

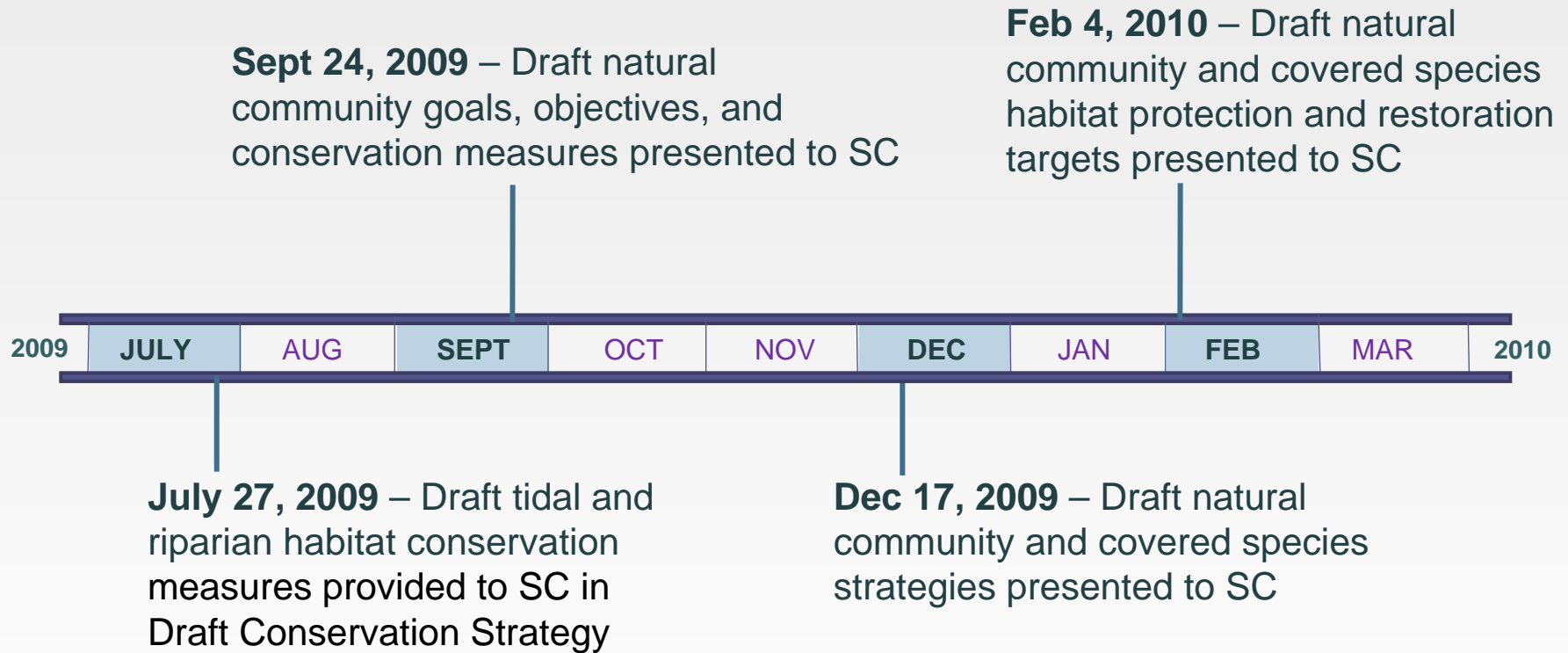


# **DRAFT BDCP Effects Analysis Results for Terrestrial Resources**

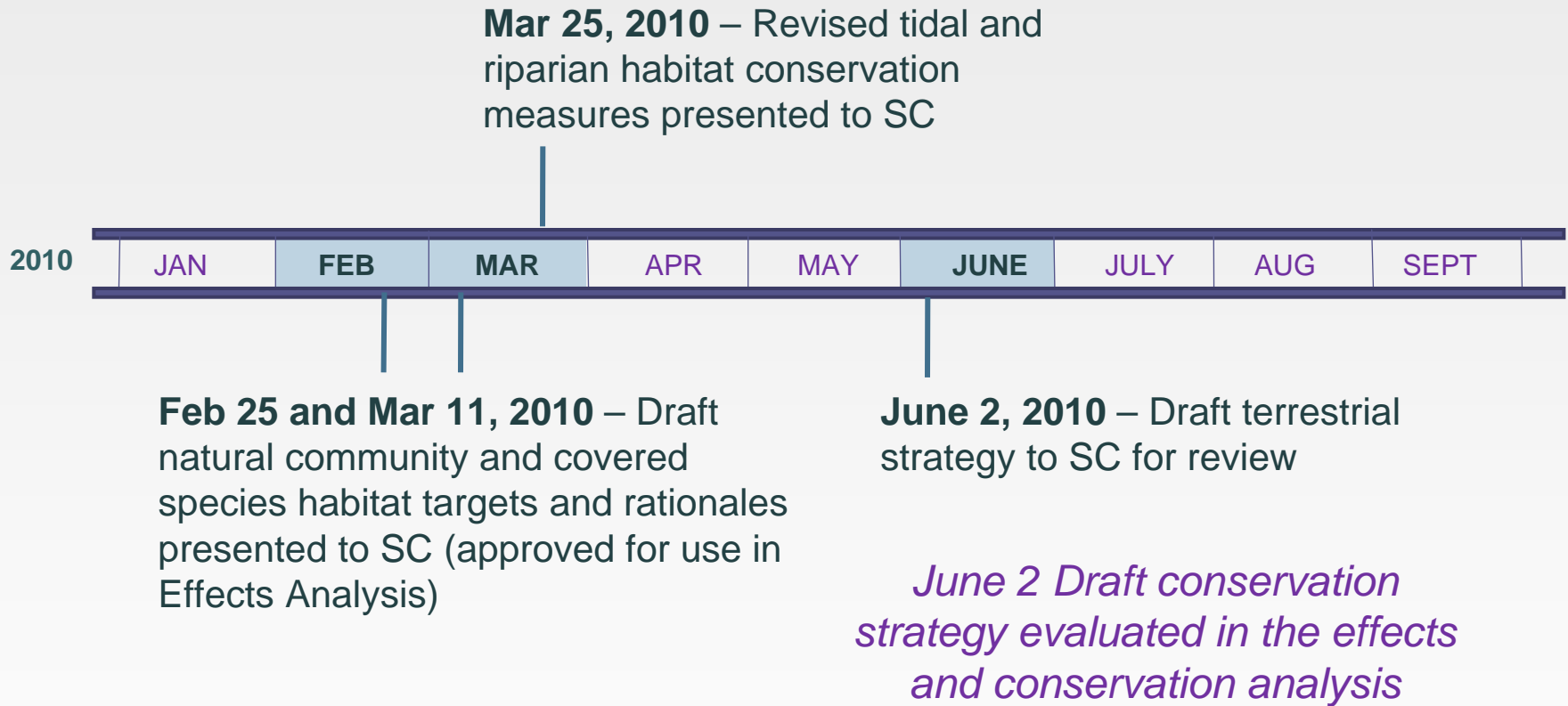
Presentation to:  
**BDCP Steering Committee**

July 15, 2010

# ► Terrestrial Conservation Strategy Development



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## ► Effects Evaluation Approach

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- Pipeline/Tunnel construction and maintenance effects evaluated based on design footprints
- Conservation measure effects evaluated based on reasonable footprint and location assumptions to predict effects

## ► Methods and Tools

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- Covered species habitat models
- GIS vegetation database
- Pipeline/Tunnel facilities footprints (actual effects)
- Fremont Weir modification footprint (predicted effects – worst case)
- SAIC “hypothetical” habitat restoration footprints (predicted effects)

## ▶ Important Assumptions

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- ▶ Avoidance and minimization measures
- ▶ Effects of selected habitat restoration measures (e.g., vernal pool complex will be restored on agricultural lands)
- ▶ Development of restored habitat functions

## ► Results Framework

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- Effects analyzed for 10 action categories
- Effects fully described for the late long-term evaluation point
- Effects incurred at the near-term and the early late-term evaluation points are described as a subset of the late long-term effects
- Effects for each action disaggregated by:
  - Permanent direct and indirect effects
  - Temporary direct and indirect effects
  - Periodic effects (floodplain inundation events)
- Summary description of overall effects of full BDCP implementation on each natural community and covered species

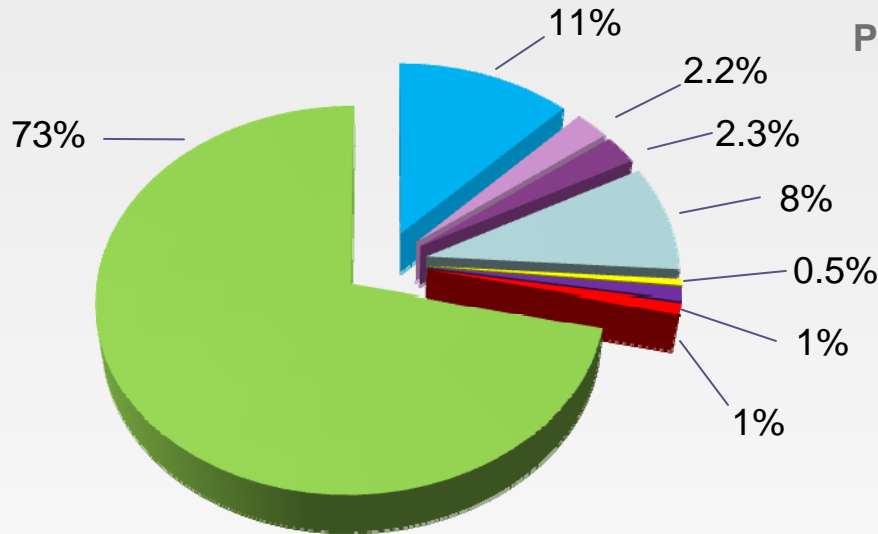
## ▶ Primary Effects on Natural Communities

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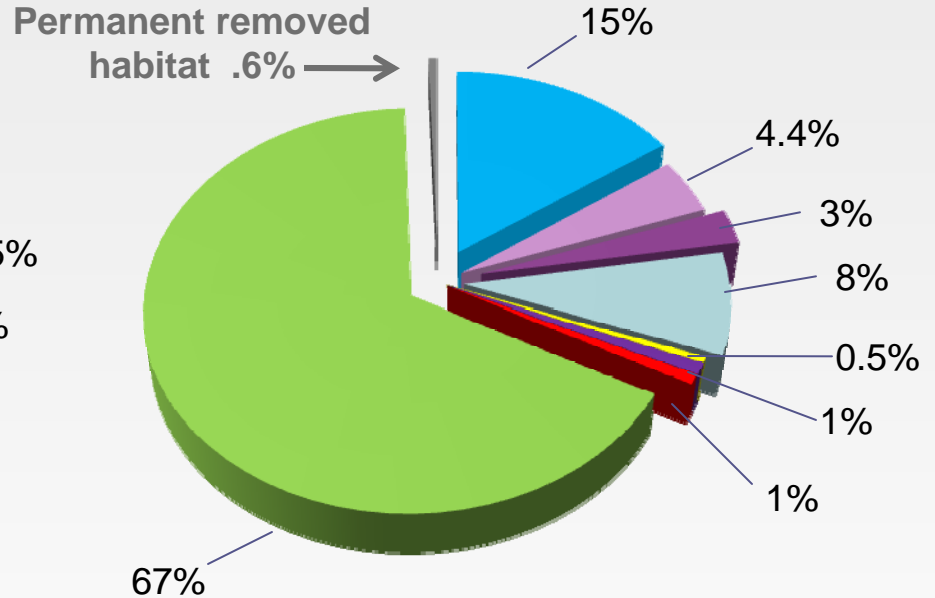
- ▶ Conversion of existing natural communities to other natural communities
- ▶ Removal of natural communities as a result of development (i.e., facilities footprints)
- ▶ Change in hydrodynamic conditions (e.g., salinity gradients)

# Change in Extent of Natural Communities with Full BDCP Implementation

**Existing Extent**



**Extent with BDCP Implementation**

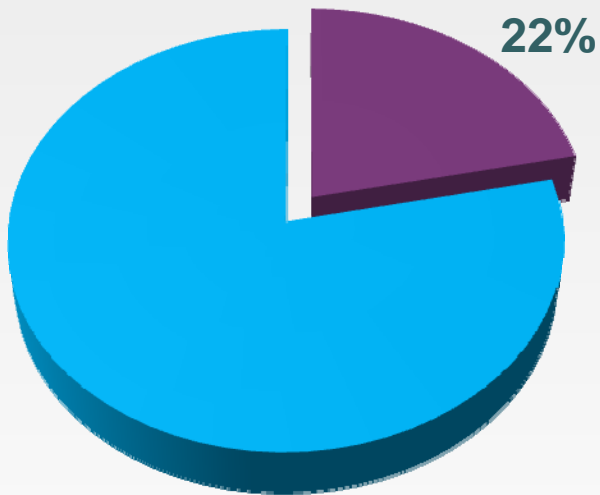


**Natural Communities**

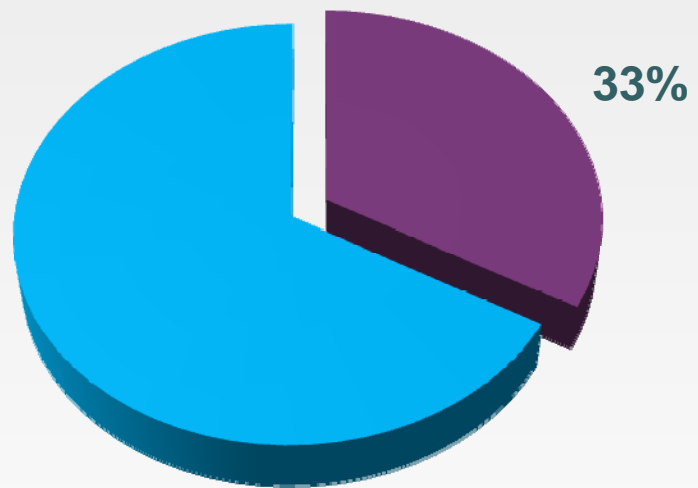
- Tidal Perennial Aquatic
- Tidal Wetland
- Riparian
- Grassland
- Alkali Seasonal Wetland
- Vernal Pool Complex
- Nontidal Wetland
- Managed Wetland/Agricultural Lands

# ► Change in Extent of Protected Natural Communities with Full BDCP Implementation

Existing Protected

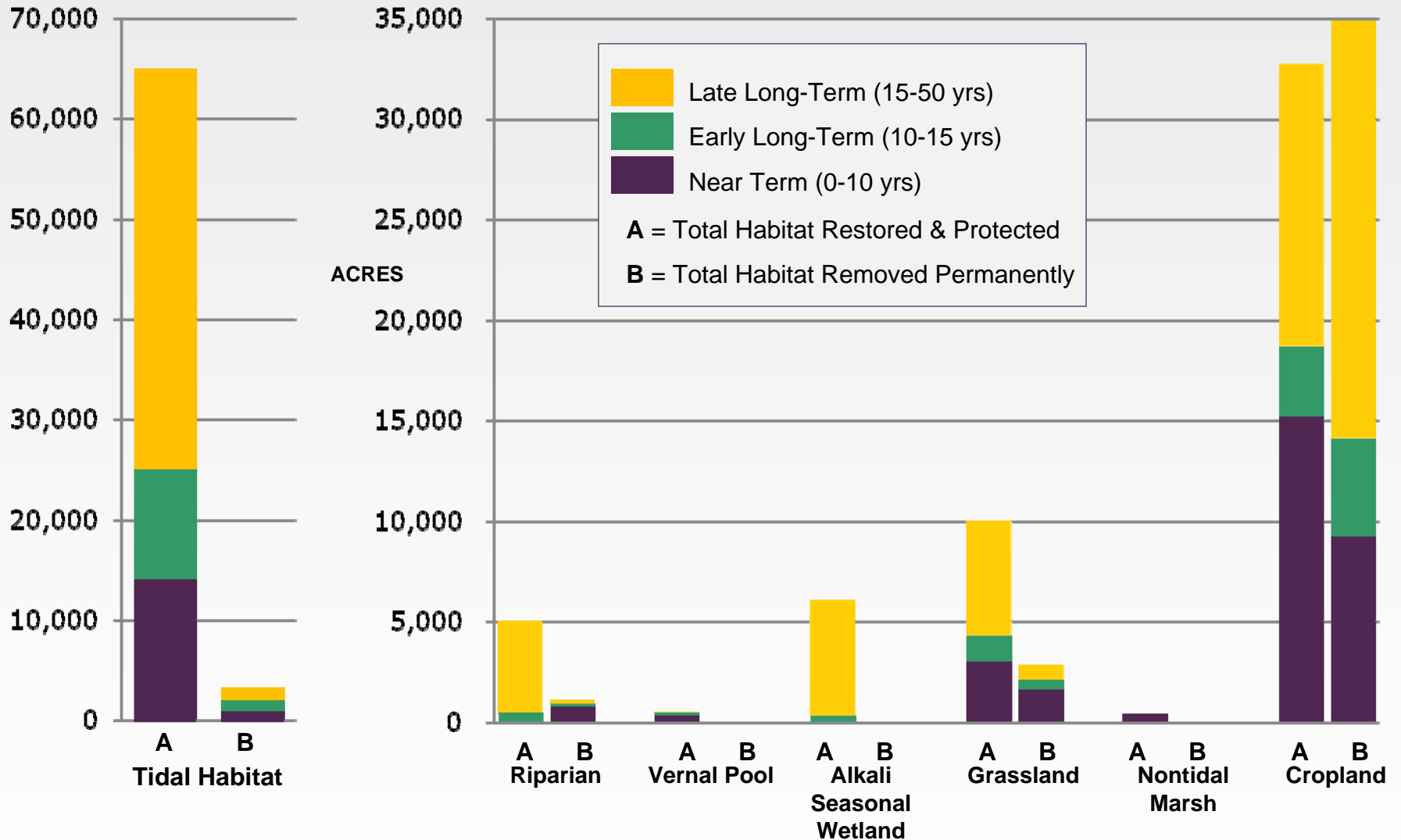


Protected with BDCP Implementation



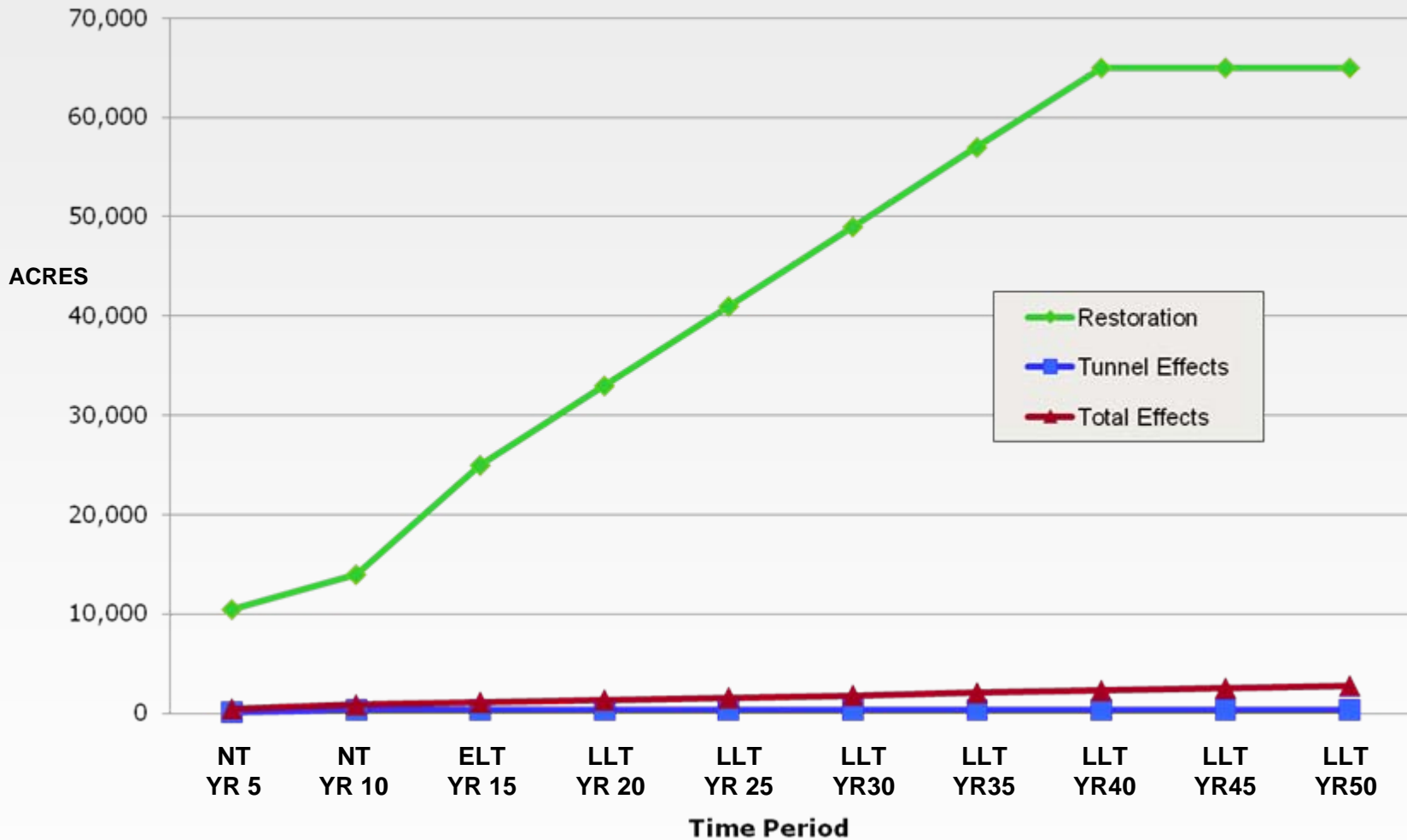
■ Protected    ■ Unprotected

# Habitat Restored & Protected at Each Effects Analysis Evaluation Point



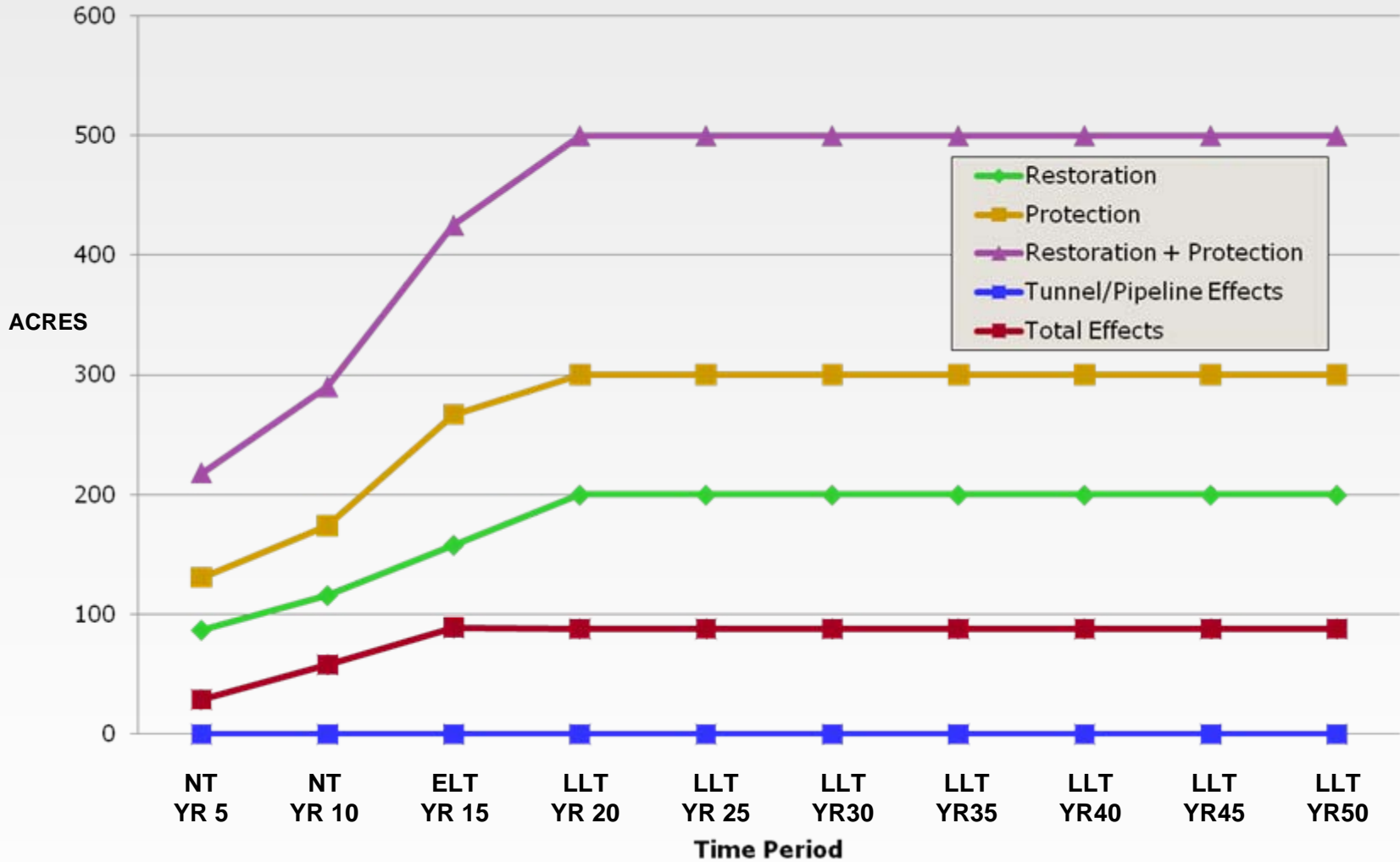
# Natural Community Effects Results

## Tidal Habitat Effects and Restoration



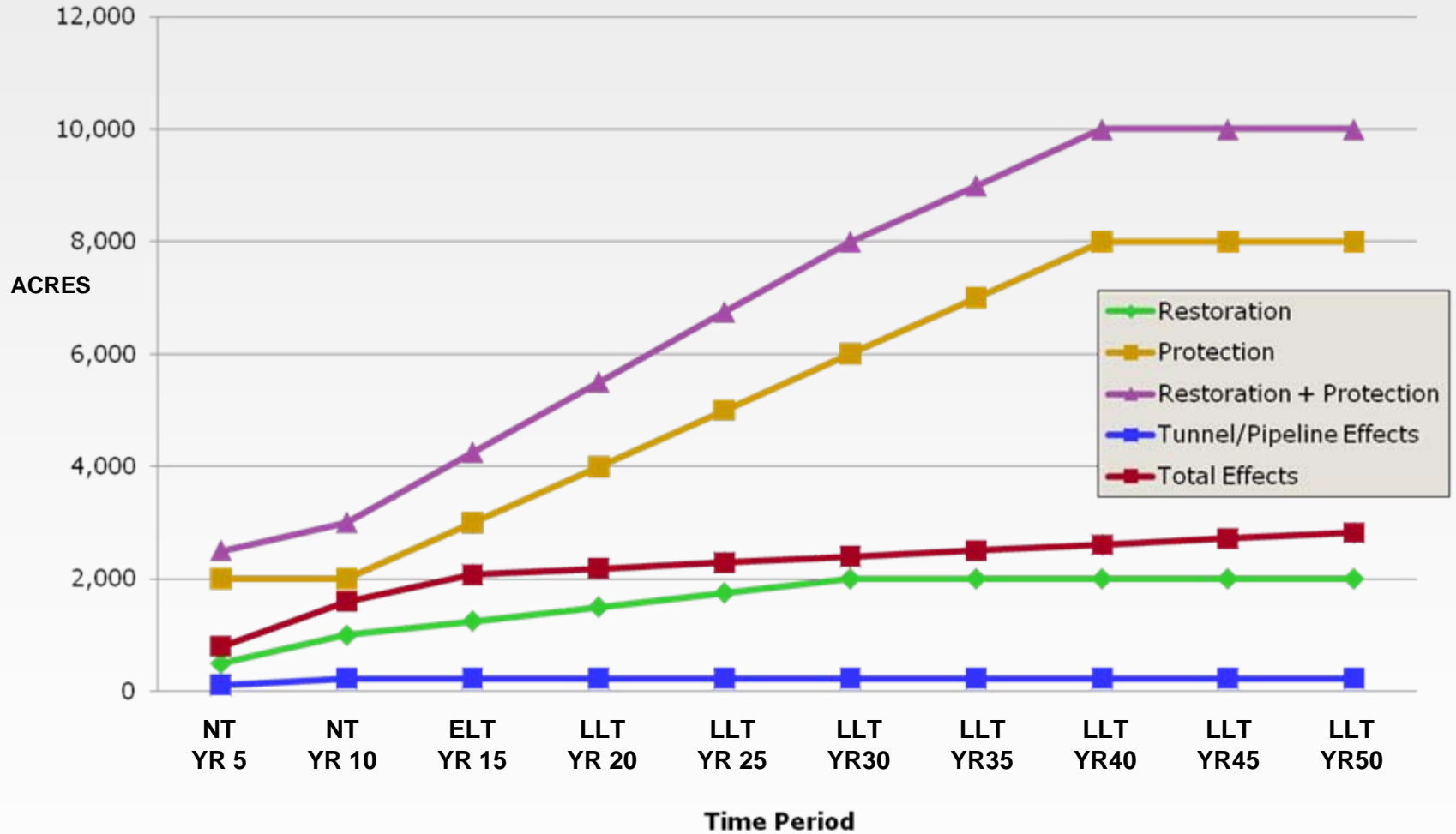
# Natural Community Effects Results

## Vernal Pool Complex Effects, Restoration, and Protection



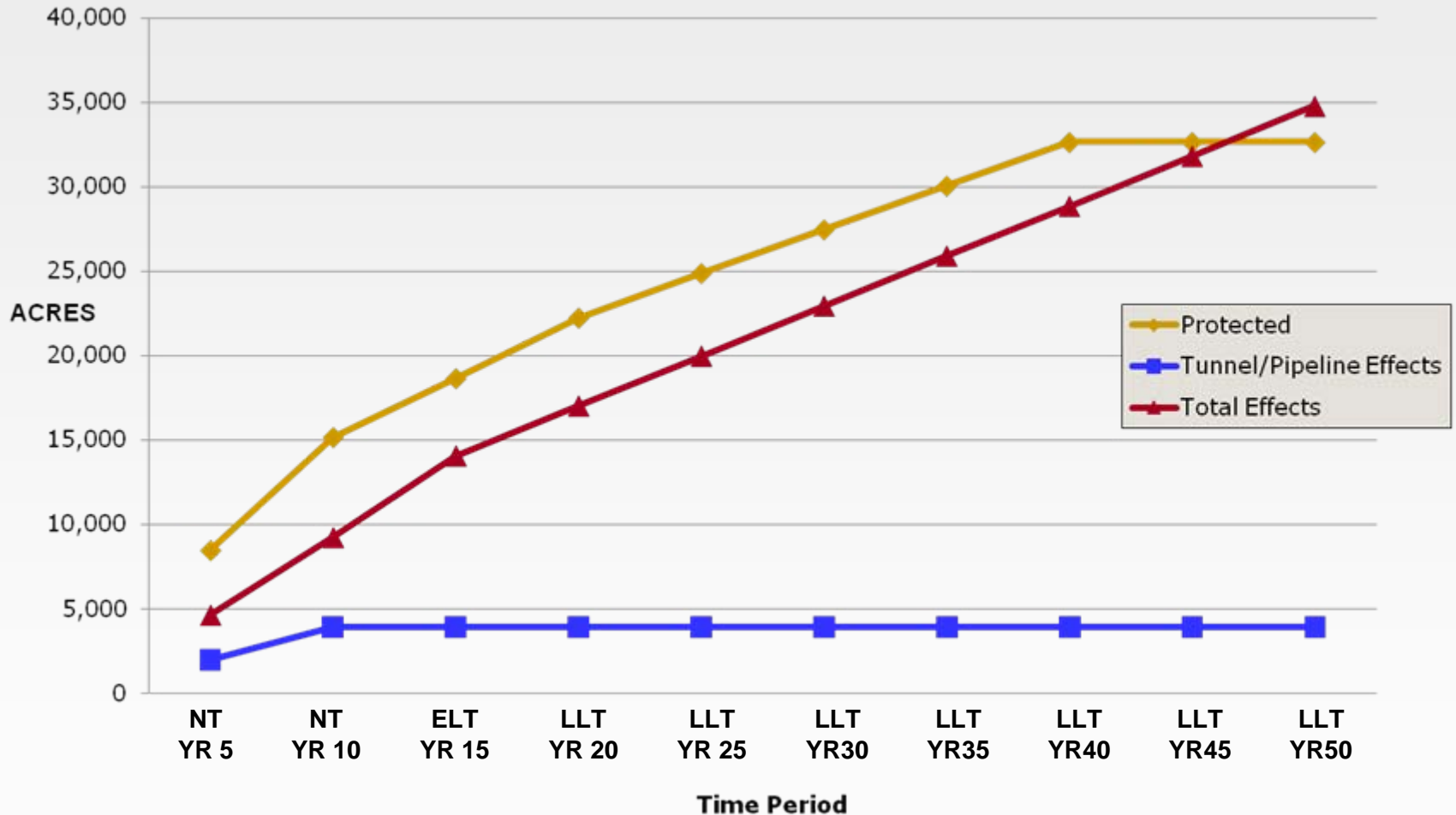
# Natural Community Effects Results

## Grassland Effects, Habitat Restoration, and Protection



# Natural Community Effects Results

## Agricultural Cropland Effects and Protection



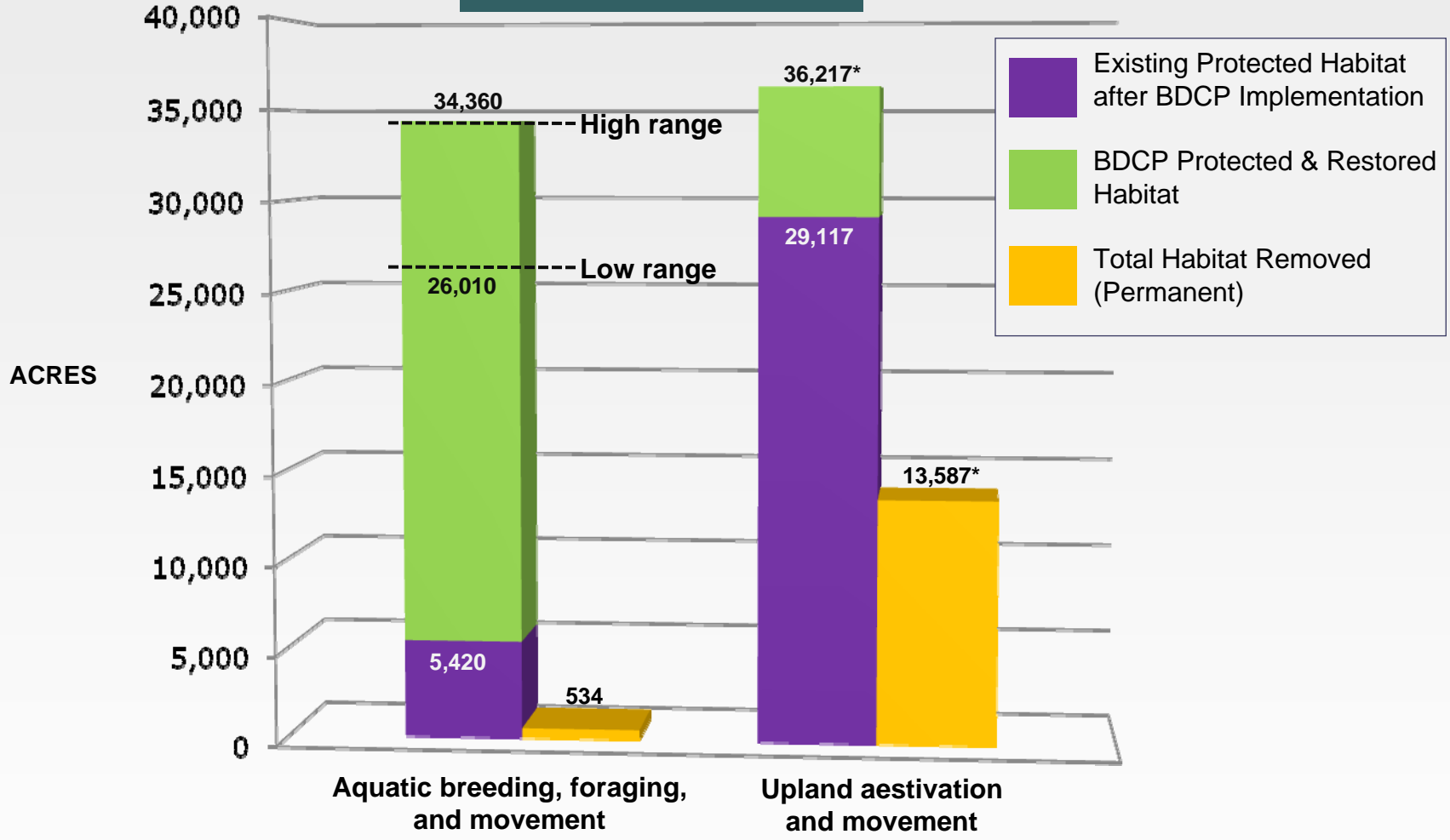
## ▶ **Primary Effects on Covered Species**

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- ▶ Change in extent and connectivity of habitat
- ▶ Effects on individuals (e.g., direct injury or mortality)

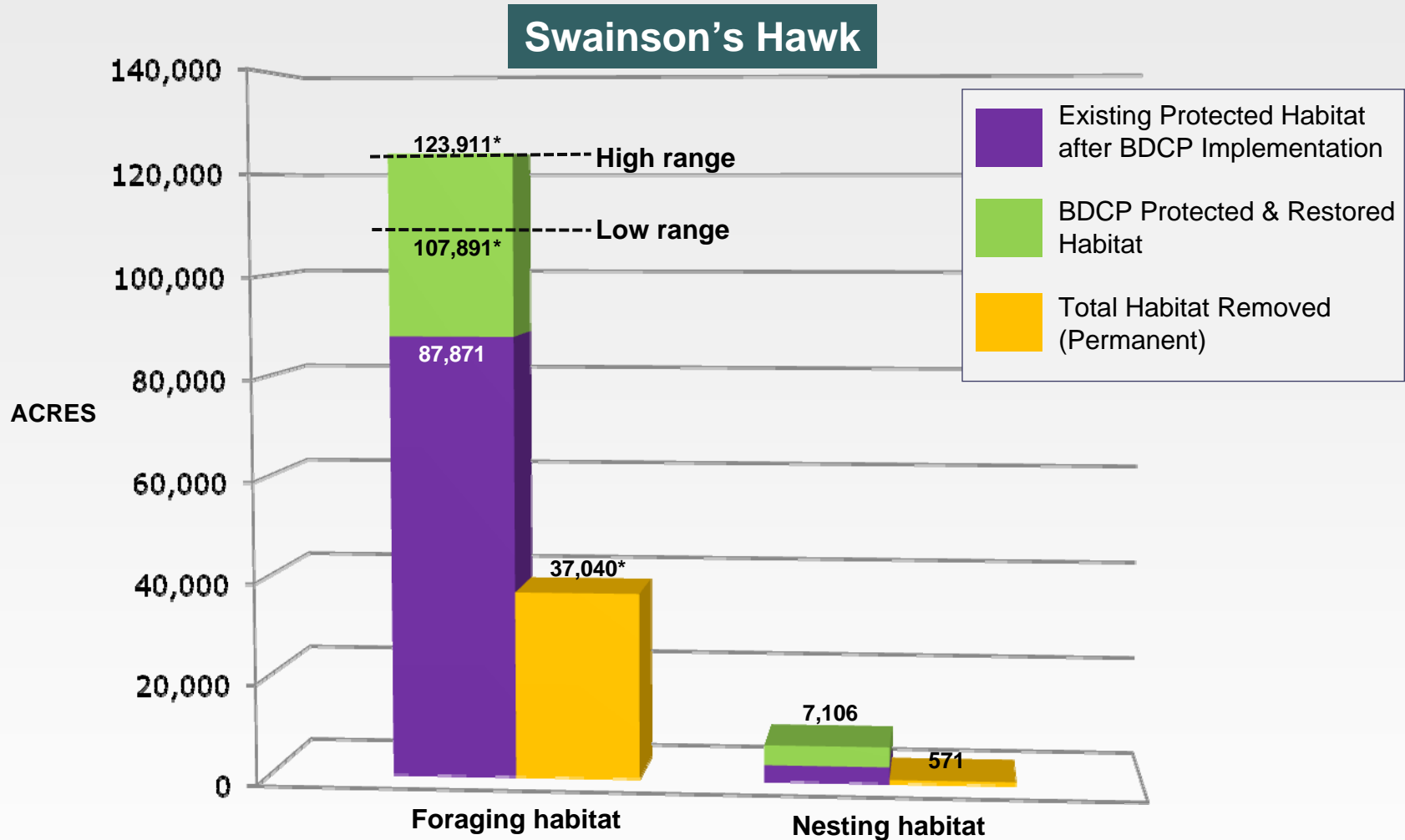
# Covered Species Effects Results

## Giant Garter Snake



\*Note that the biological function of upland aestivation and movement habitat protected and restored under the BDCP will be substantially greater per acre and greater in total than the function of the habitat removed.

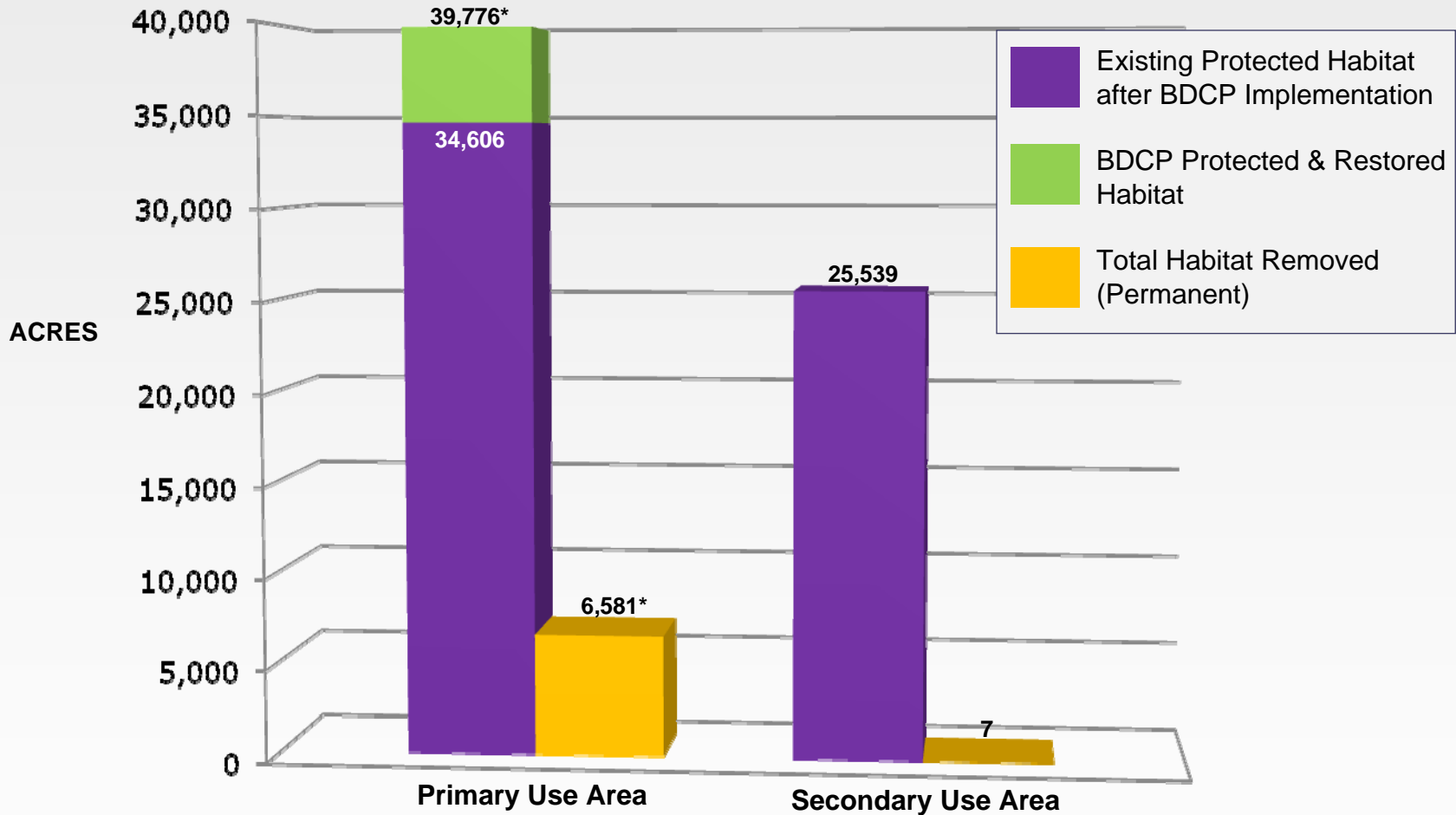
# Covered Species Effects Results



\*Note that the biological function of foraging habitat protected and restored under the BDCP will be substantially greater per acre and greater in total than the function of the habitat removed.

# Covered Species Effects Results

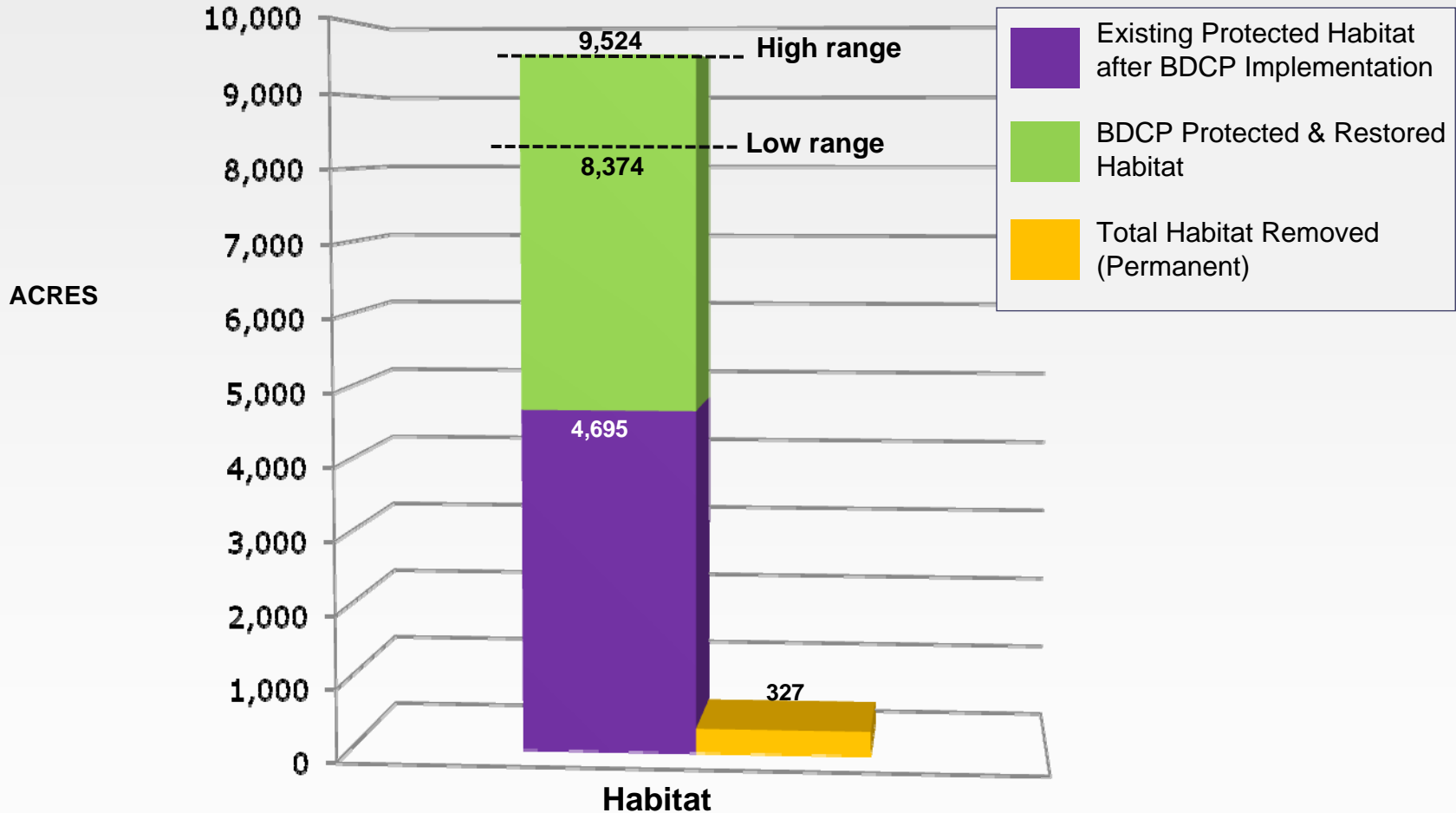
## Greater Sandhill Crane



\*Note that the biological function of primary use area protected and restored under the BDCP will be substantially greater per acre and greater in total than the function of the habitat removed.

# Covered Species Effects Results

## California Clapper Rail



## ▶ Potential Need for Conservation Strategy Adjustments

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- ▶ More specificity to address uncertainties regarding a species response to conservation actions
  - Western pond turtle response to salinity changes in Suisun Marsh
  - Soft bird's-beak ability to establish in restored habitat
- ▶ Although all covered species are expected to benefit with full BDCP implementation, is more conservation needed to adequately contribute to the conservation of a species
- ▶ Refine and add avoidance and minimization measures
- ▶ Timing of implementation of conservation measures

## ▶ Next Steps – Steering Committee

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- ▶ Focus review on descriptions of overall outcomes for each natural community and covered species
- ▶ Identify the natural communities and covered species outcomes of concern and reasons for concern for discussion at the July 29 SC meeting

## ▶ Next Steps – SAIC

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- ▶ Refine and add avoidance and minimization measures
- ▶ Based on effects analysis, prepare recommendations for adjusting conservation measures and targets for discussion at the July 29 SC meeting
- ▶ Complete functional analysis of effects on waterfowl and shorebird habitat and adjust existing or add additional conservation measures if needed

# Questions & Discussion