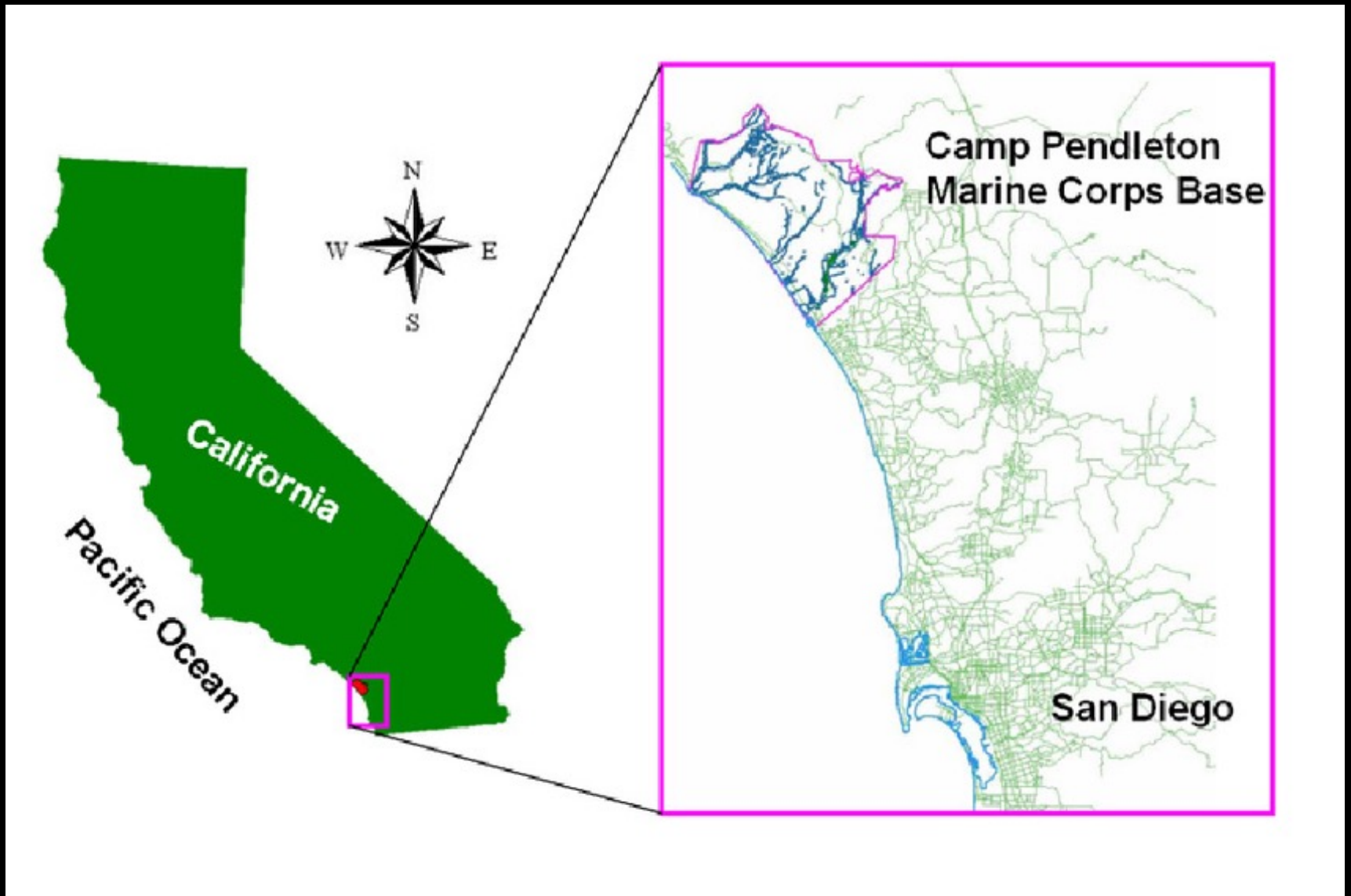




# The Vascular Flora of MCB Camp Pendleton

**Jon P. Rebman**  
&  
**Margaret R. Mulligan**  
San Diego Natural History Museum



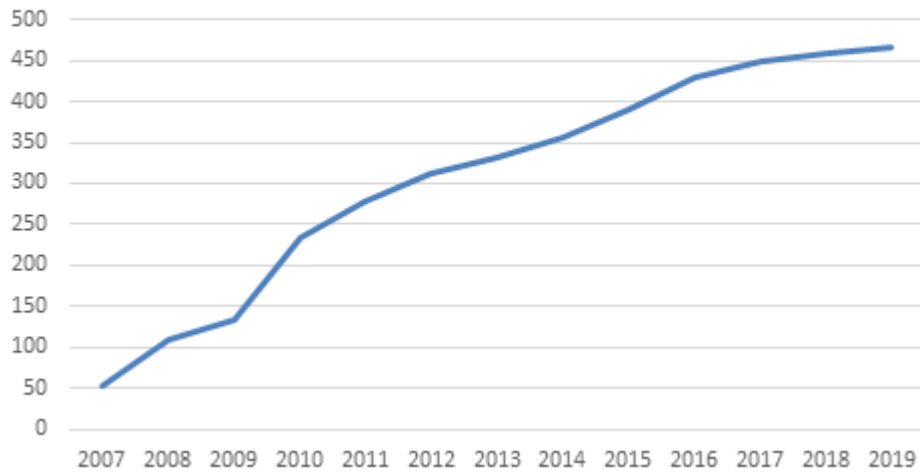
**MCB Camp Pendleton is approx. 125,000 acres**

# Flora of MCB Camp Pendleton

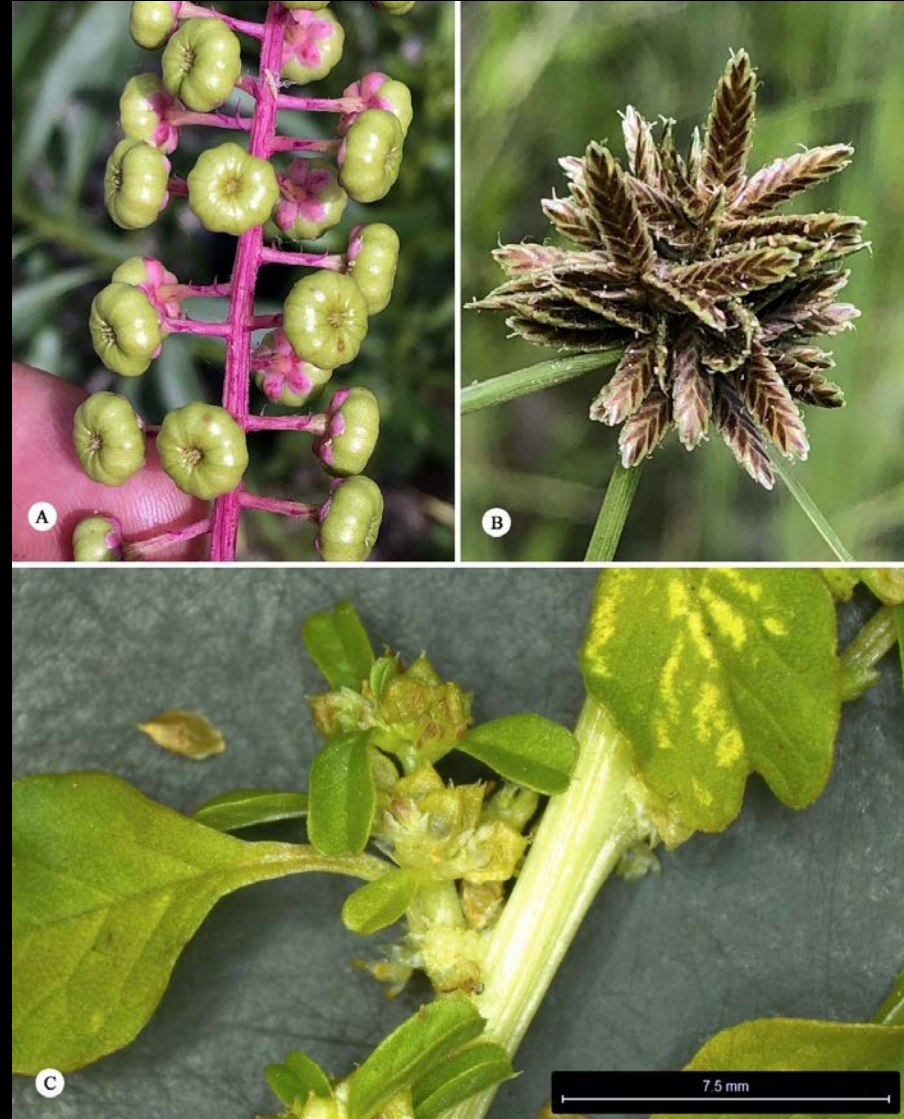
- **1133 different plant taxa (1075 species)**
- **131 plant families, 519 genera**
- **2007 INRMP 684 plants (272 not documented)**
- **82.8 % increase in known flora since 2007**
- **10,258 herbarium specimens in SD & 2,653 verified iNat obs.**
- **Pendleton contains 43.9% of San Diego County's total flora**

# Line Graph of New Plant Records on Base over Time

Plant Species Accumulation Curve on Base

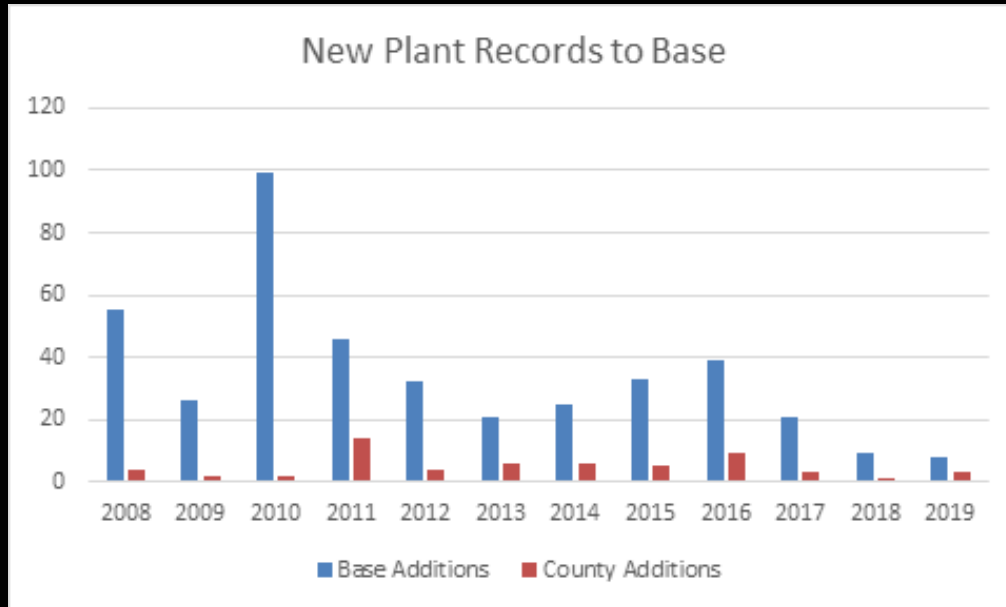


This line graph shows the accumulation of new Base Checklist records over time since the SDNHM Plant Atlas (Herbarium Documentation) project began on Camp Pendleton



- A. *Phytolacca americana* var. *americana* (Phytolaccaceae)
- B. *Cyperus niger* (Cyperaceae)
- C. *Amaranthus blitum* ssp. *emarginatus* (Amaranthaceae)

# Bar Graph of New Plant Records on Base over Time



This bar graph shows the number of new Base Checklist records and San Diego County records found on Base since the Plant Atlas (Herbarium Documentation) project began on Camp Pendleton.



- A. *Pedicularis densiflorus* (Orobanchaceae)
- B. *Sanicula tuberosa* (Apiaceae)
- C. *Astragalus gambelianus* (Fabaceae)

# New San Diego County Records



*Desmazeria rigida* (Poaceae)



*Abutilon grandifolium* (Malvaceae)



*Bothriochloa ischaemum*  
(Poaceae)



*Phacelia lyonii* (Hydrophyllaceae)



***Baccharis vanessae* (Asteraceae) Encinitas Baccharis**



**3 Federally Threatened Species**



***Navarretia fossalis* (Polemoniaceae)  
Spreading Navarretia**



***Brodiaea filifolia* (Themidaceae)  
Thread-Leaf Brodiaea**

**2**  
**Federally**  
**Endangered**  
**Species**



***Orcuttia californica* (Poaceae)**  
**California Orcutt's Grass**



***Eryngium aristulatum* var. *parishii* (Apiaceae)**  
**San Diego Button-Celery**





*Senecio aphanactis* (Asteraceae)



*Aldama purissima*  
(Asteraceae)

*Nolina cismontana* (Ruscaceae)



**74 CNPS Listed Plants (32 are 1B)**



*Rhinotropis cornuta* var. *fishiae* (Polygalaceae)



*Phacelia stellaris* (Hydrophyllaceae)

## 2 Endemic/Near-Endemic Species



*Eryngium pendletonense* (Apiaceae)  
Pendleton Button-Celery



*Ceanothus pendletonensis* (Rhamnaceae)  
Pendleton Lilac



# 383 Non-native, Naturalized Taxa (33.9 % of the total flora)



A



B



C



A



B



C



D

- A. *Cyperus flavescens* (Cyperaceae)
- B. *Araujia sericifera* (Apocynaceae)
- C. *Eleusine coracana* ssp. *africana* (Poaceae)

- A. *Helminthotheca echioides* (Asteraceae)
- B. *Carduus tenuiflorus* (Asteraceae)
- C. *Trifolium hirtum* (Fabaceae);
- D. *Rapistrum rugosum* (Brassicaceae)



**Restricted Weeds**

***Verbena litoralis* (Verbenaceae)  
Seashore Vervain**



***Pentameris airoides* subsp. *airoides* (Poaceae)  
False Hair Grass**

*Galinsoga parviflora* var. *parviflora* (Asteraceae)

Interesting  
Non-natives



*Gamochaeta stachydifolia*  
(Asteraceae); this rare,  
non-native was a new  
record for Base and for  
San Diego County



*Senecio angustifolius* (Asteraceae) [*S. quadridentatus* misapp.]

# Rediscoveries of Plants Previously Documented on Base before 1950

One of our goals was to rediscover plants that were previously documented on the Base before 1950, but not seen since. This goal was started in 2012 at that time, the following 29 plant taxa fit this criteria and we rediscovered 18 of these during our surveys

Apiaceae: *Hydrocotyle umbellata*\*

Asteraceae: *Artemisia tridentata* ssp. *tridentata*\*

Asteraceae: *Baccharis salicina*\*

Asteraceae: *Cirsium occidentale* var. *occidentale*\*

Asteraceae: *Ericameria brachylepis*\*

Asteraceae: *Pentachaeta aurea*\*

Asteraceae: *Symphotrichum subulatum* var. *parviflorum*\*

Asteraceae: *Xanthium spinosum*

Blechnaceae: *Woodwardia fimbriata*\*

Boraginaceae: *Plagiobothrys canescens*\*

Brassicaceae: *Cakile edentula* var. *edentula*

Brassicaceae: *Raphanus raphanistrum* f. *albus*

Brassicaceae: *Raphanus raphanistrum* f. *candidus*

Chenopodiaceae: *Atriplex pacifica*

Chenopodiaceae: *Atriplex serenana*

Chenopodiaceae: *Suaeda calceoliformis*\*

Fabaceae: *Trifolium wormskioldii*

Gentianaceae: *Eustoma exaltatum*\*

Juncaceae: *Juncus ambiguous*\*

Lamiaceae: *Scutellaria tuberosa*\*

Lamiaceae: *Trichostema lanceolatum*\*

Linaceae: *Hesperolinon micranthum*

Onagraceae: *Clarkia similis*\*

Orchidaceae: *Epipactis gigantea*

Phrymaceae: *Erythranthe floribunda*\*

Poaceae: *Chloris gayana*

Poaceae: *Koeleria macrantha*\*

Polemoniaceae: *Leptosiphon parviflorus*

Salicaceae: *Salix lasiandra* var. *lasiandra*\*

\* Detected during the fiscal year 2012 through 2019 surveys

*Eustoma exaltatum* subsp. *exaltatum*  
(Gentianaceae) Alkali Chalice



*Artemisia tridentata* subsp. *tridentata*  
(Asteraceae) Great Basin Sagebrush



## Plant Rediscoveries on Base



*Scutellaria tuberosa* (Lamiaceae)  
Danny's Skullcap



*Cirsium occidentale* var. *occidentale*  
(Asteraceae) Cobwebby Thistle



*Koeleria macrantha* (Poaceae)  
Junegrass

# Southernmost Distributions



*Calochortus catalinae* (Liliaceae)



*Salvia spathacea* (Lamiaceae)

Michael Charters



*Stephanomeria cichoriacea*  
(Asteraceae)



*Romneya coulteri* (Papaveraceae)



Photo by Jan Rebman

*Dudleya multicaulis* (Crassulaceae)



# Northernmost Distributions

*Aldama purissima* (Asteraceae)



*Baccharis vanessae* (Asteraceae)



SPNH Photo by Jon Reisman

*Pentagramma glanduloviscida* (Pteridaceae)

*Ferocactus viridescens* (Cactaceae)

# Interesting Botanical Discoveries

*Cirsium occidentale* var.  
*californicum*  
(Asteraceae)



*Cyperus esculentus* var. *macrostachyus* (Cyperaceae)



*Astragalus pomonensis* (Fabaceae)



*Brodiaea terrestris* ssp. *kernensis* (Themidaceae)



**Two different flower forms of *Castilleja densiflora* subsp. *gracilis*. More typical subsp. *gracilis* with enlarged floral pouches (right)**



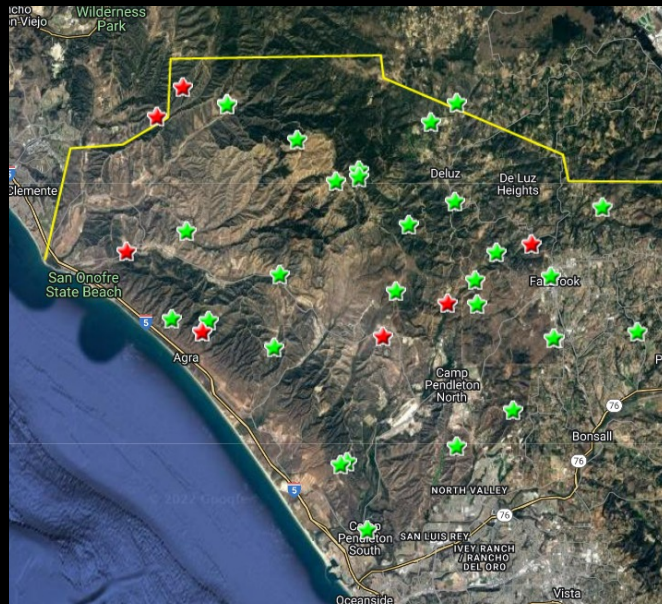
**Mutant individual of *Castilleja densiflora* subsp. *gracilis* lacking flowers; with only leaf-like bracts**



*Lathyrus vestitus*  
(Fabaceae)



var.  
*alefeldii*



var. *vestitus*



## Some Plant Discoveries in our Final Year



# Plant Discoveries in our Final Year



*Amaranthus blitum* ssp. *emarginatus*  
(Amaranthaceae)



*...ca americana*  
(Phytolaccaceae)



*Desmazeria rigida* (Poaceae)



*Githopsis diffusa* ssp. *filicaulis*  
(Campanulaceae)



*Eragrostis minor* (Poaceae)



*Piperia elongata* (Orchidaceae)

There is definitely More to Discover!!



**Thanks!**

**Marine Corps Base  
Camp Pendleton**

**Deborah Bieber  
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Jeannie Gregory  
Abigail Hanlen  
Ben Ladiere**

**Suzann Leininger  
Karen Mabb  
Patrick McConnell  
Jonathan Dunn  
Fred Sproul  
Carolyn Martus  
Amy Noddings  
Jim Asmus**



***Triodanis biflora*  
(Campanulaceae)**



- A. *Hoita macrostachya* (Fabaceae)**  
**B. *Ranunculus californicus* (Ranunculaceae)**  
**C. *Plantago erecta* (Plantaginaceae)**  
**D. *Penstemon heterophyllus* var. *australis* (Plantaginaceae)**

- A. & B. *Suaeda* aff. *esteroa* (Chenopodiaceae)**  
**C. & D. *Microseris douglasii* subsp. *platycarpa* (Asteraceae)**



# Thank You!!



A



B



A



B



C



D



C



D

- A. *Hoita macrostachya* (Fabaceae)
- B. *Ranunculus californicus* (Ranunculaceae)
- C. *Plantago erecta* (Plantaginaceae)
- D. *Penstemon heterophyllus* var. *australis* (Plantaginaceae)

- A. & B. *Suaeda* aff. *esteroa* (Chenopodiaceae)
- C. & D. *Microseris douglasii* subsp. *platycarpa* (Asteraceae)