

Table 7-3. Natural Community-Level Monitoring Actions and Example Monitoring Approaches and Metrics

Natural Community-Level Monitoring Action	Objective	Approach ¹		Metrics ¹
		Method	Schedule	
NCM1. Monitor effects of grazing on the function of vernal pools as habitat for covered plant and shrimp species on BRCP conservation lands	Document the effects of changes in BRCP conservation land grazing prescriptions on the function of BRCP vernal pool habitats for covered plant and shrimp species to determine if changes in grazing management are needed	To be determined by BCAG during implementation based on site-specific conditions.	Monitoring sites will be monitored for at least the longest period of the following: Every year for 5 years following changes in grazing management or until two wet years as defined by DWR are experienced.	Percent bare ground Percent composition (species, dry matter) Soil characteristics (erosion, compaction, organic content)
NCM2. Monitor small mammal populations on BRCP conservation lands	Document the presence and relative abundance of small mammals, especially burrowing mammals and meadow voles on BRCP conservation lands to determine if changes in land management are needed	Establishment of burrow transects, small mammal trapping plots, and visual observations to document species and abundance	Ten survey plots per 10-year implementation period	Area occupied by burrowing mammals Density of burrows Rodent densities by species
NCM3. Monitor cottonwood-willow riparian restoration sites	Document the development of ecological functions over time relative to attribute criteria (Note: monitoring for covered species use of restored habitats is addressed in species-level monitoring actions in Table 7-4).	Establishment and surveys of vegetation transects. Use California Rapid Assessment Method (CRAM) as appropriate for specific riparian type.	Every 2 years/restoration site for 10 years following restoration, every 5 years thereafter	Species composition Percent vertical and horizontal cover Diameter at breast height (dbh) of planted trees Rate of tree and shrub growth (height and canopy diameter) Survivorship of plantings Causes of seedling/sapling mortality

Table 7-3. Natural Community-Level Monitoring Actions and Example Monitoring Approaches and Metrics (continued)

Natural Community-Level Monitoring Action	Objective	Approach ¹		Metrics ¹
		Method	Schedule	
NCM4. Monitor valley oak riparian restoration sites	Document the development of ecological functions over time relative to attribute criteria (Note: monitoring for covered species use of restored habitats is addressed in species-level monitoring actions in Table 7-4).	Establishment and surveys of vegetation transects. Use California Rapid Assessment Method (CRAM) as appropriate for specific aquatic or wetland type.	Every 2 years/restoration site for 10 years following restoration, every 5 years thereafter	Species composition Percent vertical and horizontal cover Absolute and relative cover of target plant species dbh of planted trees Rate of tree and shrub growth (height and canopy diameter) Survivorship of plantings Causes of seedling/sapling mortality
NCM5. Monitor willow scrub restoration sites	Document the development of ecological functions over time relative to attribute criteria (Note: monitoring for covered species use of restored habitats is addressed in species-level monitoring actions in Table 7-4).	Establishment and surveys of vegetation transects. Use CRAM as appropriate for specific riparian type.	Every 2 years/restoration site for 10 years following restoration	Species composition Percent vertical and horizontal cover Absolute and relative cover of target plant species Rate of shrub growth (height and canopy diameter) Survivorship of plantings Causes of seedling/sapling mortality
NCM6. Monitor emergent wetland and giant garter snake restoration sites	Document the development of ecological functions over time relative to attribute criteria (Note: monitoring for giant garter snake use of restored habitats is addressed in species-level monitoring actions in Table 7-4).	Establishment and surveys of vegetation transects Mapping of emergent wetland, aquatic, and upland habitat Use CRAM as appropriate for specific wetland type.	Every 2 years/restoration site for 10 years following restoration	Species composition; Percent absolute and relative cover of target emergent vegetation species Proportion and distribution of emergent wetland, aquatic, and upland habitat area Water depth Connectivity with adjacent giant garter snake habitat areas

Table 7-3. Natural Community-Level Monitoring Actions and Example Monitoring Approaches and Metrics (continued)

Natural Community-Level Monitoring Action	Objective	Approach ¹		Metrics ¹
		Method	Schedule	
NCM7. Monitor vernal pool complex restoration sites	Document the development of ecological functions over time relative to attribute criteria (Note: monitoring for establishment of covered plant and shrimp species in restored vernal pools is addressed in species-level monitoring actions in Table 7-4).	Establishment and surveys of vegetation transects Use CRAM for vernal pool systems.	Every 2 years/restoration site for 10 years following restoration, every 10 years thereafter	Species composition Absolute and relative cover of target plant species Hydroperiod
NCM8. Monitor the status of nonnative species on BRCP conservation lands	Identification of high priority sites for implementation of control activities and to determine effectiveness of control measures	Visual observation of infestations of non-native invasive plants and brown-headed cowbird presence and abundance in the course of conducting land management and other monitoring activities Spotlighting and seine surveys of ponds to assess presence and abundance of bullfrogs and non-native predatory fish	Ongoing visual observations Every 5 years for pond surveys 1 year following implementation of implementation of control actions	Species presence and relative abundance
NCM9. Document status and trends in natural communities and covered species habitats on BRCP conservation lands	Document trends in the acreage and ecological function of natural communities and covered species habitats on BRCP conservation lands to inform future BRCP implementation through the adaptive management decision making process	Evaluation of current aerial imagery (see LLM3 in Table 7-2), BRCP monitoring data, and new information developed by others	Every five years for each conservation land management unit	Change in the status of the acreage and function of natural communities and covered species habitats

Table 7-3. Natural Community-Level Monitoring Actions and Example Monitoring Approaches and Metrics (continued)

Natural Community-Level Monitoring Action	Objective	Approach ¹		Metrics ¹
		Method	Schedule	
NCM10. Monitor habitat enhancements that may be implemented under CM6	Document the development of ecological functions over time relative to attribute criteria ² Document the response of covered species and other native species site-specific habitat enhancements to determine their effectiveness in providing species benefits (e.g., use of artificial brush piles by quail and small mammals)	Variable depending on the type of habitat enhancement	Variable depending on the type of habitat enhancement, but of sufficient duration to determine effectiveness	Variable depending on the type of habitat enhancement, but valid for the purpose of assessing effectiveness

¹Represents the anticipated initial approach and metrics. The initial approach, schedule, and metrics used at the time BRCP implementation commences may differ and these monitoring elements are subject to ongoing change over the term of the BRCP through the adaptive management decision making process described in Section 7.3, *Adaptive Management Plan*.

²Development of attribute criteria is described in Section 7.2.3.2, *Effectiveness Monitoring*.