



DRAFT BDCP Implementation Schedule

Presentation to:
BDCP Steering Committee

August 12, 2010

► Implementation Schedule Purposes

- Part of Chapter 6 Implementation Plan
- Provides basis for:
 - evaluating Plan implementation progress over the term of the BDCP;
 - evaluating the temporal relationship between implementation effects and conservation benefits; and
 - estimating the temporal distribution of implementation costs over the term of the BDCP.

► **Implementation Schedule Development Information**

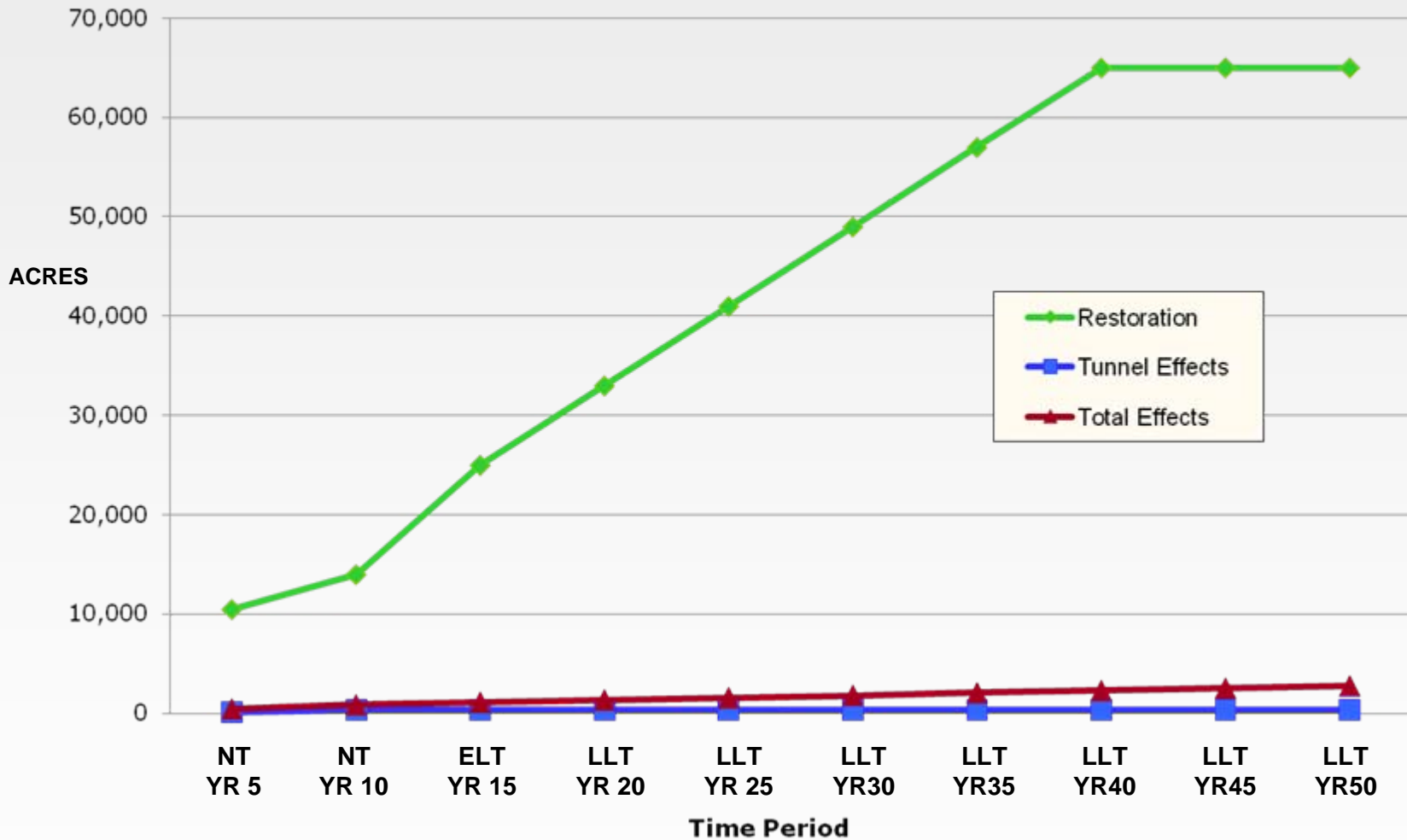
- Targets for tidal, seasonally inundated floodplain, and channel margin habitats NT, ELT, and LLT
- Terrestrial strategy habitat conservation targets
- Pipeline/tunnel construction schedule and footprint
- Effects of BDCP implementation on natural communities and covered wildlife and plant species' habitats at the NT, ELT, and LLT evaluation points

► **Implementation Schedule Development Concepts**

- Implement habitat protection and restoration actions to be commensurate or in advance of timing of adverse effects on species and habitat
- Initiate all conservation measures and adaptive management as early as practicable
- Develop a feasible implementation schedule

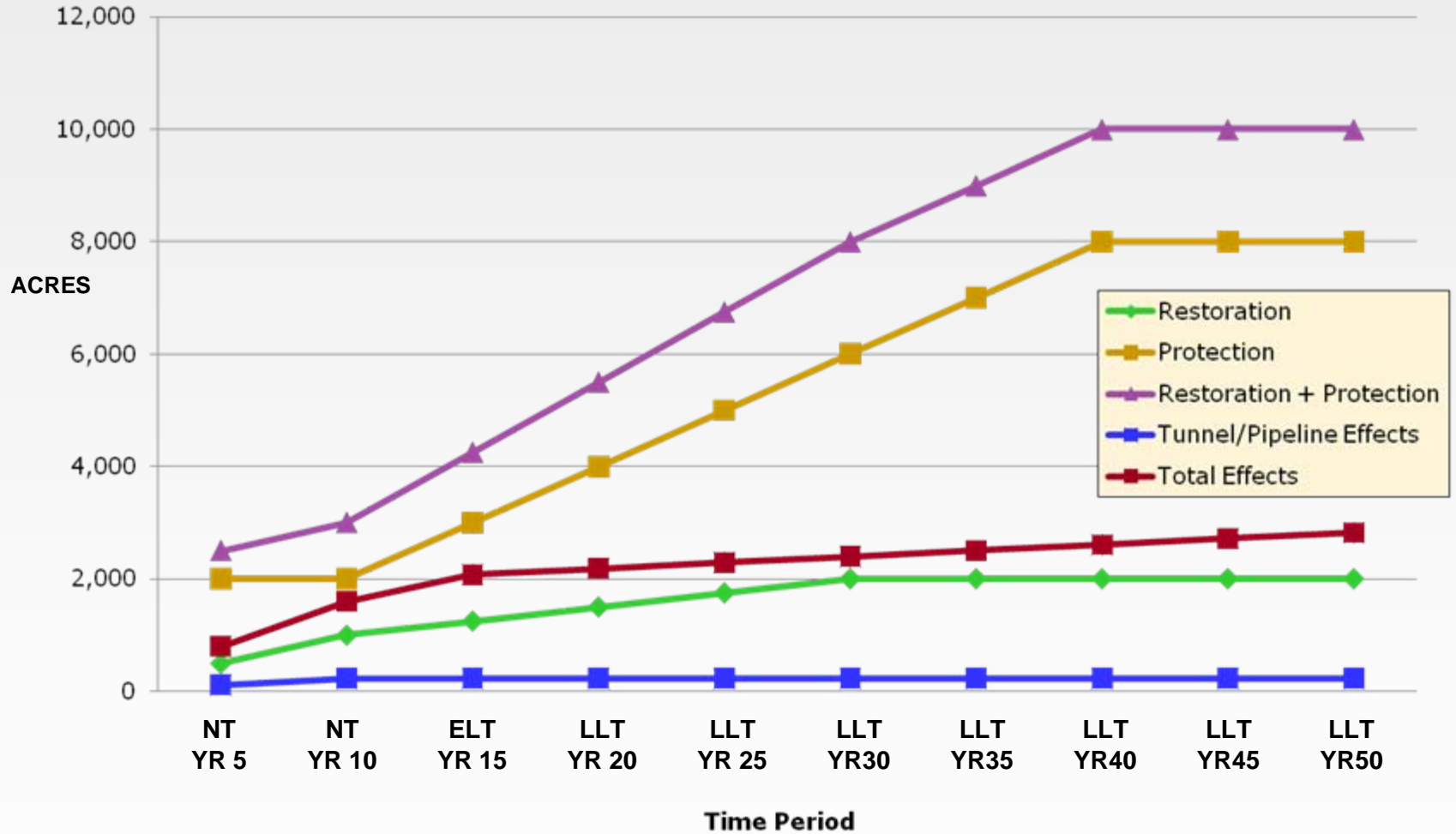
▶ Example #1: Conservation Commensurate with Effects

Tidal Habitat Effects and Restoration



▶ Example #2: Conservation Commensurate with Effects

Grassland Effects, Habitat Restoration, and Protection



► Implementation Schedule Action Timeframes

- Near Term implementation period at 1-year increments to capture temporal effects of pipeline/tunnel construction
- Long Term implementation period at 5-year increments in recognition of uncertainties associated with specific implementation years at these extended timeframes

► Scheduled Implementation Actions

- Estimated durations for:
 - site acquisition, planning, environmental compliance, and construction;
 - interagency coordination and feasibility evaluations; and
 - point at which conservation measure is considered to be implemented (note that full effectiveness of the measure may take additional time)

▶ CM1: Water Facilities and Operations

- ▶ Pipeline/tunnel facilities construction is completed in the NT implementation period in accordance with the DHCCP construction schedule
- ▶ No construction-related effects on covered species and natural communities in the first year following BDCP approvals
- ▶ Implementation of near-term through-Delta water operations continue throughout the NT period
- ▶ Following completion of the pipeline/tunnel facilities, long-term dual conveyance water operations are implemented during the ELT and LLT periods

▶ CM14: Yolo Bypass Fishery Enhancements

- ▶ Assumes that necessary coordination/studies with flood control agencies to modify the Fremont Weir and Sacramento Weir require 5-years and are initiated prior to full BDCP authorization
- ▶ Assumes that all planning for all enhancements are completed by Year 6 and construction is completed in Year 7

▶ CM10: Tidal Habitat Restoration

- ▶ Extent to be restored in the NT period offsets adverse effects and contributes to conservation
- ▶ Assumes that tidal habitat restoration planning is underway prior to BDCP authorization to ensure that Year 2, 4, and 5 restoration of 7,000 acres can be achieved
- ▶ Remainder of schedule assumes that a 5-year planning horizon is sufficient to ensure that subsequent NT, ELT, and LLT restoration schedule can be achieved
- ▶ “Implemented” means site preparation and breach are complete, but establishment of full habitat functions will take additional time

▶ CM12: Riparian Habitat Restoration

- ▶ Implemented as a component of tidal, seasonally inundated floodplain, and channel margin habitat restoration actions — consequently, schedule is driven by the schedule for those actions
- ▶ Temporal distribution of restoration is estimated based on site suitability and design assumptions for tidal, seasonally inundated floodplain, and channel margin habitat restoration/enhancement
- ▶ Reliance of riparian restoration on the timing of floodplain restoration necessitates evaluation of NT and ELT targets
- ▶ “Implemented” means site preparation and restoration of hydrology, but establishment of full habitat functions will take additional time

▶ **CM11: Channel Margin Habitat Enhancement**

- ▶ Assumes that each 5-mile increment of channel margin habitat enhancement will require up to 10-years to complete necessary coordination/studies for flood control agencies, design and construction planning, and implementation
- ▶ Assumes that time needed for coordination/studies in the Long Term period could be reduced with experience and efficiencies gained from implementation of early channel margin projects

▶ **CM13: Seasonally Inundated Floodplain Restoration**

- ▶ Assumes that each floodplain habitat restoration increment requires up to 10-years to complete necessary coordination/studies for flood control agencies, design and construction planning, and implementation
- ▶ Assumes that time needed for Long Term coordination/planning could be reduced with planning efficiencies following completion of the first 1,000 acres of restoration

▶ CM16: Restore Vernal Pool Complex

- ▶ Assumes planning for first increment of vernal complex restoration is initiated before BDCP authorization to ensure restoration is implemented commensurate with potential adverse effects on vernal pool complex
- ▶ Subsequent vernal pool complex restoration schedule assumes 3-year planning horizon and timed to be commensurate with potential adverse effects on vernal pool complex and contribute to conservation of vernal pool species (by achieving conservation targets)

▶ CM18: Create the Preserve System

- ▶ Assumes planning for first increment of alkali seasonal wetland complex, grassland, and agricultural habitat protection/preservation is initiated prior to BDCP authorization to ensure protection/preservation is implemented commensurate with potential effects on these natural communities and associated covered species
- ▶ Subsequent natural community protection/preservation vernal pool complex restoration schedule assumes a 2-year planning horizon for natural habitats and a 1-year planning horizon for agricultural habitat

▶ CM18: Create the Preserve System

- ▶ Assumes planning for first increment of alkali seasonal wetland complex, grassland, and agricultural habitat protection/preservation is initiated prior to BDCP authorization to ensure protection/preservation is implemented commensurate with potential adverse effects on these natural communities and associated covered species
- ▶ Subsequent protection/preservation of natural communities assumes a 2-year planning horizon

▶ **CM17: Restore 2,000 acres of Grassland**

CM15: Restore 400 acres of Nontidal Freshwater Marsh

- ▶ Assumes a 2-year planning horizon for each increment of restoration
- ▶ Restoration schedule is implemented commensurate with potential adverse effects on these natural communities and associated covered species

► Other Stressors Conservation Measures

- CM2: Stockton Deep Water Ship Channel Dissolved Oxygen Levels
 - Ongoing program implemented following BDCP approvals
- CM3: Illegal harvest and CM4: Hatchery and genetic management plans
 - Assumes 1-year is required for planning following BDCP authorization before implementation commences
- CM5: Conservation hatcheries and CM6: Predator control
 - Assumes 2-years of planning before hatchery expansion and predator control actions are implemented

► Other Stressors Conservation Measures

- ▶ CM7: Non-physical fish barriers
 - Assumes planning is initiated before BDCP approvals and 1-year of additional planning following approvals before implementation
- ▶ CM8: Methylmercury
 - Measures to reduce methylation of mercury are implemented on the same schedule as tidal habitat restoration
- ▶ CM9: Non-native aquatic vegetation control
 - Assumes 3-years required for planning following BDCP approvals and that control actions are implemented 2-years following implementation of first tidal habitat restoration

Questions & Discussion