

IDENTIFYING PROBLEMS AND SOLUTIONS: THE WORK OF THE ONE TAM PARTNERSHIP

MARIN COUNTYWIDE FINE SCALE VEGETATION MAP AND LANDSCAPE DATABASE PROJECT

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Project Manager
Golden Gate National Parks Conservancy
October 8th, 2020



ONE TAM

“perhaps the highest priority need for assessing condition and trend of key vegetation community and rare plant indicators is having accurate and consistent mountain-wide spatial vegetation data.”

MEASURING THE HEALTH OF A MOUNTAIN:

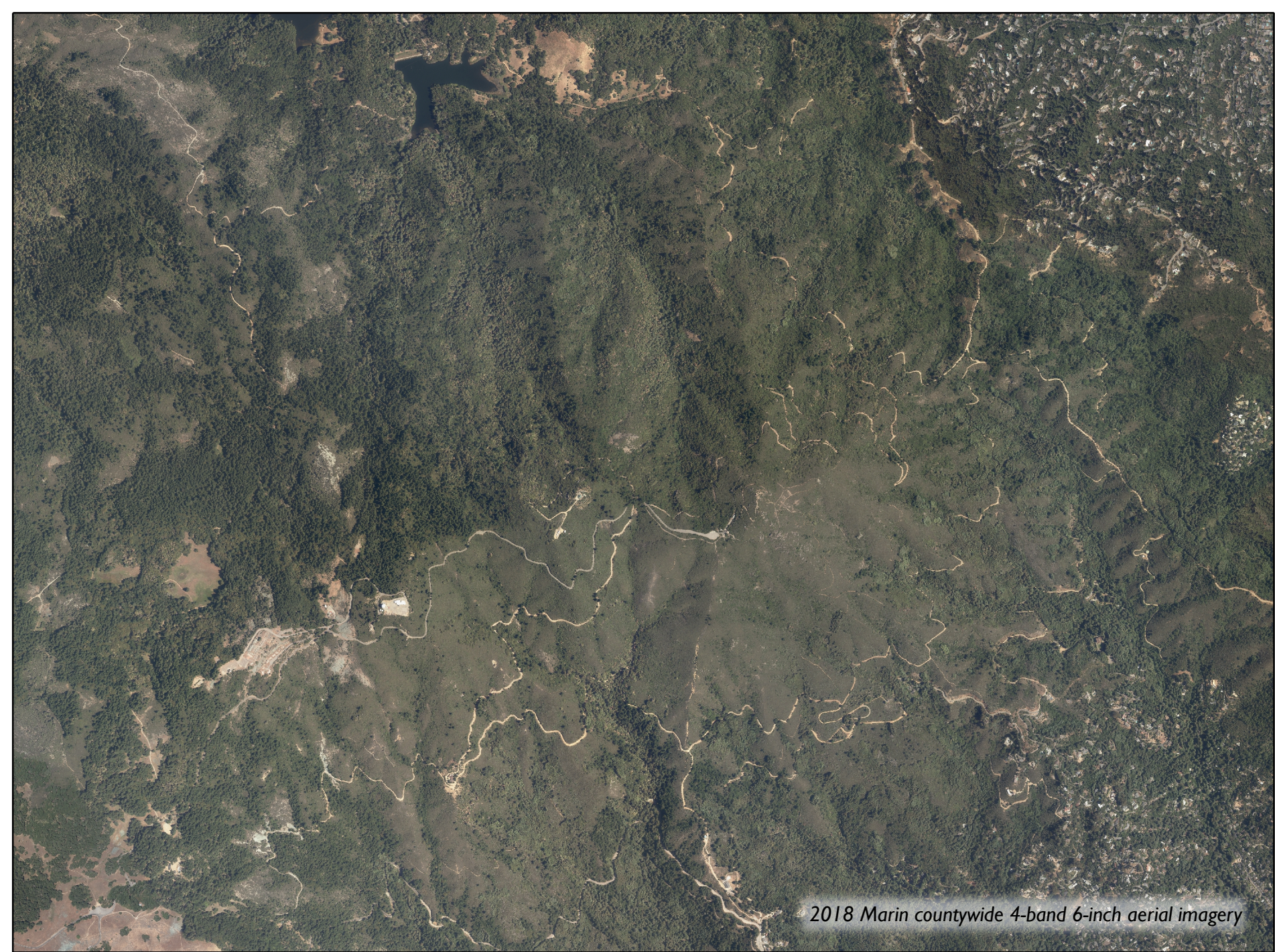
A Report on Mount Tamalpais
Natural Resources

2016

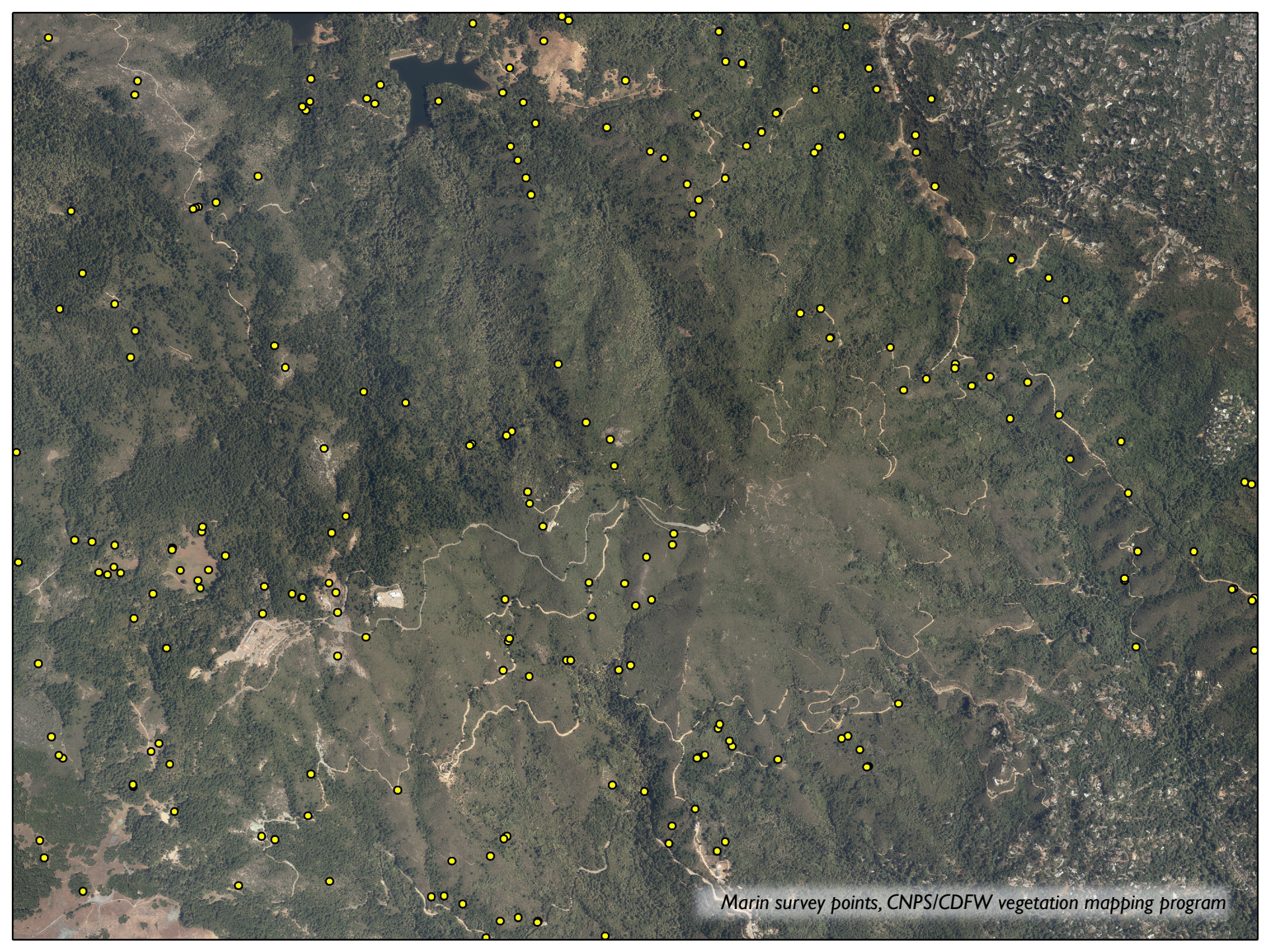
PRODUCTS AND SCHEDULE

Milestone	Status
6-inch, 4-band ortho imagery acquisition and post processing	Completed June 2018
Vegetation Field Sampling for floristic classification	Completed July 2019
QLI Lidar Acquisition	Completed Winter 2019
1-foot countywide lidar derived contours	Completed December 2019
Additional lidar derived products (DEM, DSM, hillshade, raw ladder fuels raster, canopy height model, canopy closure model, etc.)	Completed January 2020
Draft Vegetation Lifeform Map	Completed March 2020
Lidar derived hydrological system mapping (NHD update)	In process
Marin countywide vegetation classification analysis, descriptions and key	In process
Countywide lidar derived impervious surfaces layer upgrade	In process
Draft Fine Vegetation Scale Map to local expert review	February 2021
Complete Fine Scale Vegetation Map	May 2021
Accuracy Assessment and Final Report	June/July 2021

“To effectively care for ecosystems and infrastructure, citizens, landowners, politicians, scientists, stewards and agencies must know the location and distribution of resources across the landscape.”



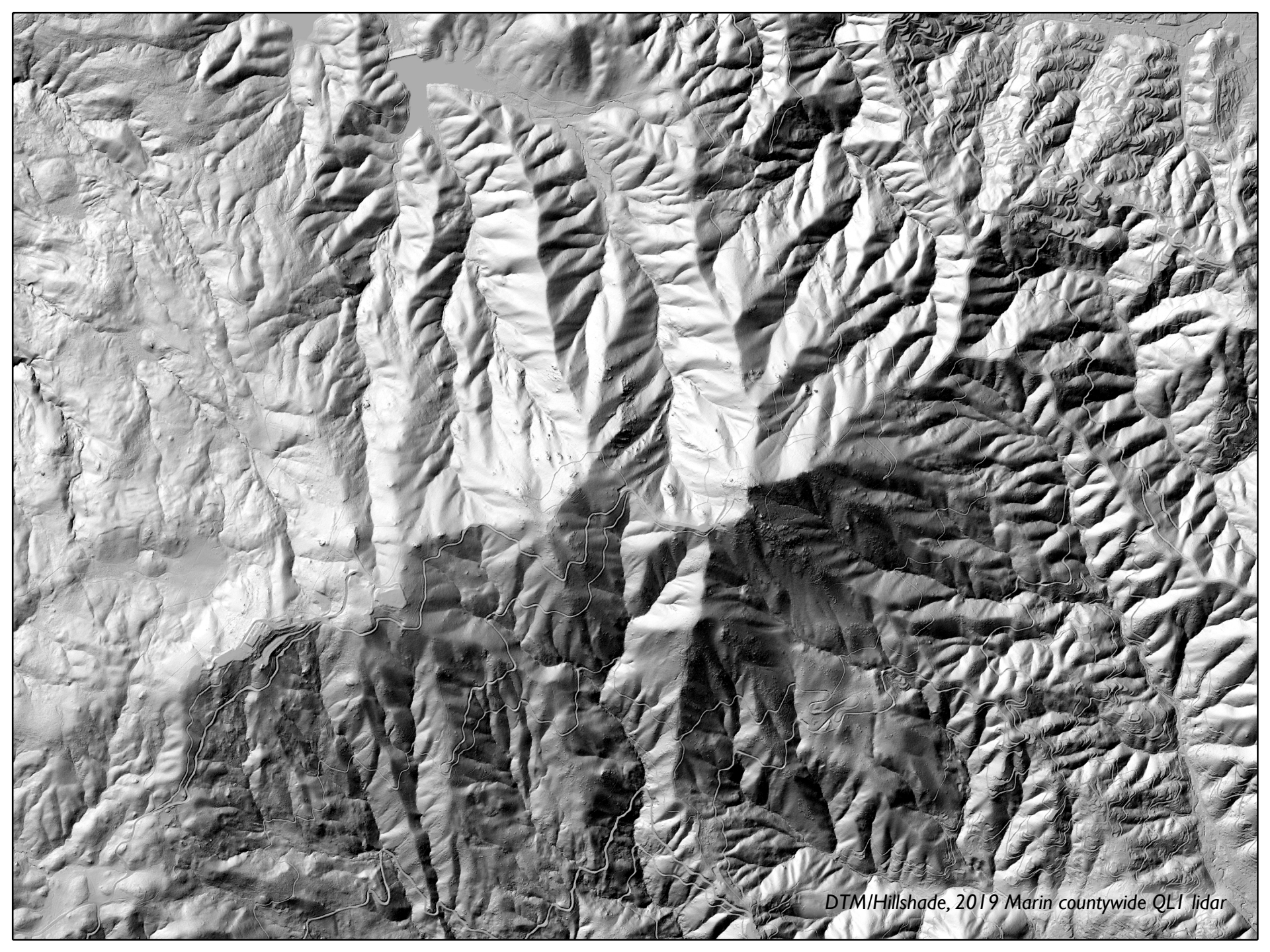
2018 Marin countywide 4-band 6-inch aerial imagery



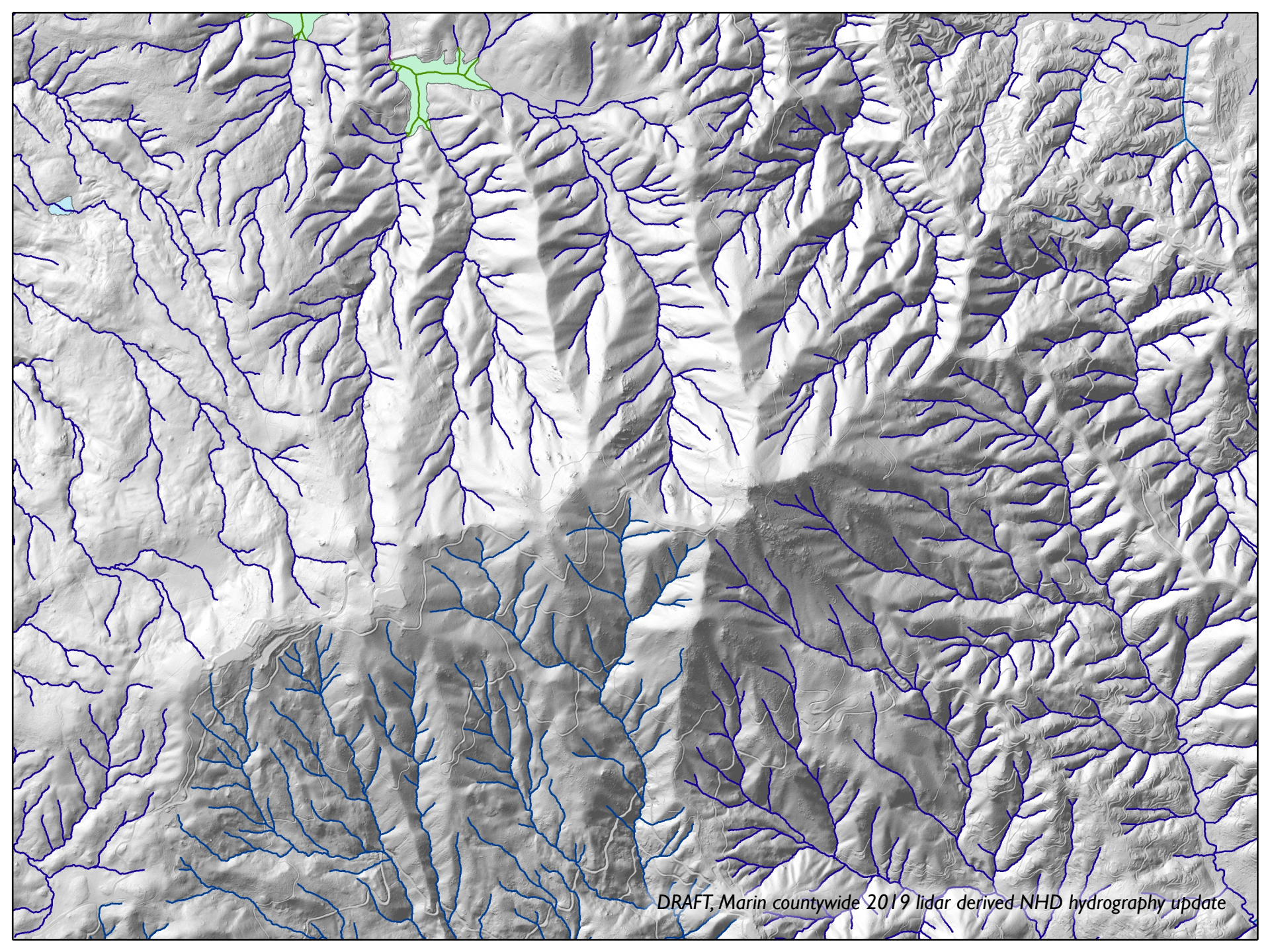
Marin survey points, CNPS/CDFW vegetation mapping program



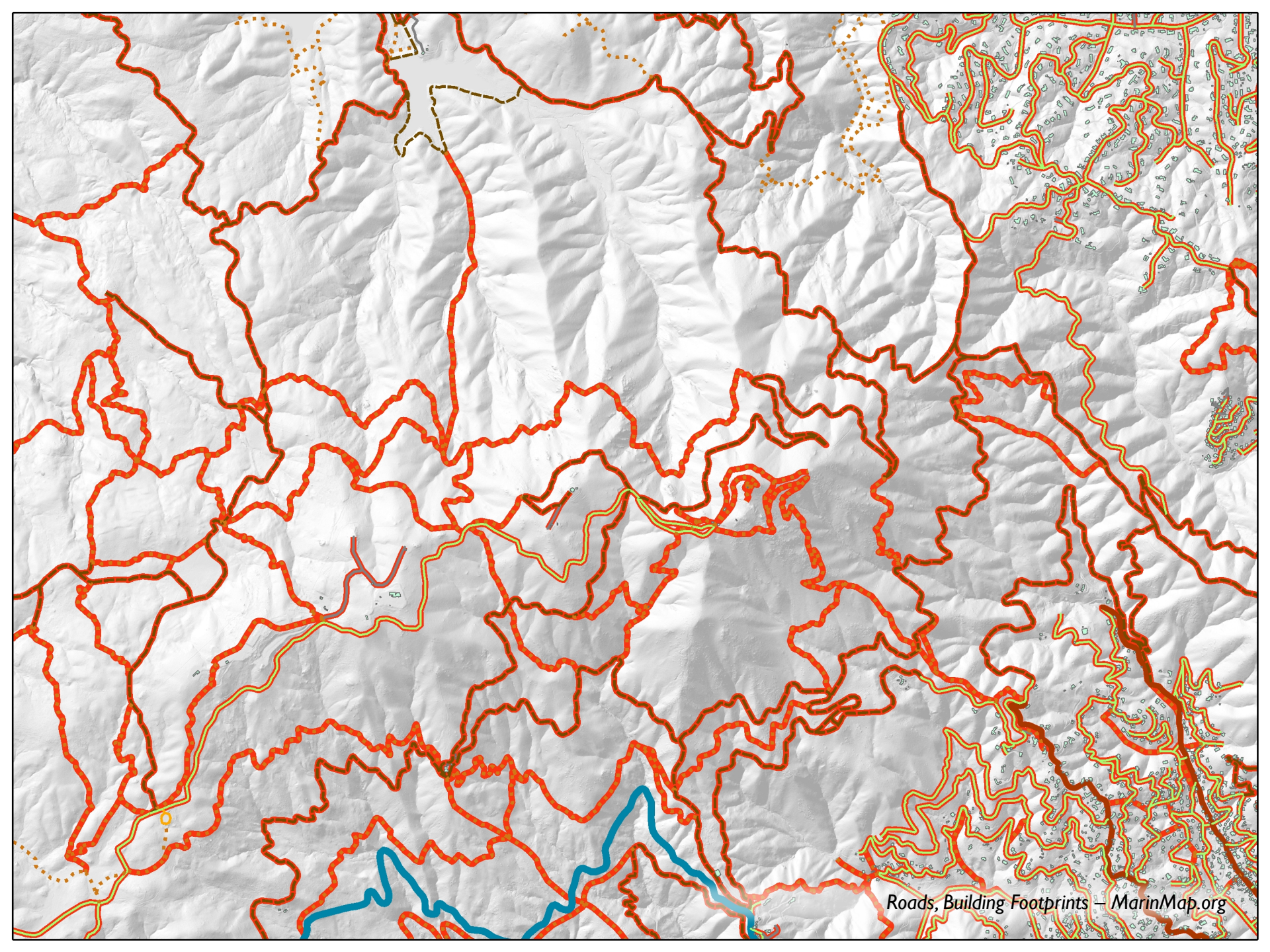
Marin survey points, CNPS/CDFW vegetation mapping program

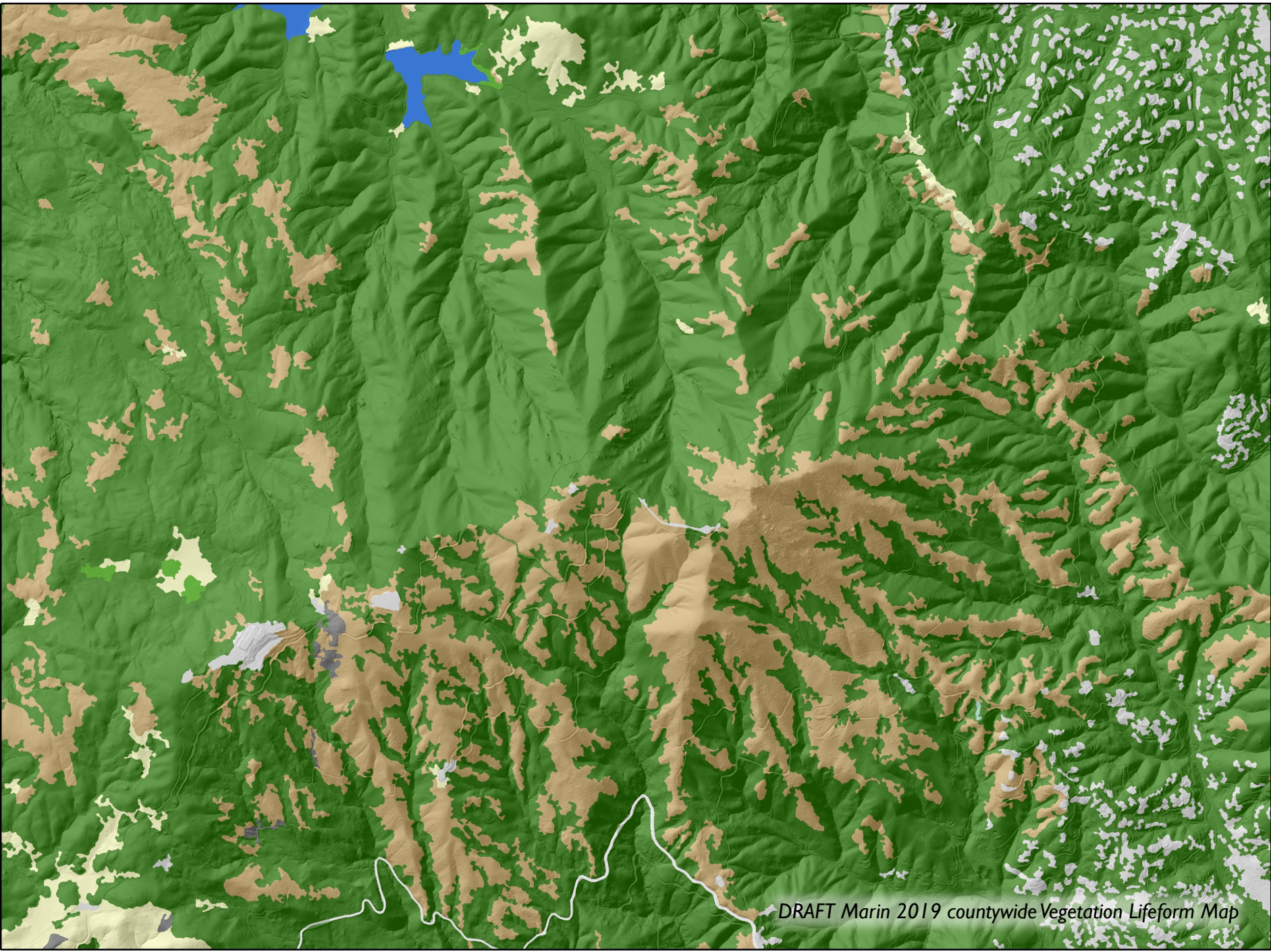


DTM/Hillshade, 2019 Marin countywide QLI lidar



DRAFT, Marin countywide 2019 lidar derived NHD hydrography update

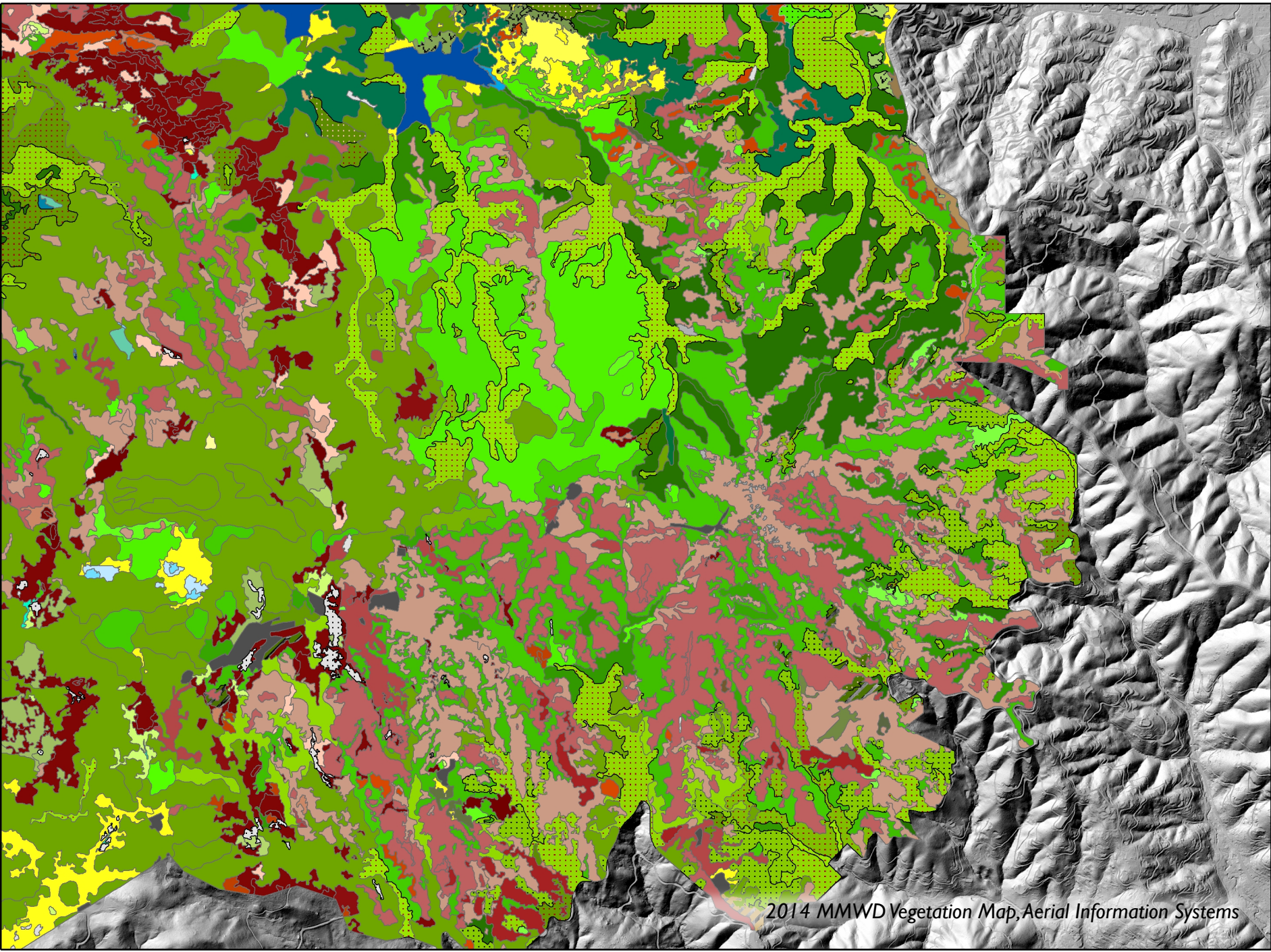




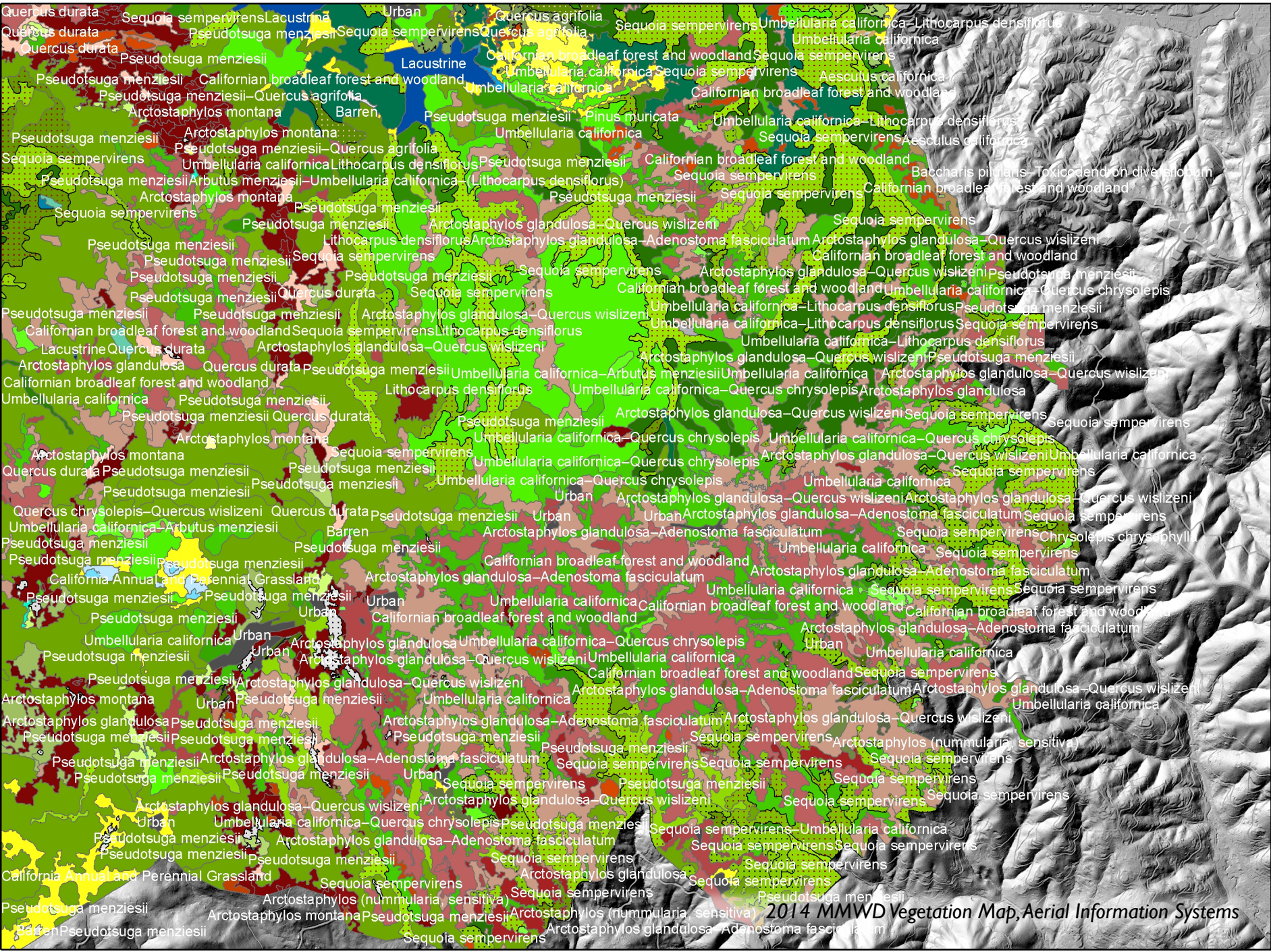
DRAFT Marin 2019 countywide Vegetation Lifeform Map



DRAFT Marin 2019 countywide Vegetation Lifeform Map



2014 MMWD Vegetation Map, Aerial Information Systems



2014 MMWD Vegetation Map, Aerial Information Systems

How does the fine scale vegetation map and landscape data help us adapt to and mitigate impacts from climate change?



Stormwater & Flood Management



Wildlife Habitat Monitoring & Connectivity



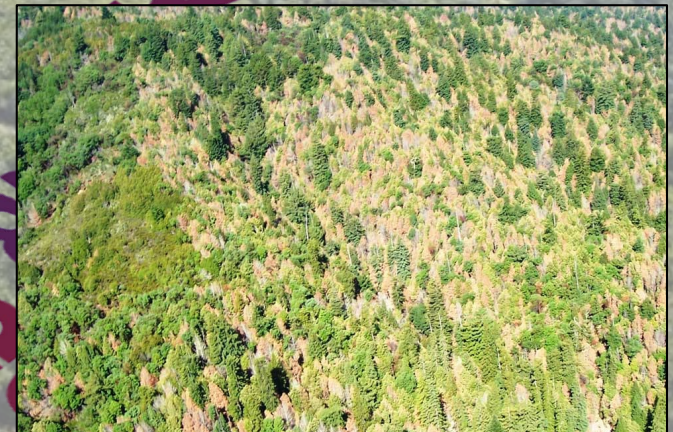
Wildfire Planning, Response & Recovery



Restoration Planning & Prioritization



Monitoring Sea Level Rise & Adaptation Planning



Monitoring Disease and Assessing Forest Health

Health assessment
for five key forest
types – Doug Fir,
Bishop Pine, Oak
Woodlands, Coast
Redwood

Community
engagement,
outreach and
collaboration

**MARIN
REGIONAL
FOREST
HEALTH
STRATEGY**

Identify priority
treatment and
protection areas

Compliance and
implementation
pathways for
priority projects;
monitoring

Define treatment
approaches and
associated BMP's
for desired multi-
benefit outcomes

INTERACTIONS BETWEEN CLIMATE CHANGE AND POTENTIAL THREATS TO ECOSYSTEM HEALTH

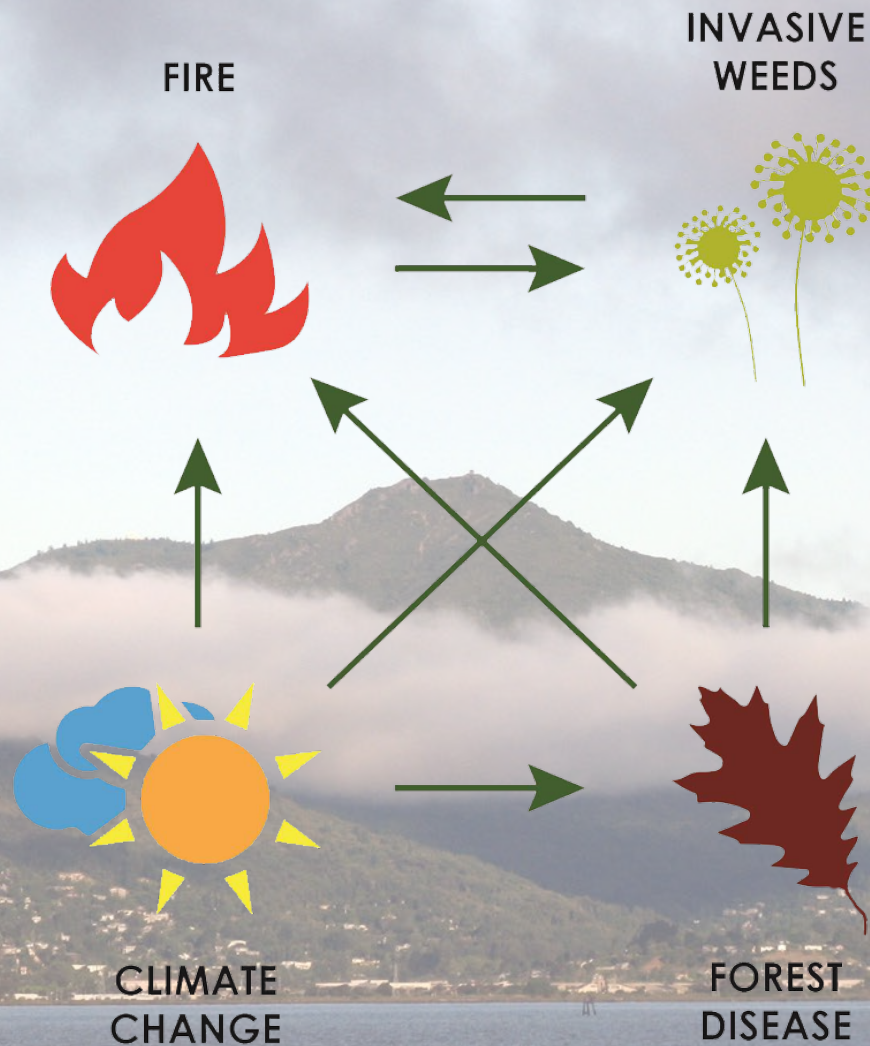
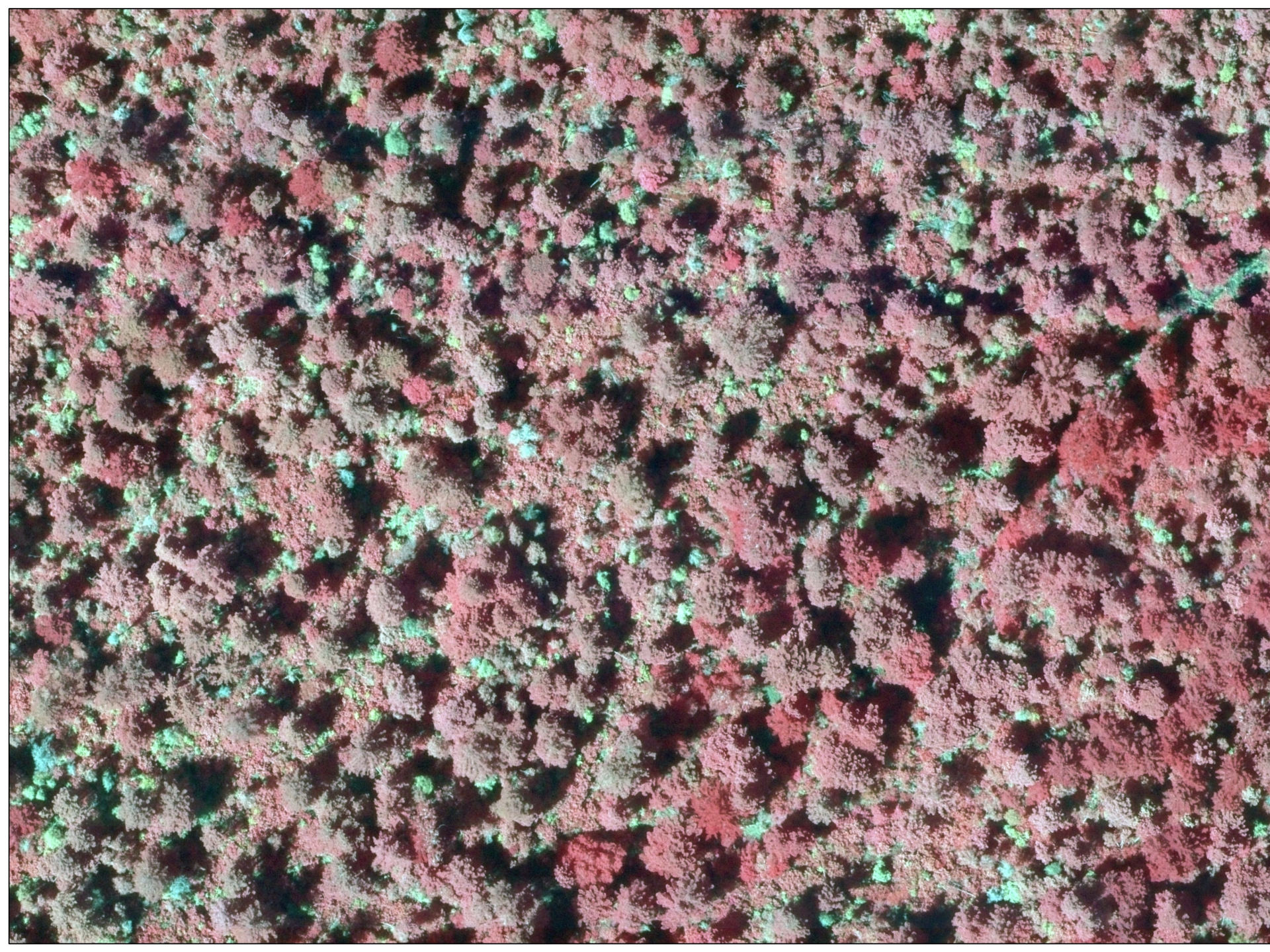
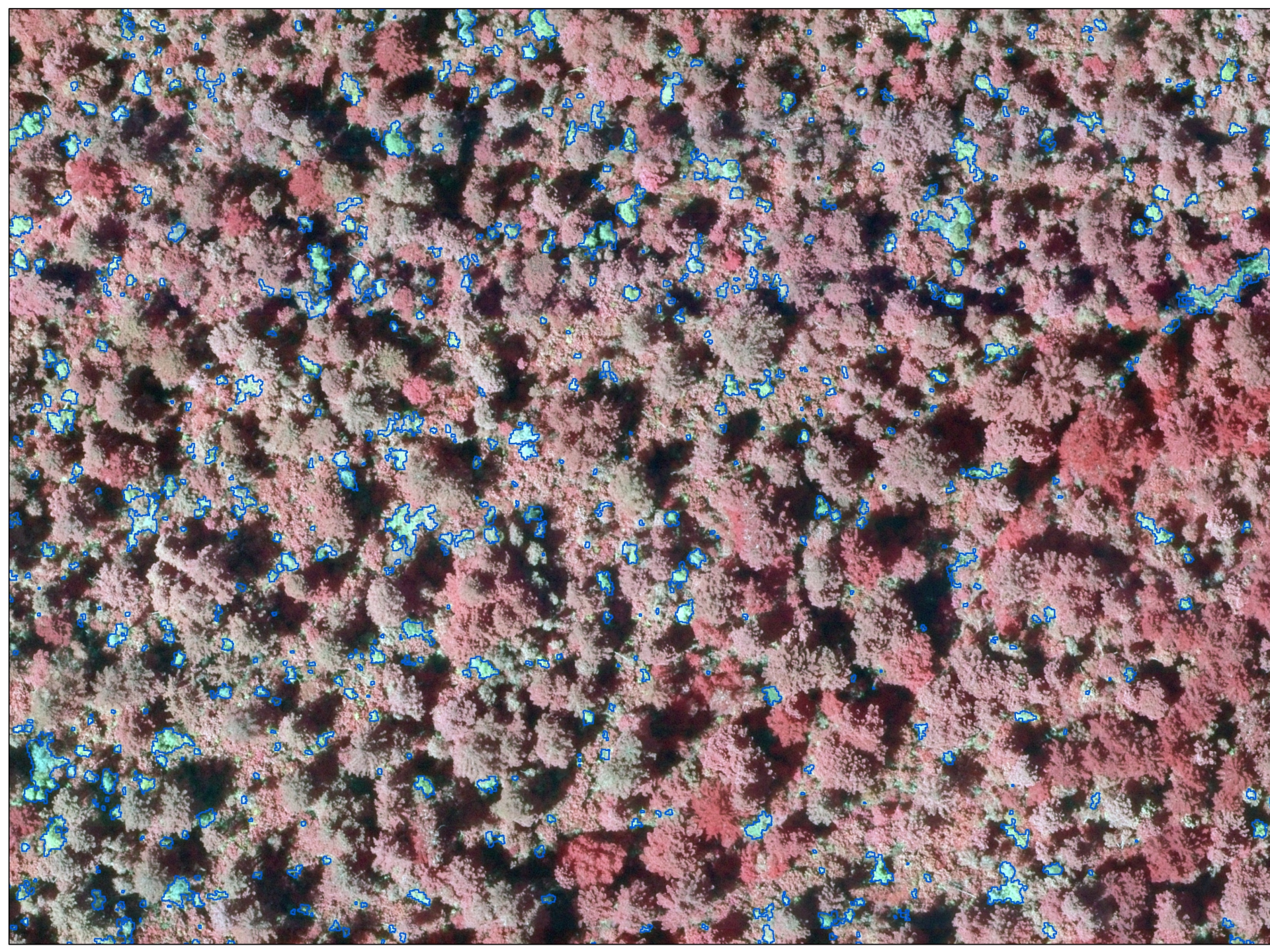


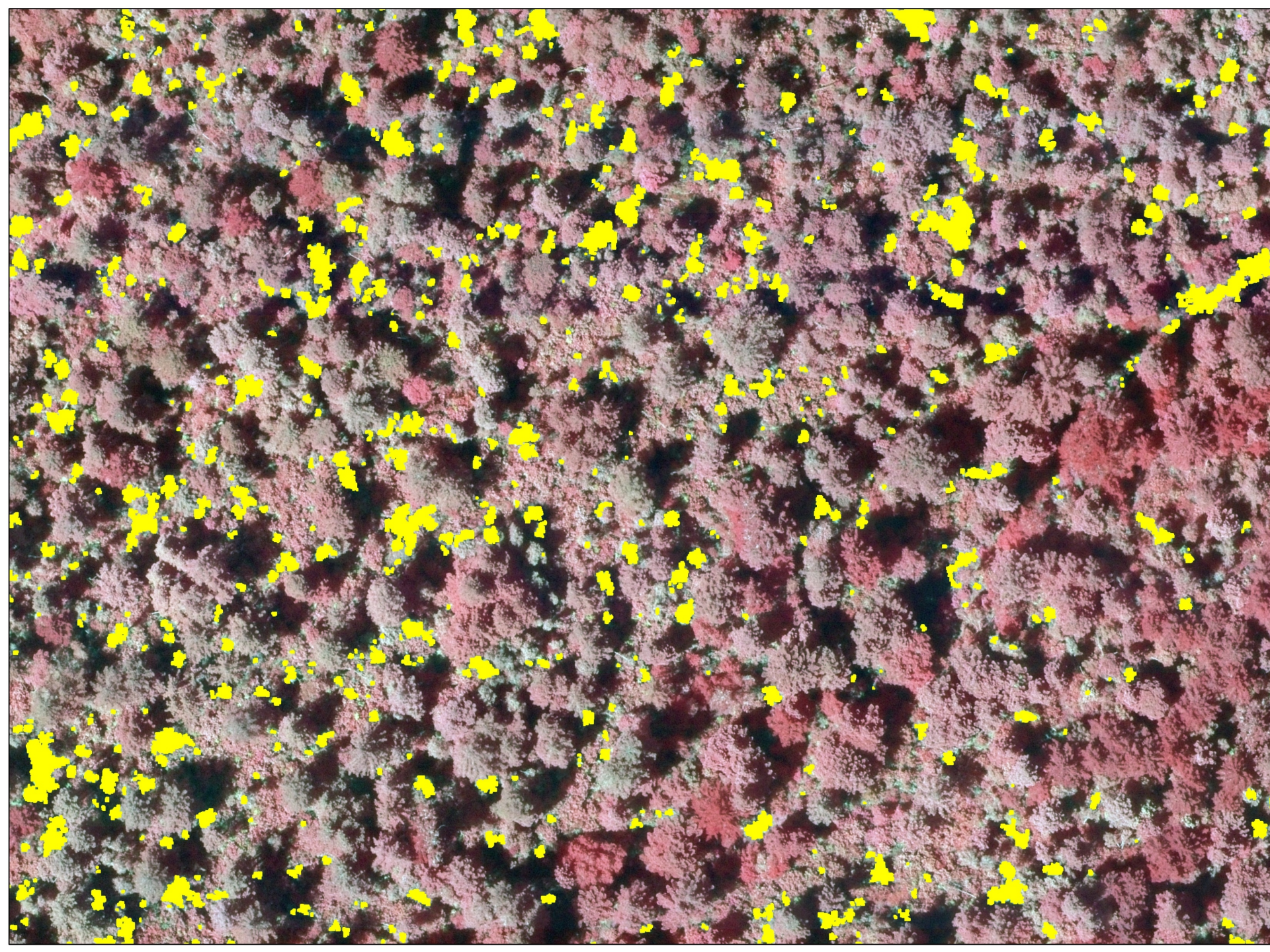


Photo Credits: Before NPS After NPS

Source: PORE NPS, Bishop Pine on the ridge between the Coast Trail and Limantour Road, 2010 vs. 2018

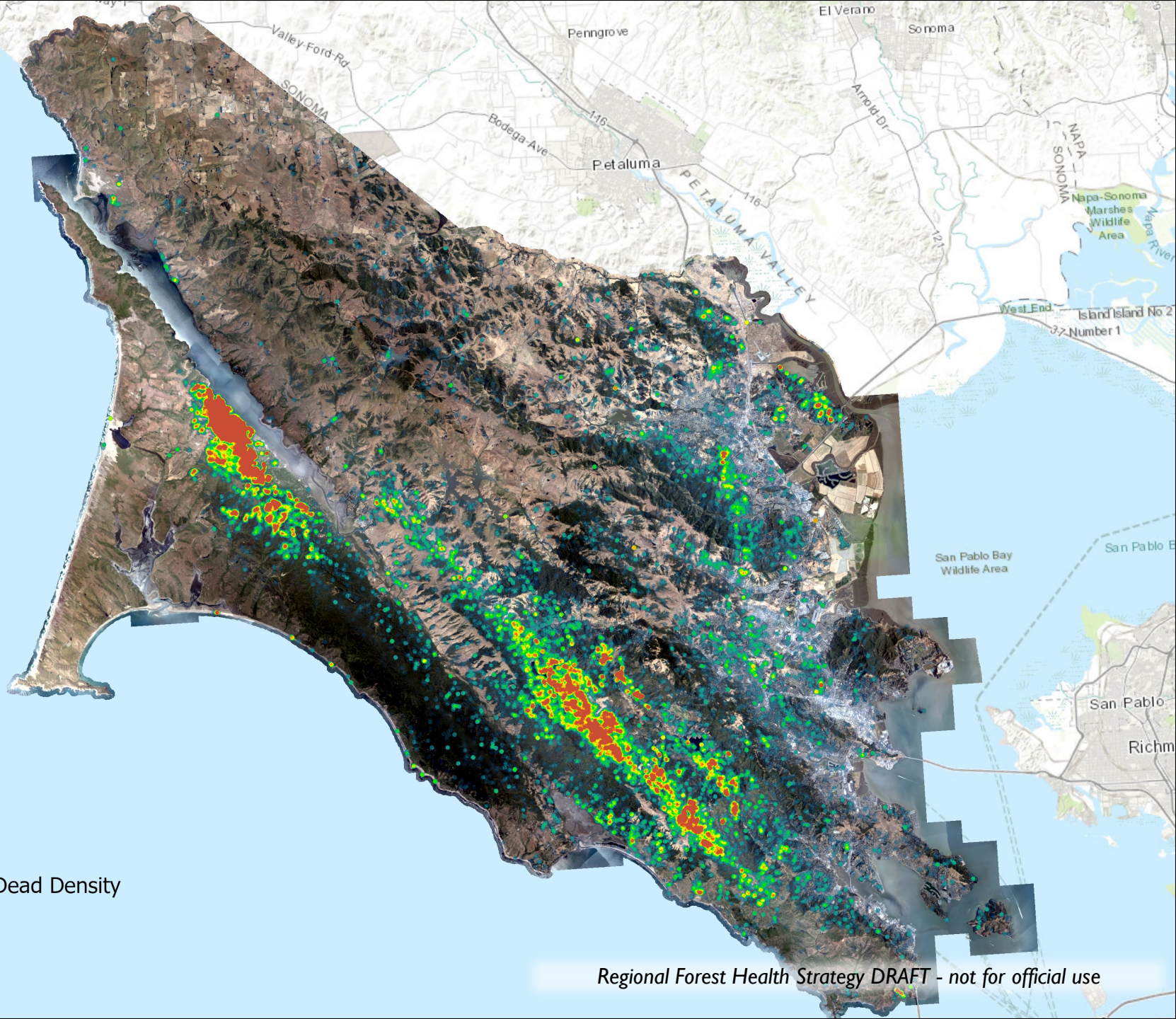






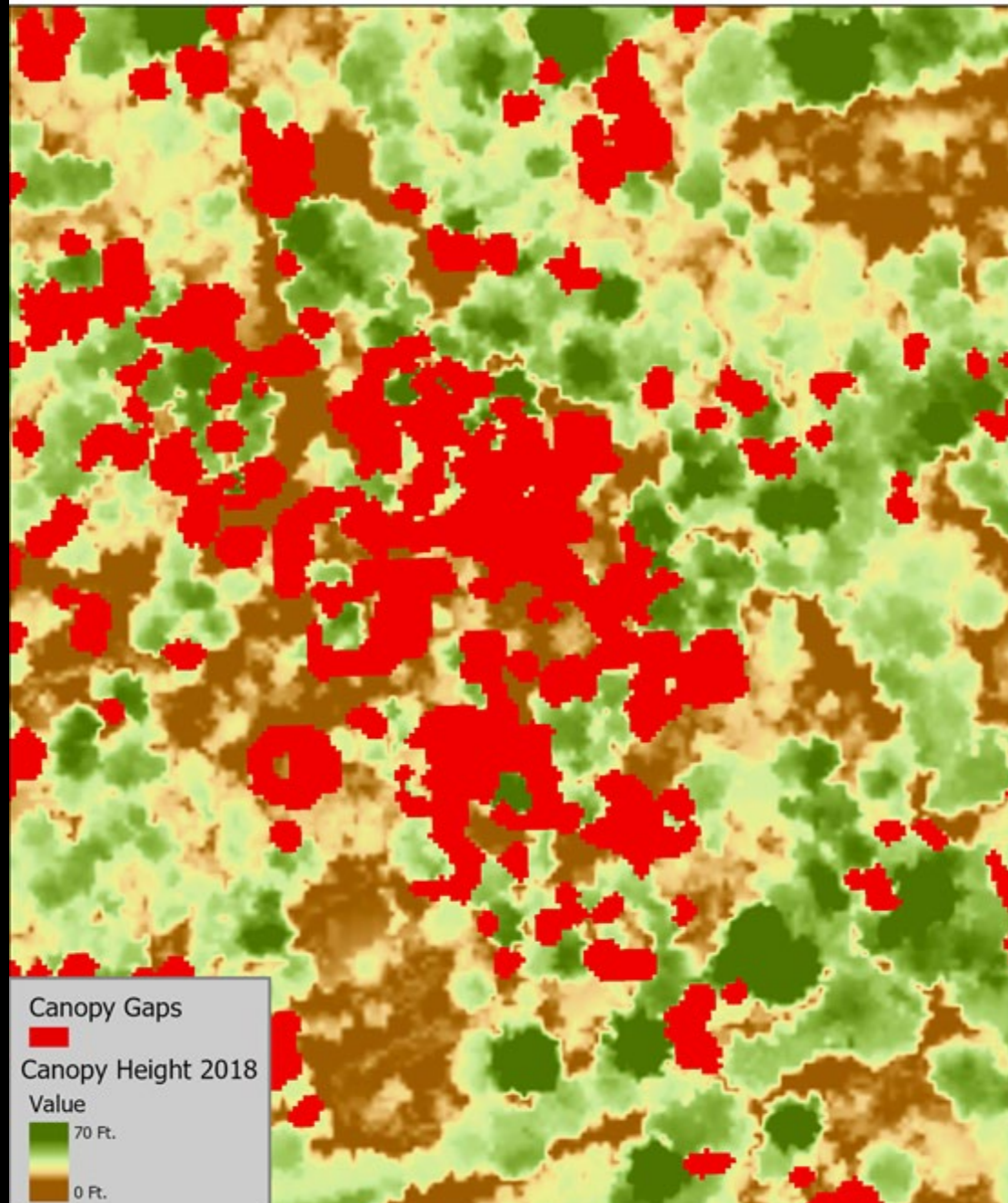
Standing Dead Density

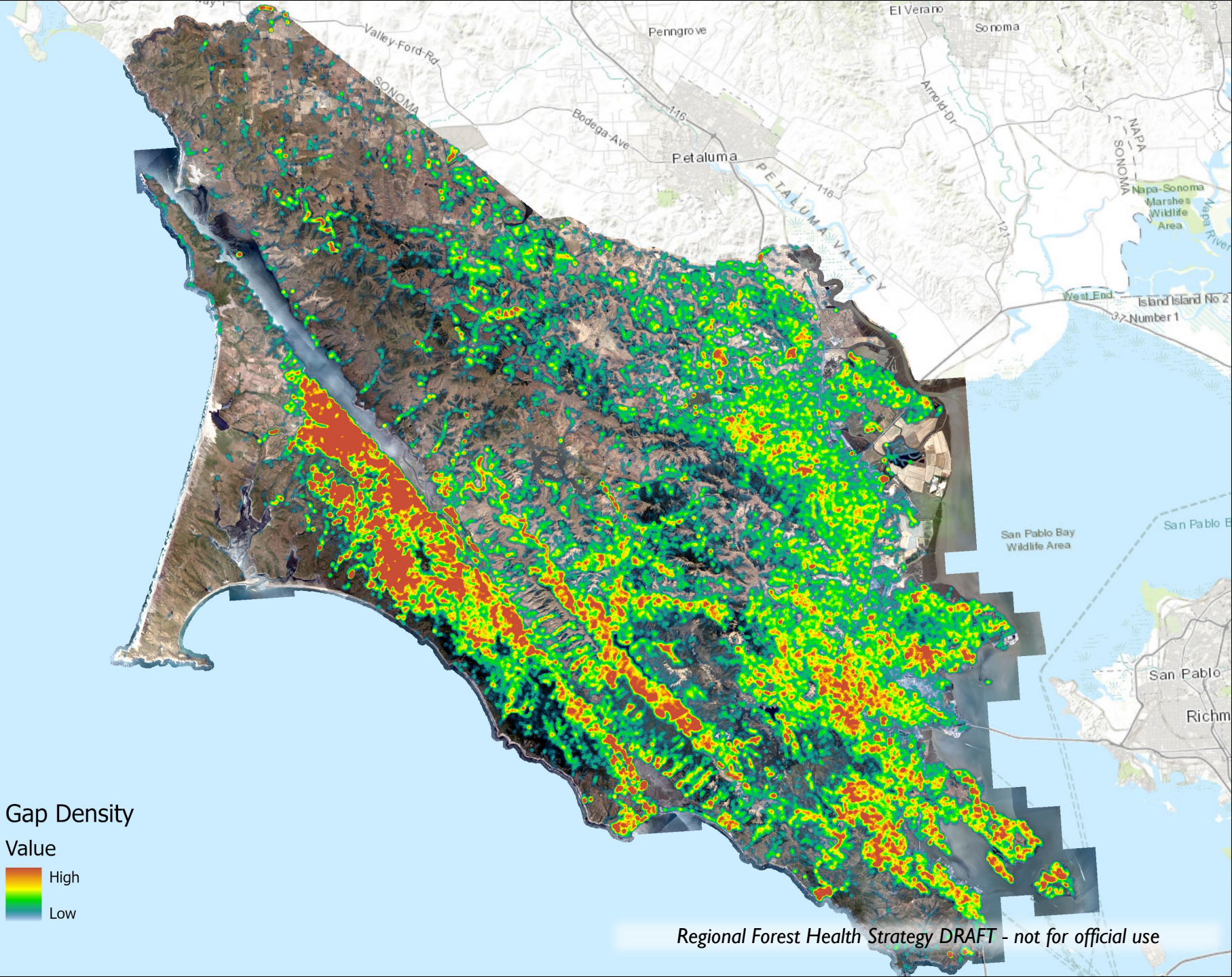
Value

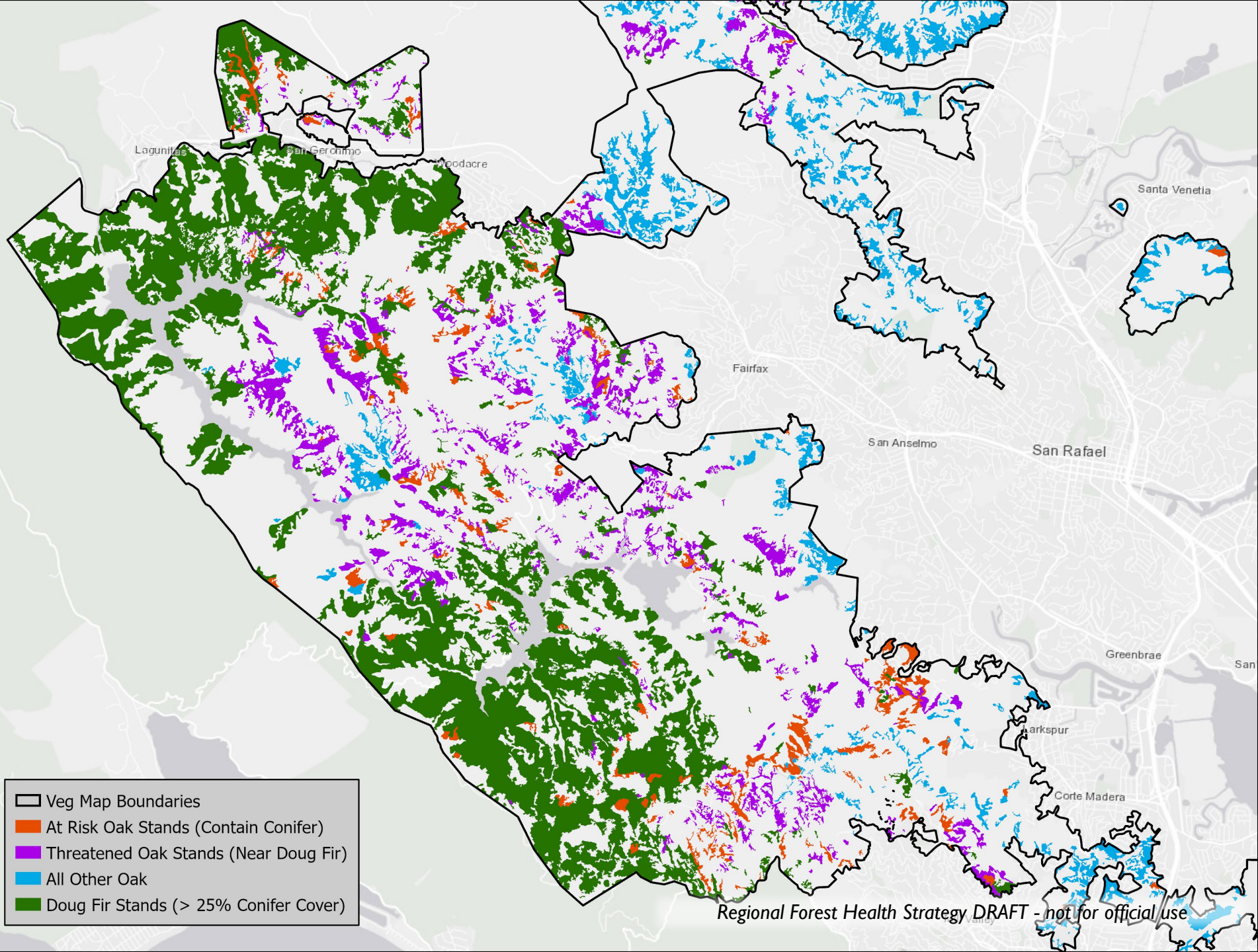




Canopy Gaps 2010-2018







Lagunitas San Geronimo Modocre

Fairfax

San Anselmo

San Rafael

Greenbrae

Markspur

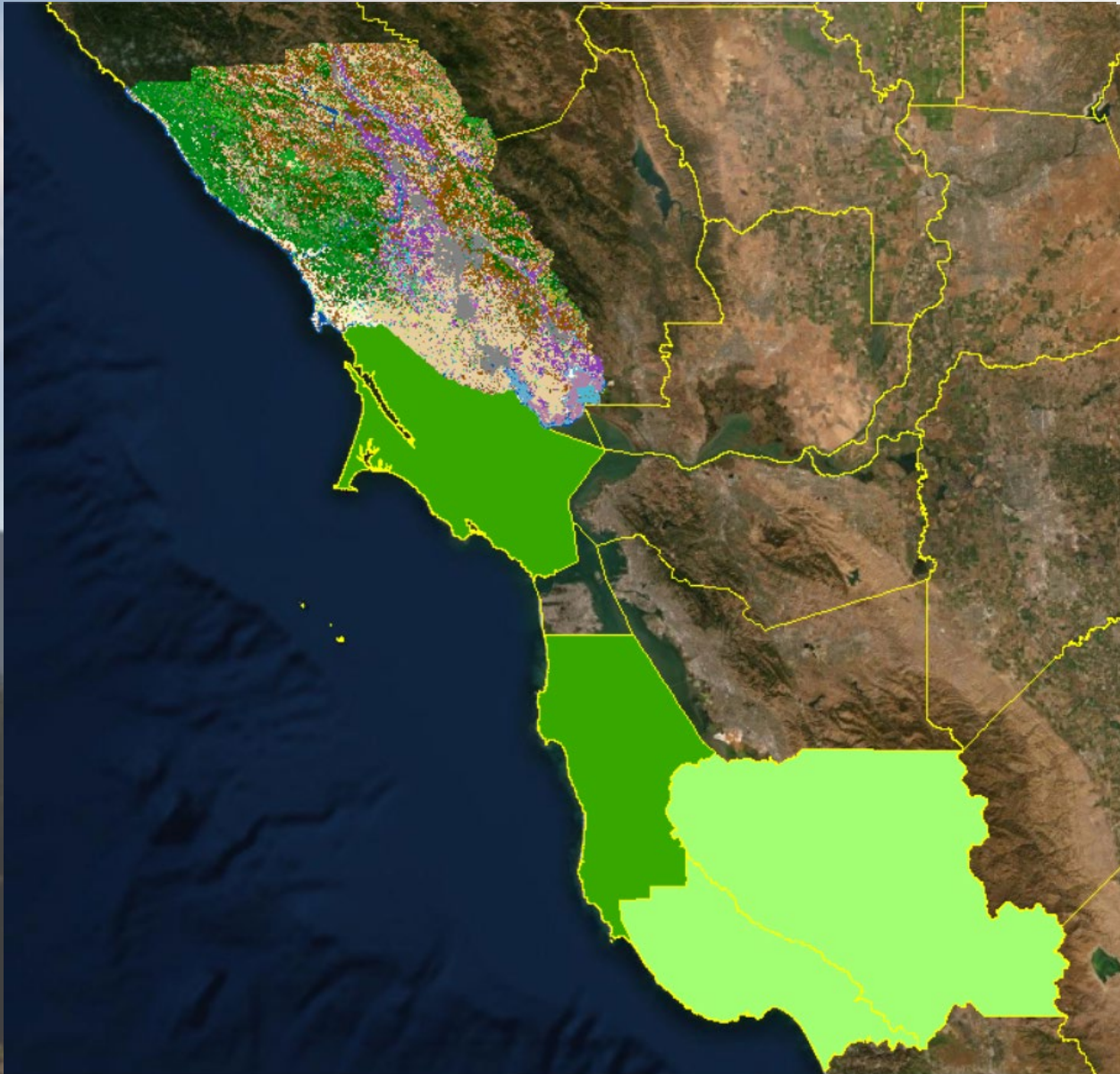
Corte Madera

Santa Venetia

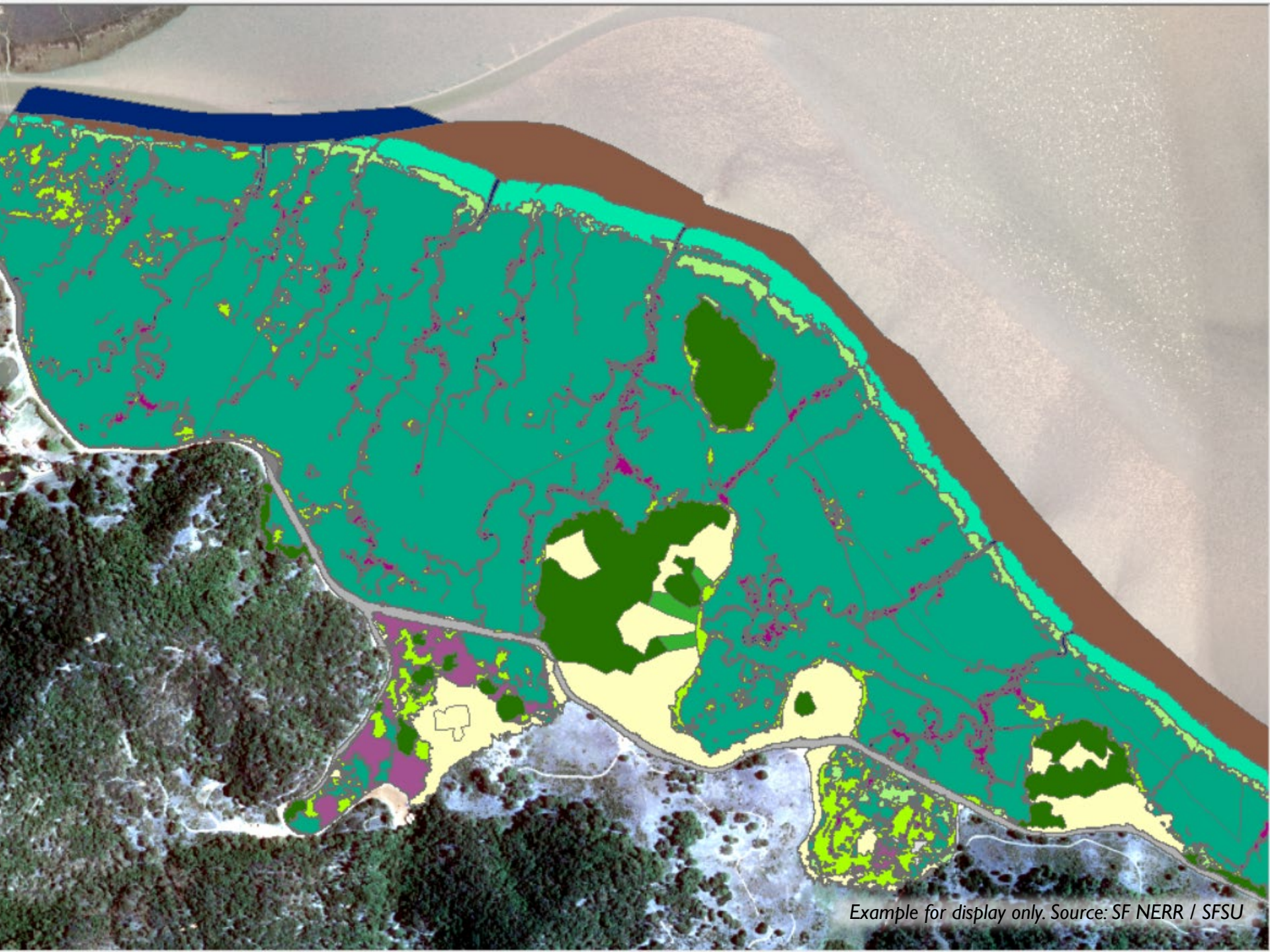
- Veg Map Boundaries
- At Risk Oak Stands (Contain Conifer)
- Threatened Oak Stands (Near Doug Fir)
- All Other Oak
- Doug Fir Stands (> 25% Conifer Cover)

Regional Forest Health Strategy DRAFT - not for official use

CASCADING IMPACTS FROM COLLABORATION



- Began with Sonoma County – completed in 2017.
- Followed by Marin, San Mateo and NPS/Presidio Trust portions of San Francisco Counties.
- Initiated in Santa Cruz and Santa Clara Counties
- Extended in 2019 to include mapping tidal wetland vegetation to the alliance level in all but Sonoma County.



Example for display only. Source: SF NERR / SFSU

Questions?

THANK YOU!

GOLDEN GATE NATIONAL PARKS CONSERVANCY

ONE TAM MEMBERS AND PARTNERS:

**NPS, MARIN COUNTY PARKS, STATE PARKS – BAY
AREA DISTRICT & MMWD**

CNPS/CDFW VEGETATION MAPPING PROGRAM

TUKMAN GEOSPATIAL

QUANTUM SPATIAL

KASS GREEN & ASSOCIATES

VANCE RUSSELL

MIKE VASEY – NERR

SHELLY BENSON

JOSH COLLINS - SFEI

NATE HEROLD – NOAA, COASTAL MGMT.

GREATER FARALLONES ASSOC. & NMS

MALT & MARIN RCD

USGS 3DEP & CA DWR

CA STATE COASTAL CONSERVANCY

CA NATURAL RESOURCES AGENCY

SONOMA AG + OPEN SPACE

CA LANDSCAPE STEWARDSHIP NETWORK

Please email me to receive future
product updates and data access

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