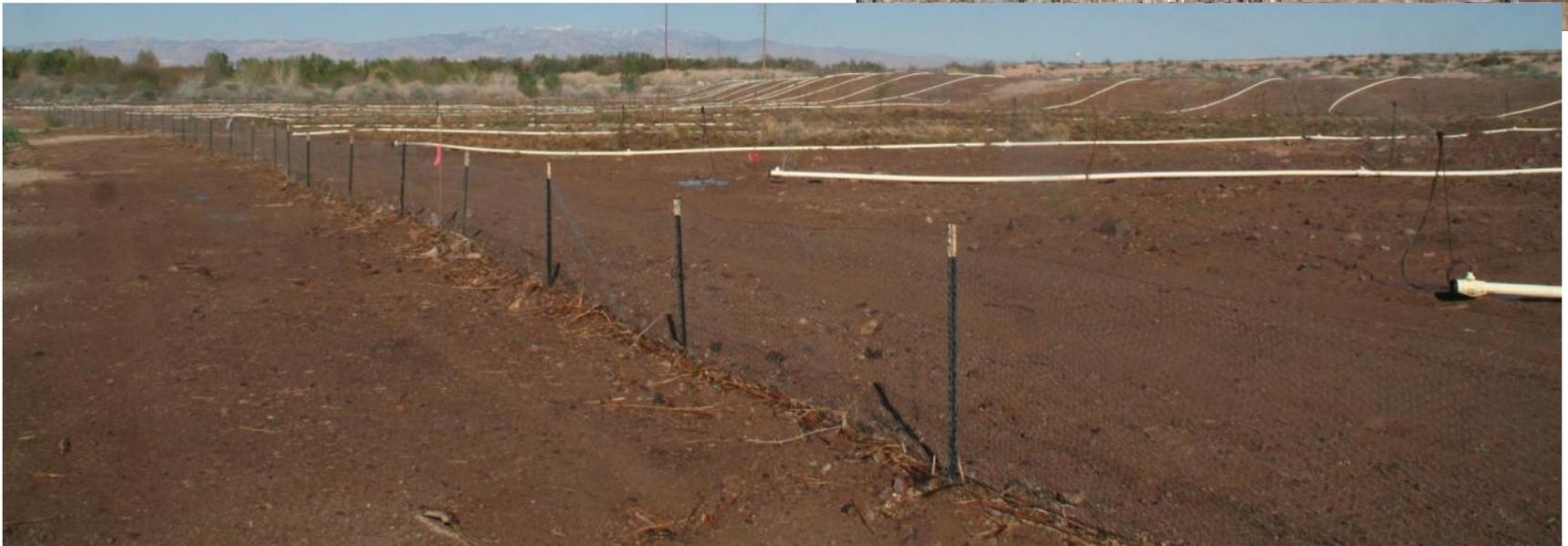
Revegetation Implementation

- Irrigation
 - Spray
 - Certa-lok irrigation pipe
 - Mobile pumps
 - Drip



Revegetation Maintenance

- Invasive species control
 - Chemical, biological, physical
- Plant/site protection
 - Herbivores
 - People



Revegetation Monitoring

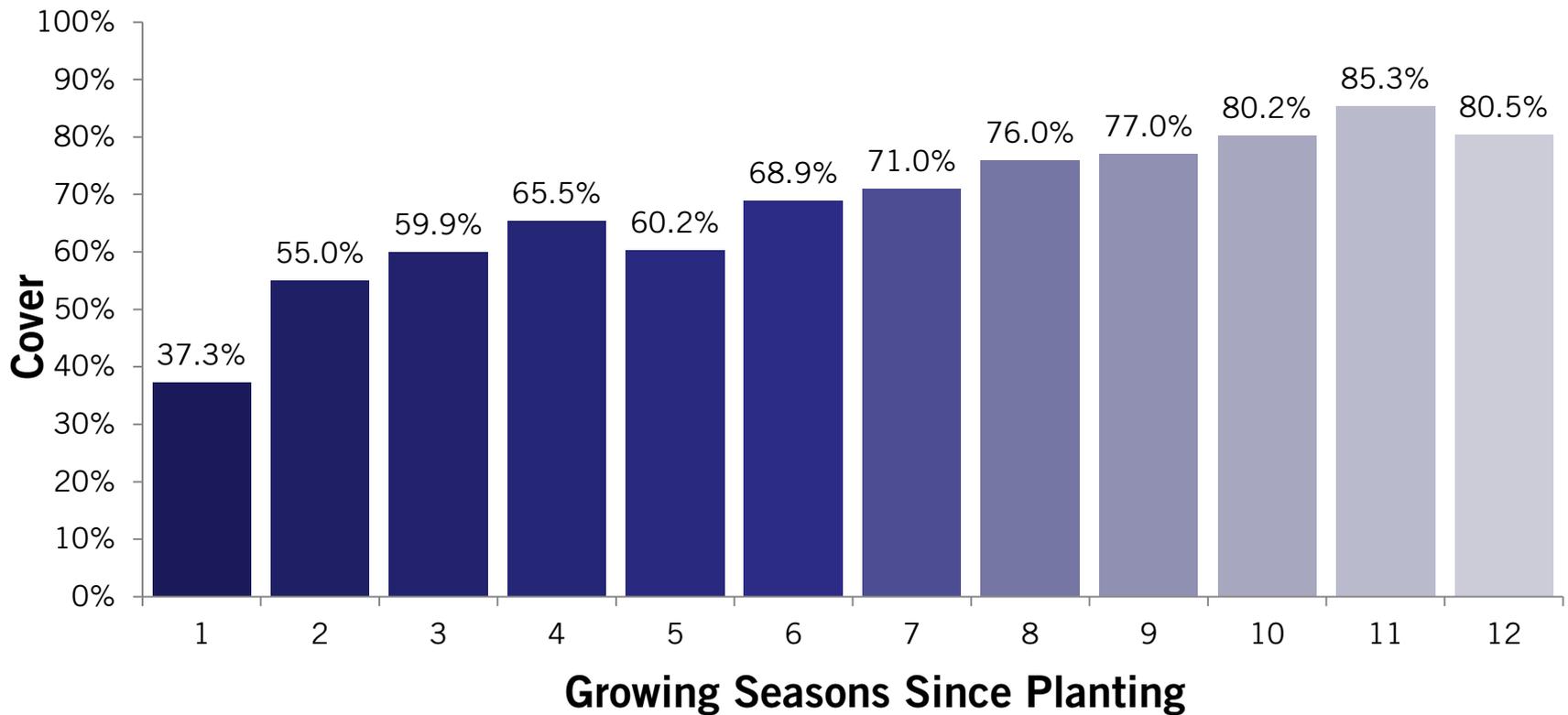
- **Criteria**
 - Cover
 - Survivorship
 - Invasive species cover
 - Species richness
- **Techniques**
 - Line-intercept
 - Cover Class
- **Additional Data**
 - Wildlife usage
 - Site changes

Cover Rank	Value Range	Midpoint
R	<<1%	0.1%
T	<1%	0.5%
1	1-5%	2.5%
2	5-25%	15.0%
3	25-50%	37.5%
4	50-75%	62.5%
5	75-100%	87.5%

Revegetation Monitoring

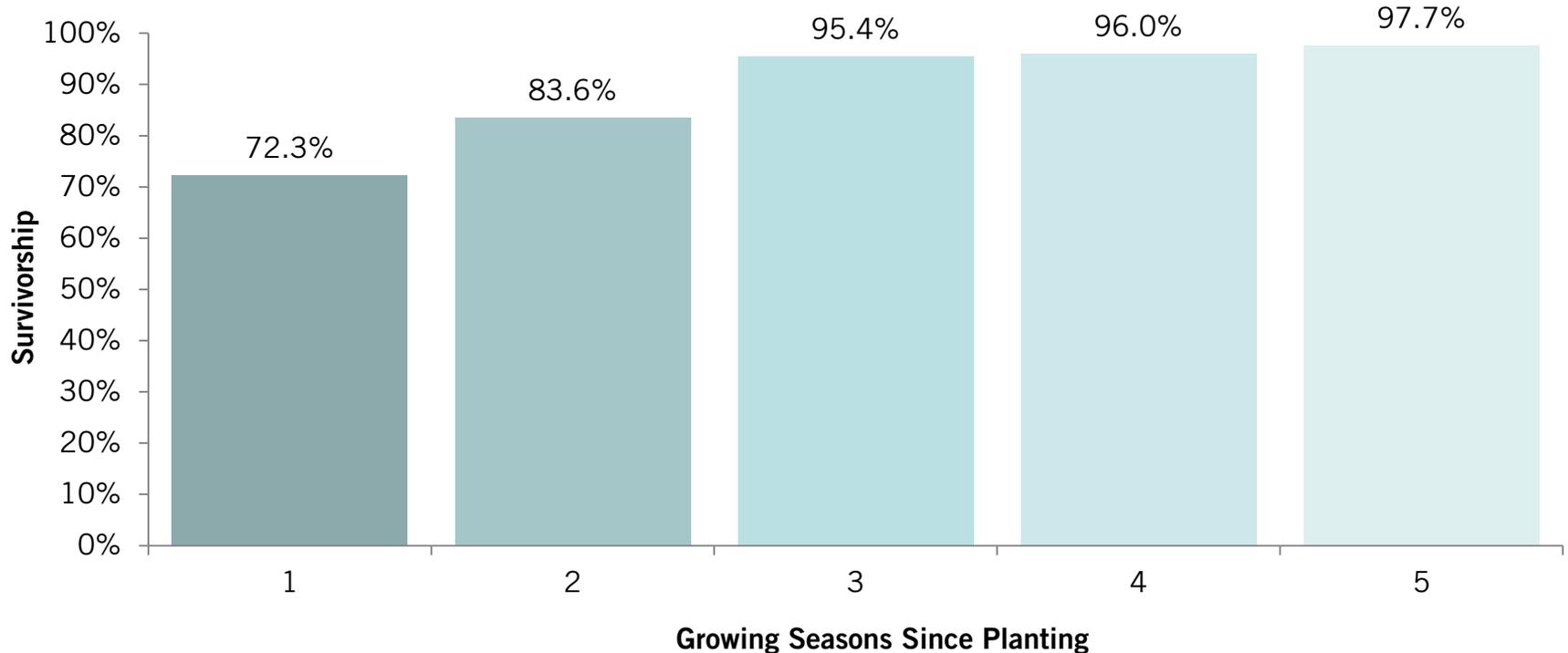
- **Site Cover Trend**

- Average of Weighted Average cover (acreage)



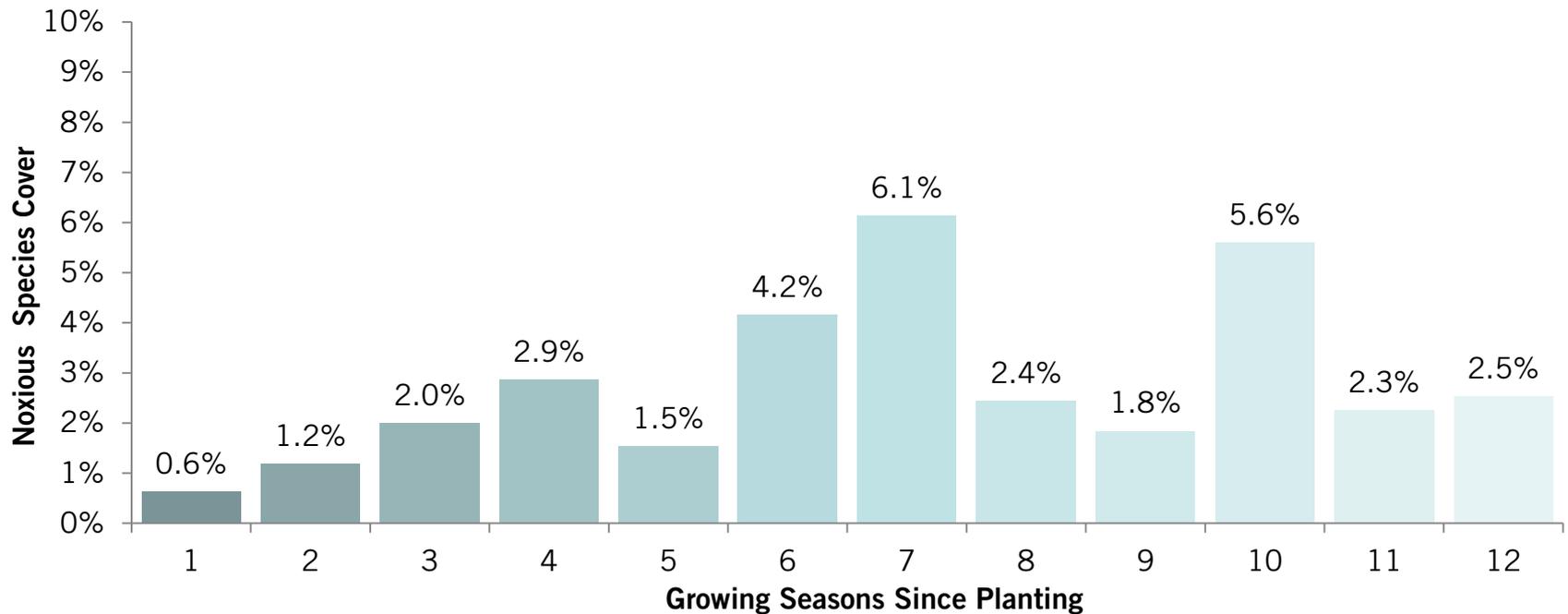
Revegetation Monitoring

- Average survivorship of planted plants
 - Data skewed in later growing seasons



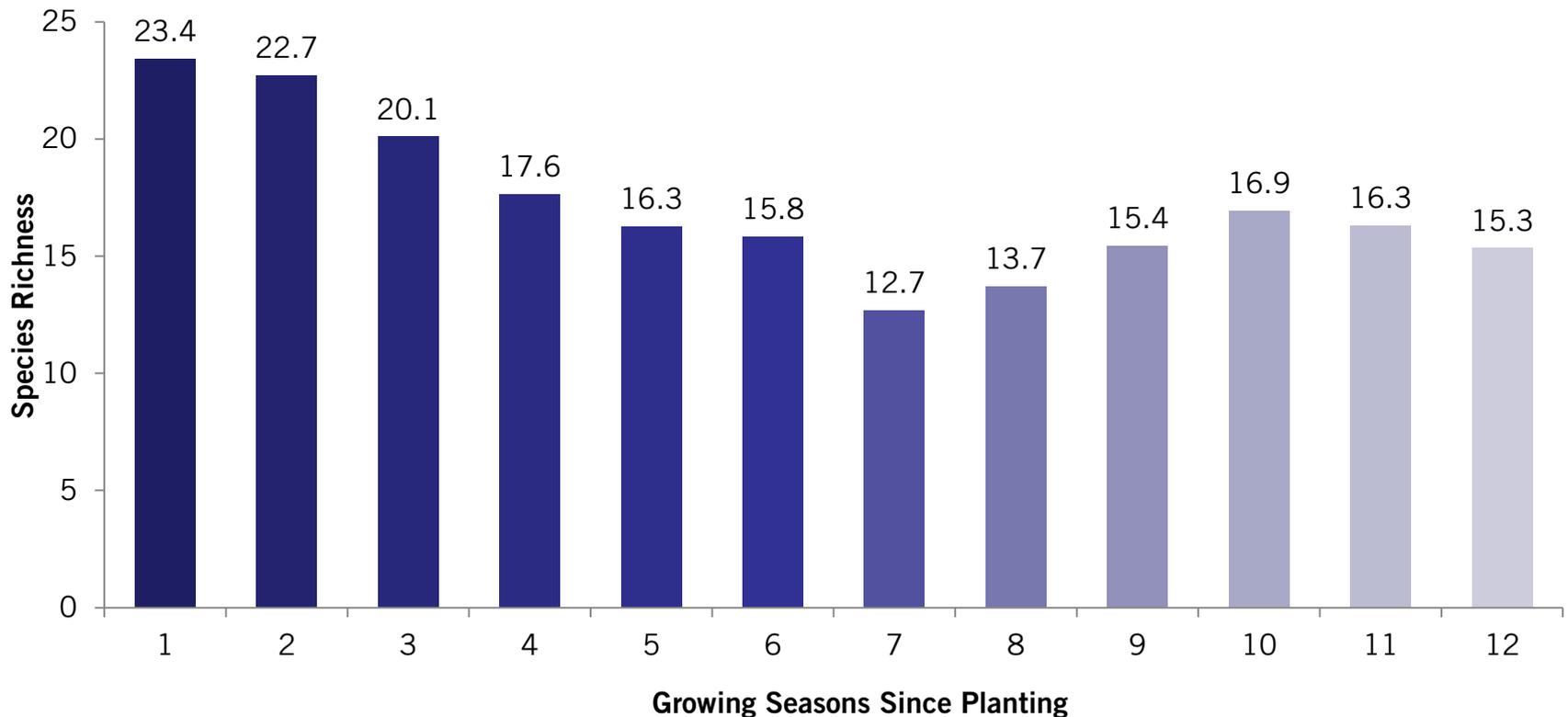
Revegetation Monitoring

- Average invasive species cover



Revegetation Monitoring

- Average species richness
 - Typical non-wetland sites are irrigated for the first 2 growing seasons



Active Revegetation Site

Example – Site 108

- Non-wetland revegetation site
 - Not associated with Weir
 - Provides important buffer to Wash and increases wildlife habitat



April, 2006



April, 2009

Active Revegetation Site Example – Pabco South



2004



2010

Passive Wetland Example

- **Upper Diversion Weir**
 - Pond located upstream of Weir completed in summer of 2008
 - Passive establishment of large cattail community
 - Provides food and shelter to a wide variety of bird species



July, 2008



July, 2012

Active Revegetation Site Example – Historic Lateral South



2008



2010

Lessons Learned

- Pole Plantings
 - More cost effective and higher success rates than potted plants
- Choosing the right plants is key to the success of the restoration program
 - Wash has many microclimates
 - Various soil types and soil conditions

Lessons Learned

- Monitoring not needed annually on all sites
 - Protocol developed to alternate in field monitoring with aerial imagery for total vegetative cover
- Las Vegas Wash is a dynamic system
 - Requires adaptive management to adjust planting design and management to meet goals

QUESTIONS?

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