

An aerial photograph of a river valley in Skagit County, Washington. The river flows through a landscape of green fields, some brown patches, and residential areas. In the background, there are blue mountains with snow-capped peaks under a clear sky. The text is overlaid on the left side of the image.

# Mitigation Banks: Performance Standards and Credit Release

Nookachamps Wetland Mitigation Bank, Skagit County, Washington

# The Mitigation Banking Concept

- Mitigation Banks: Large areas of restored or preserved wetlands set aside to compensate for impacts to wetlands
- Ecological Advantages of Mitigation Banks:
  - Mitigation before impact
  - Large preserve size
  - Biological Performance Standards
  - Land Stewardship
  - No-net loss



# Wetland Mitigation Banks

- Designated area, formally approved by regulatory agencies, to provide mitigation credits
- Created, restored, and enhanced wetland habitat
- Biological Performance Standards
- Financial Assurances
- Severance of Legal Liability

# Which One Is The Mitigation Bank?



# Kimball Island Mitigation Bank



- Legally Binding Agreement
- Approved Credits for Sale
- Performance Standards
  - \* Biological
  - \* Financial
  - \* Legal
- Credit Release Schedule

# Key Benefits of Mitigation Banks

- Ability to Verify Performance and Quantify Success
- Performance Standards
  - \* Quantifiable
  - \* Measurable
  - \* Verification Methods
- Credit Release
  - \* Formal Review and Approval
  - \* Financial Incentives to Perform

# Performance Standards

- Legal
- Financial
- Biological

# Legal Assurances

- Deed Restrictions (recorded)
- Conservation Easements (recorded)
- Legal Title or Property Rights
- Declaration of Trust
- Trust Documents
- Bank Document



# Financial Assurances

- Construction Bonding (100% labor/materials)
- Interim Management Security
- Contingency Security (10-20% construction)
- Land Management/Endowment Account\*

# Biological Performance Standards

## ■ Performance

- Vegetation - 95% native cover
- Hydrology - twice daily tidal inundation; seasonal ponding
- Non-native vegetation - less than 5% cover

## ■ Monitoring

- Performed in years 1,2,3,5,10,20
- Vegetation and Hydrology

# Performance Standards

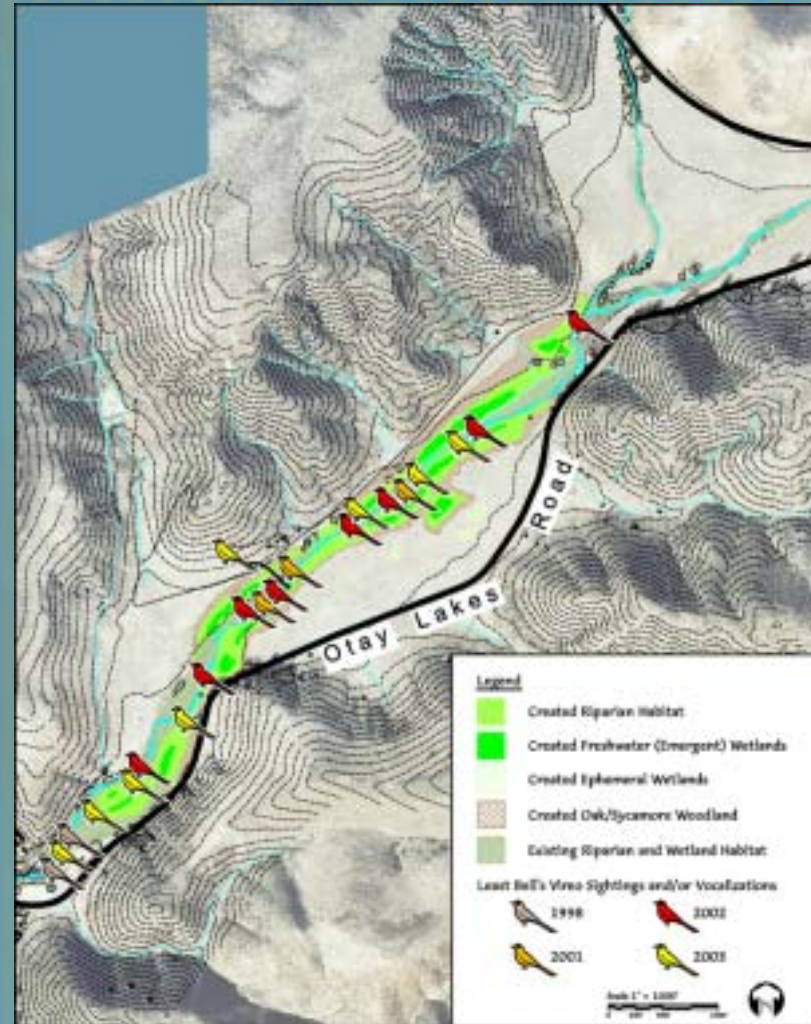
- Reference Sites
- Vegetation (Flora)
  - Composition and Cover
  - Survivorship
  - Wetland types (fac/obl/etc.)



# Performance Standards

- Reference Sites
- Vegetation (Flora)
- Wildlife (Fauna)
  - Utilization

Least Bell's vireo occurrences at Rancho Jamul Mitigation Bank, San Diego County, California



# Performance Standards

- Reference Sites
- Vegetation (Flora)
- Wildlife (Fauna)
  - Utilization
  - Life Stages



California Tiger Salamander larvae at North Suisun Mitigation Preserve, Solano County, California



Valley Elderberry Longhorn Beetle at Wildlands Mitigation Bank, Placer County, California



# Performance Standards

- Reference Sites
- Vegetation (Flora)
- Wildlife (Fauna)
- Hydrology
  - Inundation
  - Duration
  - Flood Regime

Aitken Ranch,  
Placer County, California



# Performance Standards

- Reference Sites
- Vegetation (Flora)
- Wildlife (Fauna)
- Hydrology
- Soils
  - Geomorphology
  - Accretion/Erosion

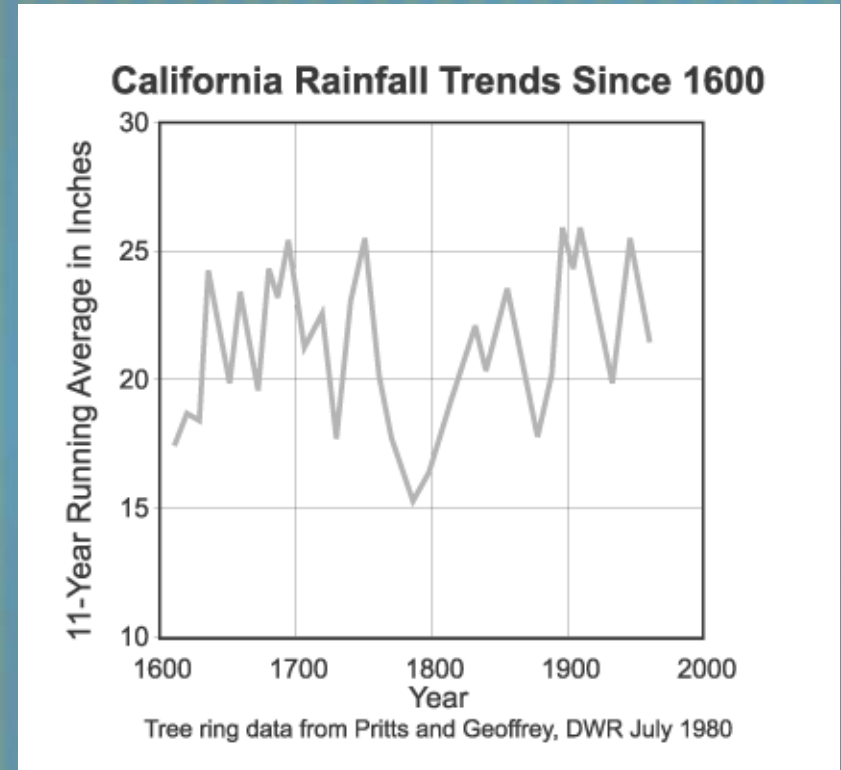


John D. Vincent Vernal Pool Preserve, Placer County, California



# Performance Standards

- Reference Sites
- Vegetation (Flora)
- Wildlife (Fauna)
- Hydrology
- Soils
  - Geomorphology
  - Accretion/Erosion
- Natural Dynamic Equilibrium (?)





# Monitoring

- Field Work
- Reports
- Adjust methods to scale & project goals
- Adaptive monitoring for dynamic ecosystem



# Remedial Action

- Replanting/Reseeding
- Adjusting Grades
- Supplemental Establishment Irrigation



# Mitigation Credits and Their "Release"

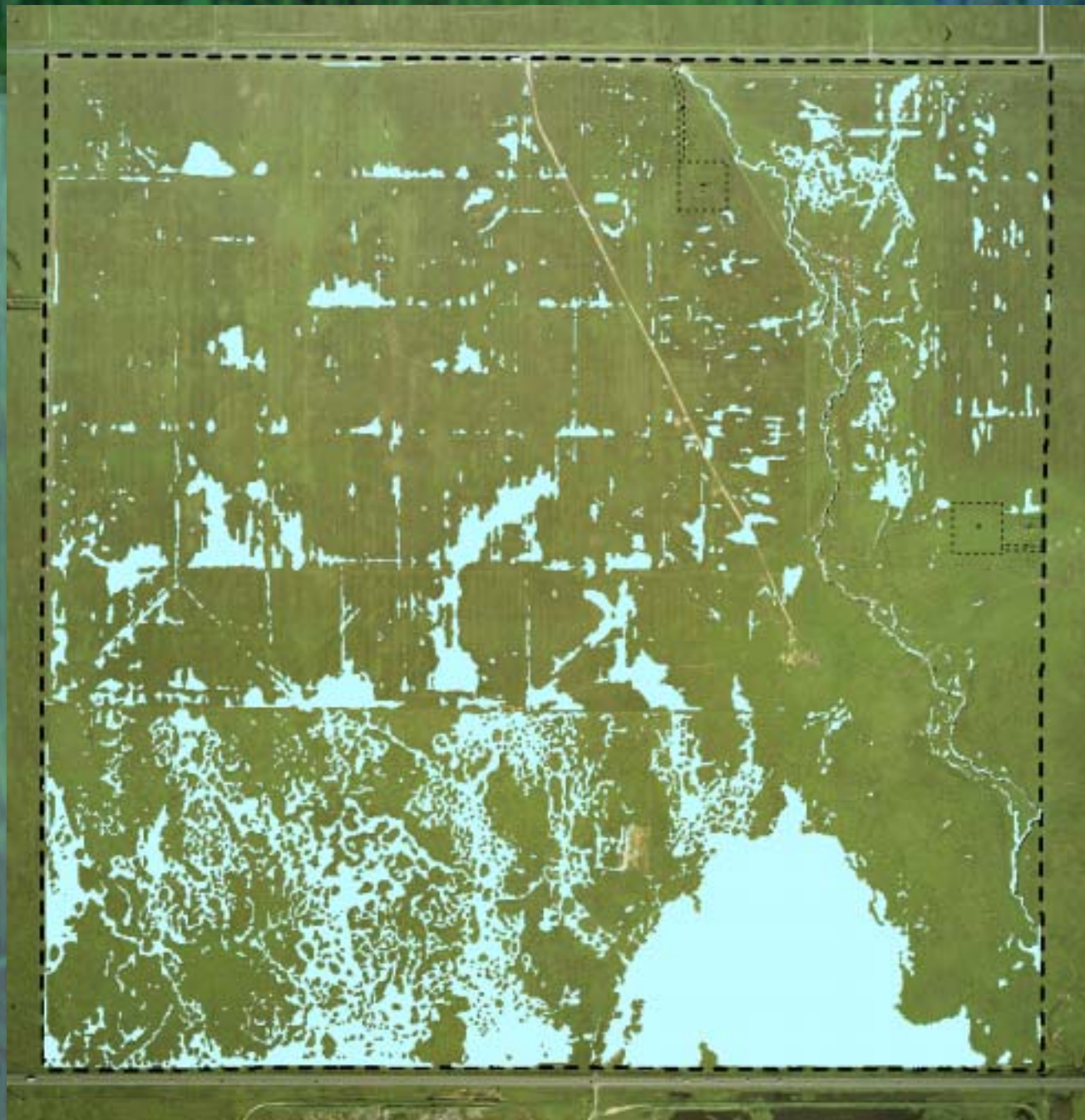
- What are you selling?
  - \* Agreed Upon Unit of Measurement
  - \* One "good" or a "number of goods"

When Does the Unit or Good become marketable?

- \* Immediately Upon Identification  
(standard for non-bank mitigation) OR
- \* Performance based  
(Mitigation Banks)

# Functions & Values Analysis

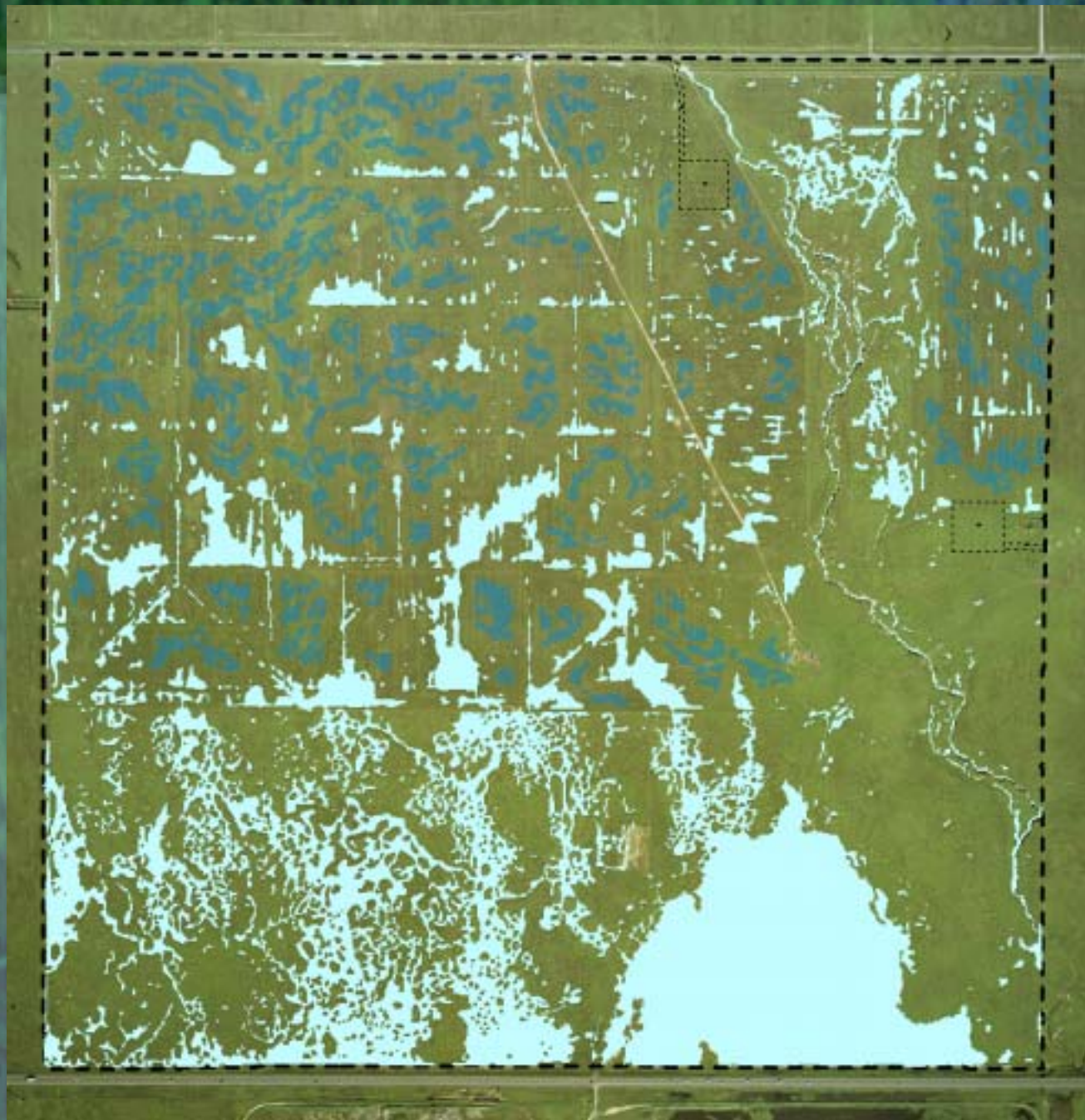







 Delineated Wetlands

 Property Boundary

## Wetland Delineation



-  Delineated Wetlands
-  Proposed Vernal Pools
-  Property Boundary

## Restoration Plan

# Proposed Credit Values

	Acres	Credit Multiplier	Total Credits
<b>Tidal Wetlands</b>			
Restore	30	1	30
Enhance	15	0.5	7.5
<b>Seasonal Wetlands</b>			
Restore	30	1	30
Enhance	5	0.5	2.5
<b>Uplands</b>	20	0	0
<b>Total</b>	<b>100</b>		<b>70</b>

● Contra Costa Goldfields (FE)

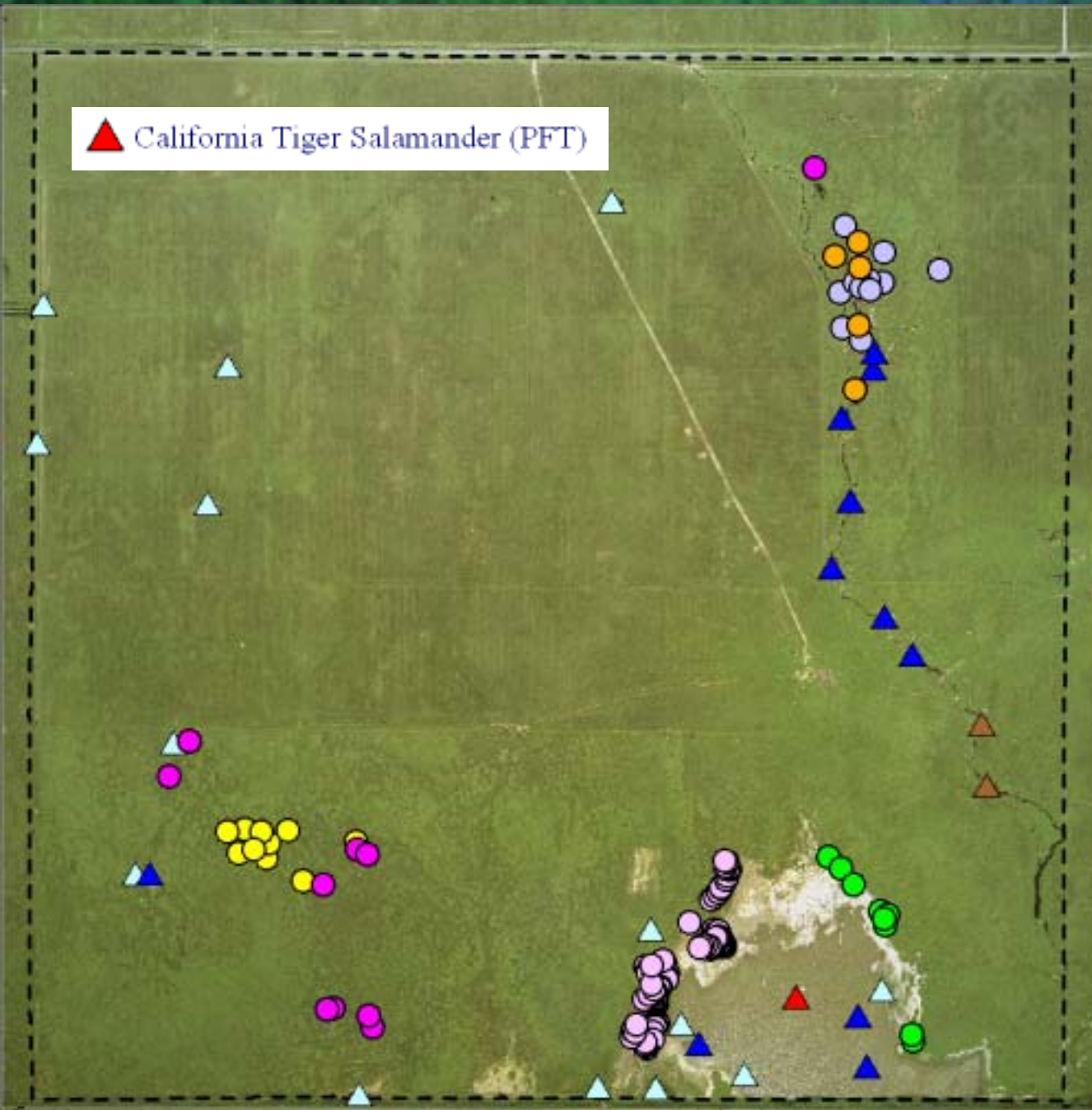


- Alkali Milk Vetch (CNPS 1B)
- Brittlescale (CNPS 1B)
- Soft Bird's Beak (FE/SR)
- Carquinez Goldenbush (CNPS 1B)
- Contra Costa Goldfields (FE)

Special-Status  
Species On Site

North Suisun Mitigation Bank, Solano County, California





- Alkali Milk Vetch (CNPS 1B)
- Brittle-scale (CNPS 1B)
- Soft Bird's Beak (FE/SR)
- Carquinez Goldenbush (CNPS 1B)
- Contra Costa Goldfields (FE)
- Heckard's Peppergrass (CNPS 1B)
- △ Vernal Pool Fairy Shrimp (FT)
- △ Vernal Pool Tadpole Shrimp (FE)
- △ Burrowing Owl (SCS)
- △ California Tiger Salamander (PFT)

Special-Status  
Species On Site

North Suisun Mitigation Bank, Solano County, California

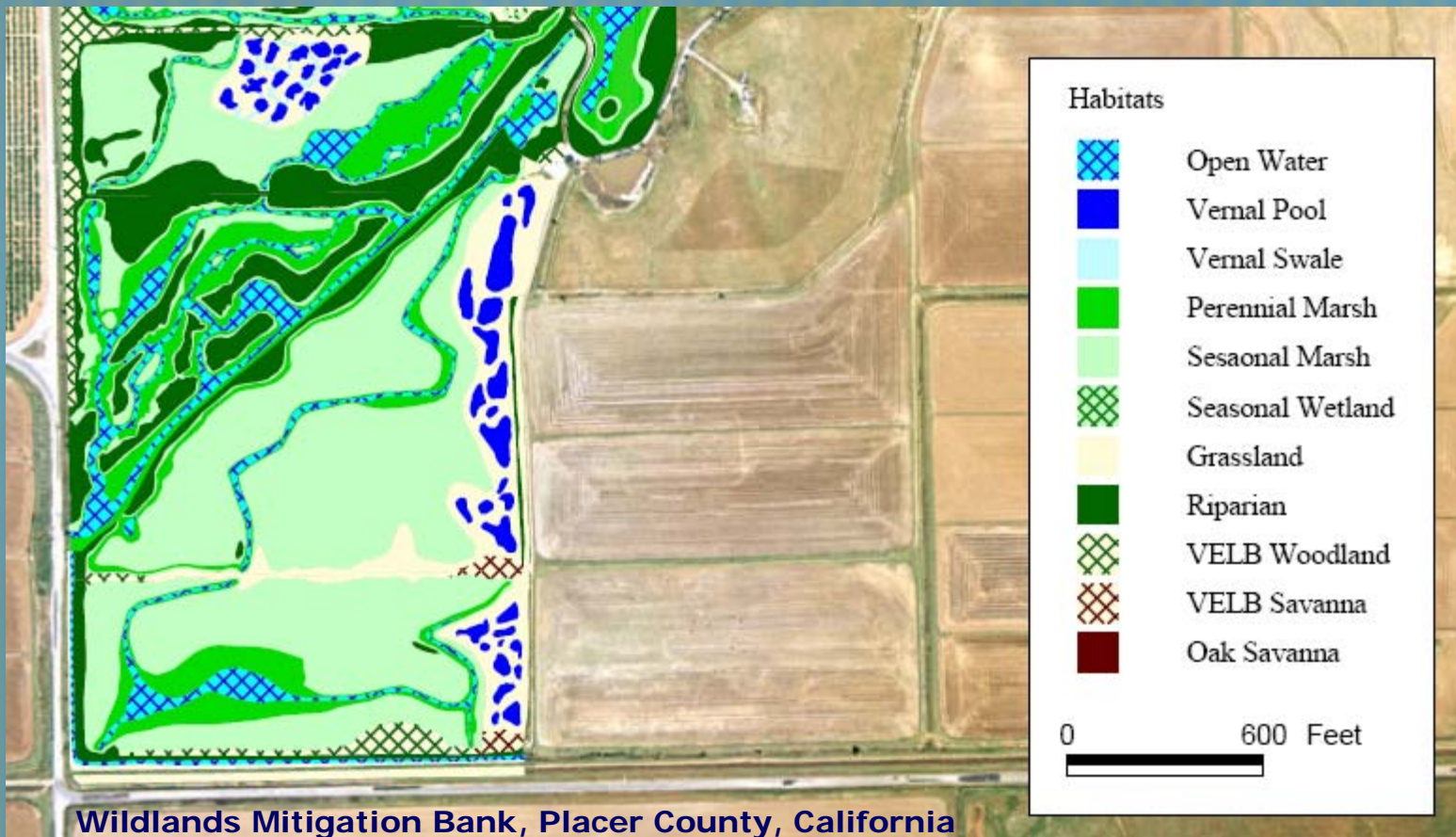
# Credit Analysis

	Credit Type	Acreage	Multiplier <sup>1</sup>	Credits	Notes
<b>Summary of Preservation Credits</b>					
	<b>Wetland</b>				This includes habitat occupied by Contra Costa goldfields ( <i>Lasthenia conjugens</i> )
	Vernal Pool (non-CTS Breeding)	91.0	2	182.0	
	Playa Vernal Pool -CTS Breeding Habitat	36.1	1	36.1	
	Playa Vernal Pool - Vernal Pool Preservation Only	36.1*	1	36.1	
	<b>Subtotal</b>	<b>127.1</b>		<b>254.2</b>	
	<b>Upland</b>				This upland habitat also includes occurrences of Carquinez goldenbush ( <i>Isocoma arguta</i> ) and brittle scale ( <i>Atriplex depressa</i> )
	CTS Aestivation and Dispersal and Delta Green Ground Beetle** Foraging Habitat (i.e., annual grassland)	451.9	1	451.9	
	<b>Subtotal</b>	<b>451.9</b>		<b>451.9</b>	
<b>Summary of Creation Credits</b>					
	<b>Wetland</b>				
	Vernal Pool	45.0	1	45.0	
	<b>Subtotal</b>	<b>45.0</b>		<b>45.0</b>	
<b>Grand Total</b>		<b>624.0</b>			
<b>Comments:</b>					
* The 36.1 acre playa vernal pool may only be sold as either CTS breeding habitat or vernal pool preservation; therefore, the acreage is not duplicated					
** Credits for Delta Green Ground Beetle shall be approved after on-site surveys verify presence.					
<sup>1</sup> Multiplier determined by USFWS methods (see Exhibit L for USFWS multiplier summary table)					



# Credit Release: Example

- Bank Signature /Conservation Easement 20%



# Credit Release: Example

- Bank Signature/Easement 20%
- As-Builts = 30% (includes financial assurances)



Wildlands Mitigation Bank, Placer County, California



# Credit Release

- Bank Signature/Easement = 20%
- As-Builts = 30%
- Hydrology = 30%

Wildlands Mitigation Bank, Placer County, California



# Credit Release

- Bank Signature/Easement = 20%
- As-Builts = 30%
- Hydrology = 30%
- Vegetation = 20%

Wildlands Mitigation Bank, Placer County, California



# Credit Release

- **Bank Signature/Easement = 20%**
- **As-Builts = 30%**
- **Hydrology = 30%**
- **Vegetation standards = 20%**  
interim milestones
- **All Standards Met**

Wildlands Mitigation Bank, Placer County, California



# Bankers Perspective: Pro's and Con's of Credit Release Methods

## ■ Pro's:

- Quality of Product
- Product Assurances
- Interim Milestone
- Public Acceptance
- Economic Incentives

## ■ Con's:

- Reduced sales rate
- Time and Money
- Less Certainty
- Greater Liability
- Competitive Disadvantage to other forms of mitigation



# Credit Release

Individual Mitigation  
Project / In-Lieu Fee

**100%**  
at time of  
Permit  
Issuance

Draft Sacramento District  
Proposal - 2005\*

10% at BEI / Conservation Easement	10%
5% at Construction (As-Builts)	15%
75% over time at Corps discretion (undefined)	90%

**10%  
Withheld**  
(1.1% credit per sale)

San Francisco Corps  
District - May 17, 2005

15% at BEI / Conservation Easement	15%
25% at Construction (As-Builts) & Hydrology	40%
15% at Year 2 Performance Standards	55%
15% at Year 3 Performance Standards	70%
15% at Year 4 Performance Standards	85%
15% at Year 5 Performance Standards	100%

**45%  
Not Released  
Until After 3 Years**

Proposed Mitigation  
Conservation Coalition

20% at BEI / Conservation Easement	20%
30% at Construction (As-Builts)	50%
30% at Hydrology	80%
20% at Vegetation Standard (Year 3)	100%

\* Draft proposal provided 4/6/2005



# Potential Approaches to Water Quality Performance Standards

- Quantifiable Good

- \* DO or Phosphorus or Sediment; OR
- \* Water Quality Unit (all the above)

- Generally Accepted Unit of Measurement

- \* 1 acre of buffer strip
- \* 1 acre of managed marsh
- \* 100 linear feet of stream

[ \* = # pounds/units of WQ benefit ]

# Potential Approaches to Water Quality Credit Release

- Adopt Acre per Unit Standard
- Base on Percent of Habitat Completion  
(% habitat = 5% WQ benefits/units)
- Monitor WQ inflow and outflow

- Recommendation:

## Different Market Recapture Mechanism

“Annual payments/fee (based on water units/flow versus one time fee for habitat (current wetland bank model)

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# **Mitigation Banks: Performance Standards and Credit Release**

## **Questions?**

**Nookachamps Wetland Mitigation Bank, Skagit County, Washington**