Interactive Reporting Examples for NPS Terrestrial Vegetation Monitoring

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Contents

Background

Protocol Report

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science

Terrestrial Vegetation Monitoring Protocol for the Mediterranean Coast Network—Cabrillo National Monument, Channel Islands National Park, and Santa Monica Mountains National Recreation Area

Narrative, Version 1.0

Natural Resource Report NPS/MEDN/NRR—2016/1296

Table 15. Data and summary statistics for annual report

Timeframe	Format	Metric	Species aggregation	Site aggregation[1]	Descriptors
For current year only	Table	Species Richness (# species)	All species combined Growth form[2] Nativity Nativity × growth form	All sites Major veg. types[3]	Mean SD[4] Range
	Table	Absolute Cover (%)	All species combined, Growth form Nativity Growth form × nativity Soil surface features Each target species	All sites Major veg. types	Mean SD Range
	Table	Shrub & Tree Density (# / ha)	All species combined Life stage[5] Nativity Each target species	All sites Major veg. types	Mean SD Range
	Bar chart	Absolute Cover (%)	All species combined, Growth form Nativity Growth form × nativity	All sites Major veg. types	Mean SD
	Stacked bar chart	Relative Cover (%)	Growth form Nativity Growth form × nativity	All sites Major veg. types	Relative Cover of each group
For current year and previous 5 years	X-Y plot	Absolute Cover (%)	All species combined Growth form Nativity Growth form × nativity	All sites Major veg. types	Mean SD
	X-Y plot	Shrub & Tree Density (# / ha)	Growth form Nativity	All sites Major veg. types	Mean SD

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Appendix E: Template for Annual Terrestrial Vegetation Monitoring Report

Figures

- Figure E1. Map showing locations of sites monitored in 20XX at [PARK].
- Figure E2. Absolute foliar cover (%) of various plant groups observed during 20XX monitoring at [PARK].
- Figure E3. Relative plant cover by nativity in plant communities at [PARK] observed during 20XX monitoring.
- Figure E4. Relative plant cover by nativity and lifeform in plant communities at [PARK] observed during 20XX monitoring.
- Figure E5. Absolute foliar cover of all species and of all native species for each of the last 6 years of monitoring at [PARK].
- Figure E6. Density of native and non-native shrubs for each of the last 6 years of monitoring at [PARK].

Tables

- Table E1. Potential [PARK] monitoring sites that were visited and rejected in 20XX. Table E.2. [PARK] monitoring sites installed in 20XX.
- Table E3. [PARK] sites monitored in 20XX.
- Table E4. [PARK] sites scheduled for monitoring, but not monitored in 20XX. Table E.5. Burned sites monitored at [PARK] in 20XX.
- Table E6. Species richness (per transect) observed during 20XX monitoring of [PARK] vegetation.
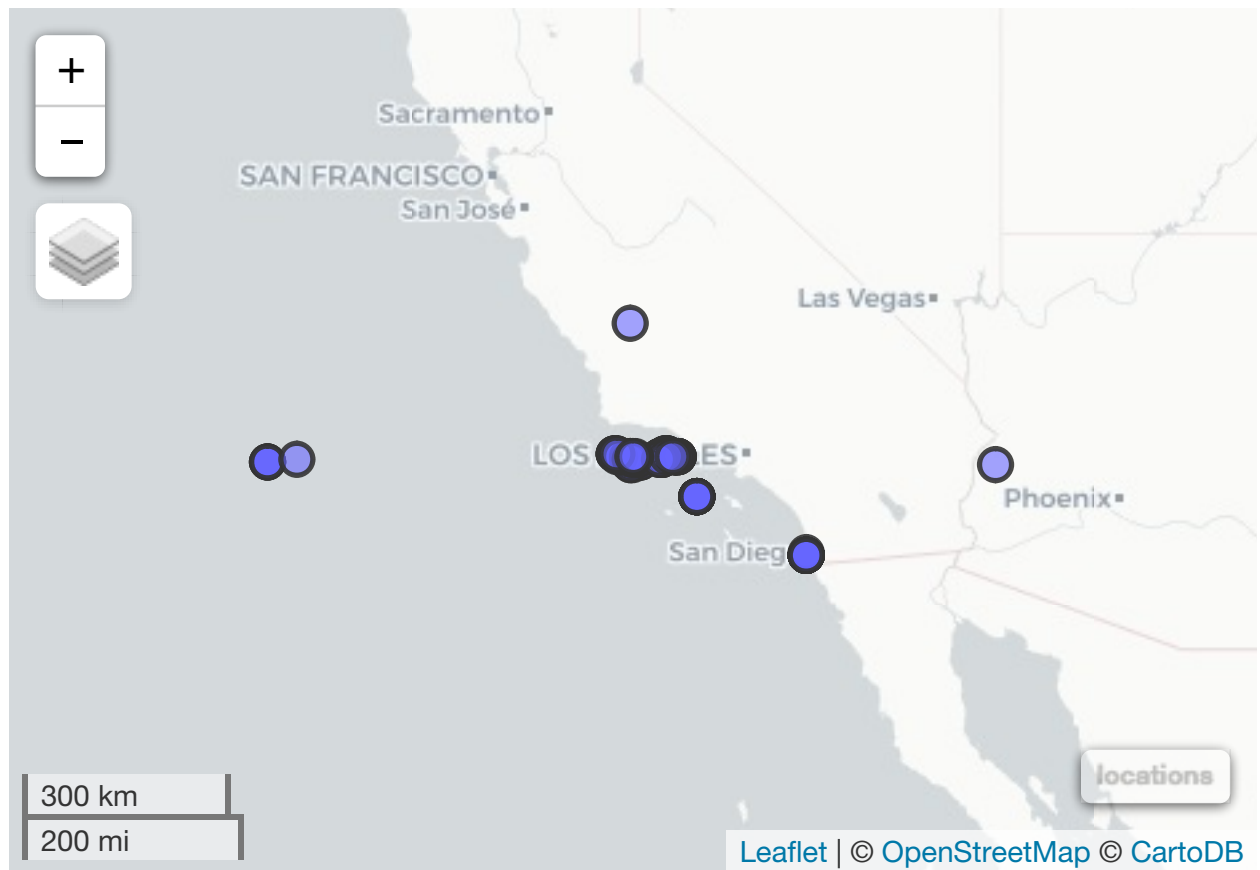
Examples

Figure E1. Map of locations
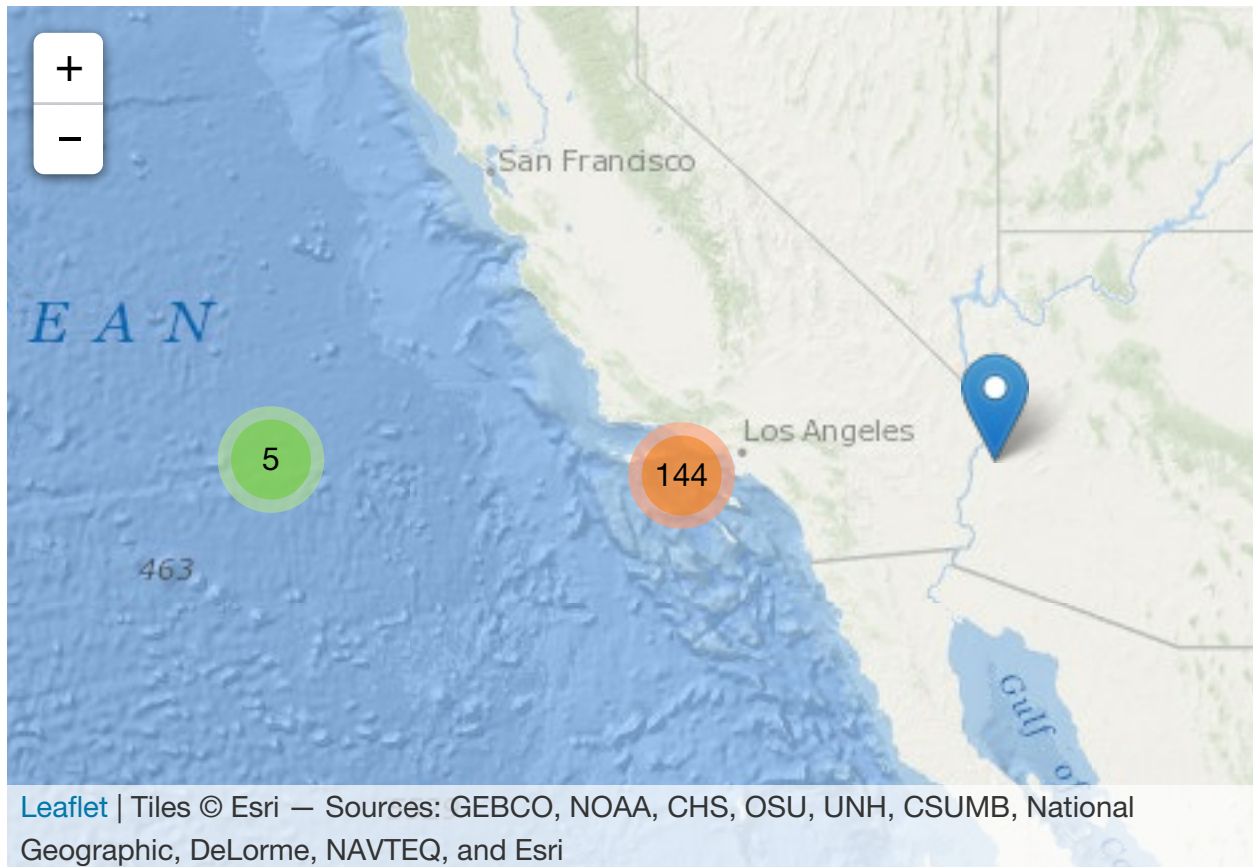
Figure E1. Map of locations - clustered

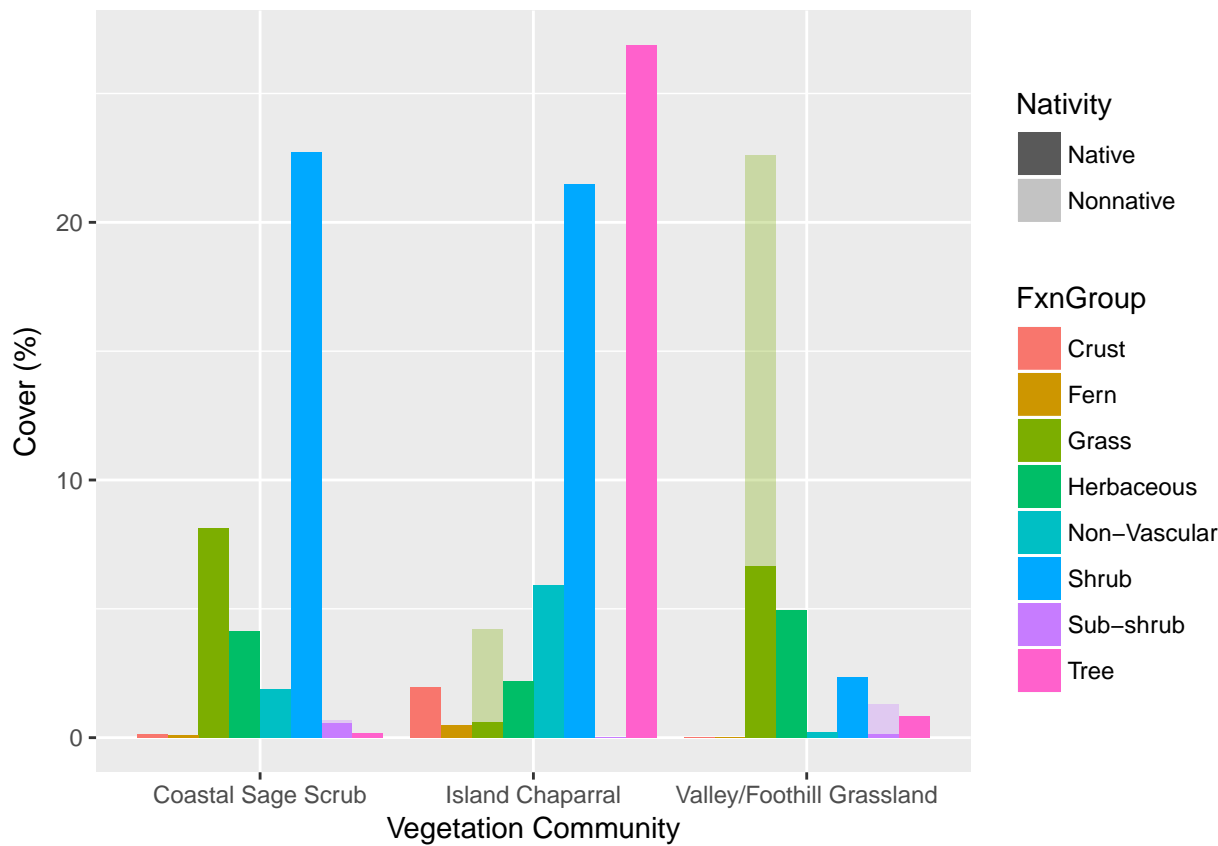**Figure E2. Absolute foliar cover (%) - Static**
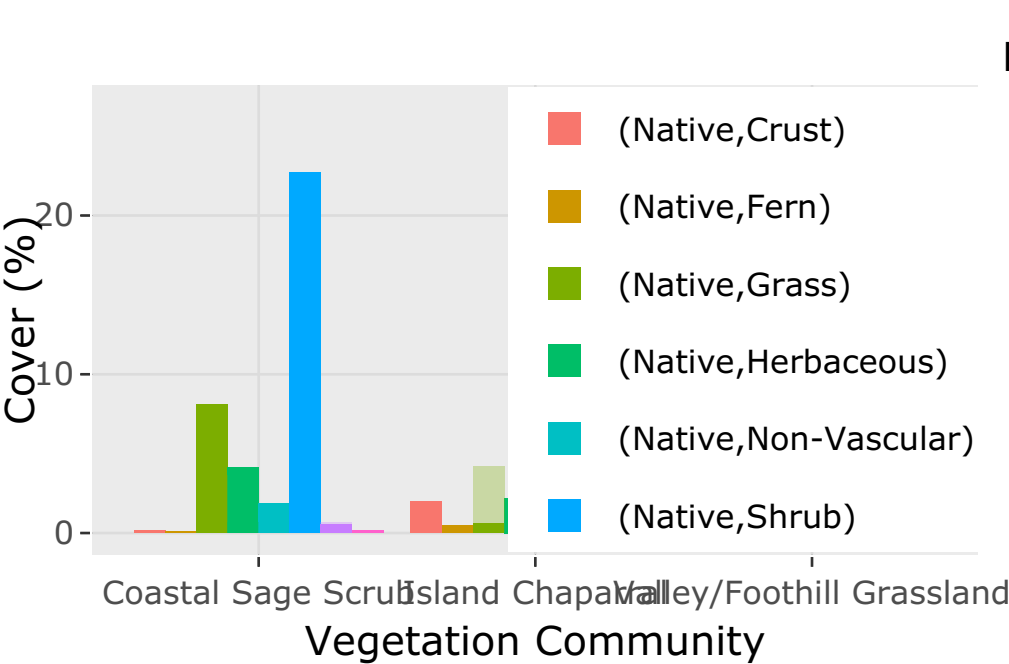

Figure E2. Absolute foliar cover (%) - Dynamic

Table E6. Species by site

Show 10 ▾ entries   Search: [   ]

	Site_Desc	Species_Code	n
1	Anacapa Island	ARCA	39
2	Anacapa Island	ATSE	4
3	Anacapa Island	AVBF	4
4	Anacapa Island	BRDI	11
5	Anacapa Island	BRMD	3
6	Anacapa Island	CACI	1
7	Anacapa Island	CHMU	1
8	Anacapa Island	COGI	10
9	Anacapa Island	CRLI	1
10	Anacapa Island	DICA	4

Showing 1 to 10 of 343 entries   Previous 1 2 3 4 5 … 35 Next

Table E6. Species richness by site - static

Site_Desc	n_species
Anacapa Island	28
San Miguel Island	42
Santa Barbara Island	30
Santa Cruz Island	77
Santa Rosa Island	166

Database & Apps

MS Access DB on Windows

- Fixed VBA errors with 32-bit `Declare Function` to 64-bit `Private Declare PtrSafe Function` using MS Access 2013

Windows only connection option:

```
library(RODBC)

accdb <- "Z:/bbest On My Mac/Google Drive/projects/nps-ecoquants/data/CHISLandVegetationMonitoringDataba

odbcDataSources()
db <- odbcConnectAccess2007(accdb)

sqlTables(db)
sqlQuery("SELECT * FROM tbl_Locations")
```

MS Access DB & Postgres

Connect Access Front-End to Postgres Backend:

- Connect Microsoft Access to PostgreSQL - iShare Help - Confluence
- Using MS Access with PostgreSQL - Postgres OnLine Journal

Assistant applications to handle conversion / synchronization:

- Access To PostgreSQL $49
- Access To PostgreSQL: DBConvert $149, DBSync $149

Create New Front-End App

For example, with Shiny:

- Creating Interactive Web Applications with R & Shiny

Working with databases & Shiny:

- Databases using R
- Shiny - Database basics - dplyr and DBI
- Shiny - Persistent data storage in Shiny apps
- Enterprise-ready dashboards with Shiny and databases · R Views
- Create an R Shiny Database CRUD app

Rmarkdown

Rmarkdown formats

From the same Rmarkdown document:

- index.Rmd

You can generate these (and more):

- ioslides_presentation
- html_document
- pdf_document
- word_document