



Vernal Pool
Management
MCB Camp Pendleton

William Raitter
Vernal Pool Ecologist

Context

- MCB Camp Pendleton is vital training facility for USMC and partners
- MCB Camp Pendleton supports 7% of San Diego FS complexes and 18% of Riverside FS complexes in the region (San Diego County)
- Management plans facilitate efficient consultation between MCB Camp Pendleton and USFWS
 - Camp Pendleton has 19 T&E species, 7 of which have associated management plans that assist in training relief and project consultation
 - Training Restrictions: More than 3,500 mapped basins where training is currently restricted (~2,900 acres)



Yearly Monitoring
Army of two



Listed Species in our pools
Plants covered in Rare Plant Mgmt. Plan

1. Spreading Navarretia
2. San Diego Fairy Shrimp
3. Orcutt's grass
4. SD Button-celery
5. Riverside Fairy Shrimp

Artificial Basins

- LFS dominate
- Working on Abatement study with USGS
- Riverside will survive if ponding is sufficient
- Major conflict for road maintenance



Other Important Resources

- Waterfowl
- Spadefoot Toad
- Marsilea
- Pilularia
- Callitriche





SFT Basin Creation
In Tango Training Area

PLAN

- Vernal Pool Management Plant Elements
 - Maintain viable populations of San Diego and Riverside fairy shrimp on Base
 - Facilitate Base compliance with the Endangered Species Act (ESA)
 - Conservation Assurance CPEN Doing our part
- Relief of Training and Project Restrictions
 - Create a 3-level system for management based on training needs
 - Create a Consultation Class System for future projects



Goals

- Vernal Pool Management
 - No net loss of populations of San Diego and Riverside FS on Base
 - Conserve vernal pool ecosystems, high quality habitat
- Relief of Training and Project Restrictions
 - Un-mapping of 1,255 basins that were previously classified as vernal pools on the Environmental Operations Map
 - Reduced acreage for FS avoidance: 2,900 ac to 1,400 ac (~51% reduction)
 - Authorized take for occupied basins on existing roads & ranges
 - VP Consultation Class System created to reduce USFWS consultation times for projects with fewer restrictions

Proposed Training Restrictions by Conservation Level

Maximum

- No Off-road Vehicles
- No bivouacking w/in 50 m
- No Digging
- 1,568 basins
- 944 acres

Status Quo - Current Status

- No Off-road Vehicles
- No Bivouacking w/in 50 m
- No Digging
- 64 basins
- 157 acres

Limited

- No Digging
- 643 basins
- 762 acres

- Note: Other sensitive resources may be present-- Pacific Pocket Mouse, cultural sites, etc.

Example: Reduced Training Restrictions, TANGO TA





Timeline and Steps for Implementation

- Initial implementation: 10 Years – Start Consult ASAP
 - Progress assessment: Year 5 (Adaptive Mgmt.)
 - Coordinate with G-3/5
 - Update GIS Geodatabase, EOM, and Range Regulations
 - Provide routine briefs and education sessions
 - Implement compensation, restoration, and monitoring – Already started many on going restorations
- 



Restoration Work

VP68
Soma
Del Mar

