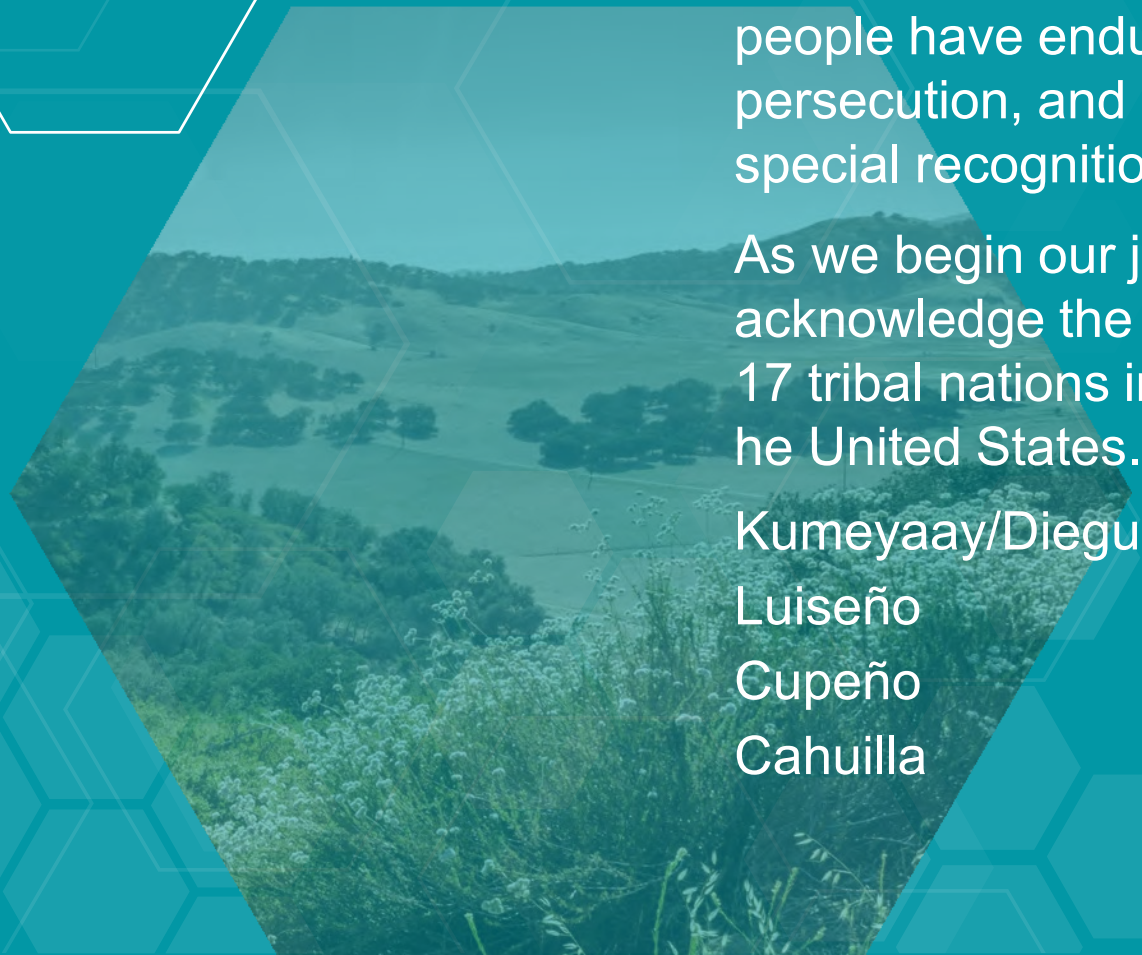
Regional Decarbonization Framework

Regional Decarbonization and Green Jobs Plan

Land Use and Natural Climate Solutions Sector Workshop

April 14, 2022

Learning from Our Past



There is harmony between land, nature and its people. While true for all neighborhoods, one specific group of people have endured displacement from their lands, persecution, and systemic oppression and deserve special recognition today.

As we begin our journey of regional decarbonization, we acknowledge the unceded territory and homelands of the 17 tribal nations in the region – the most in any county in t he United States.

Kumeyaay/Diegueño
Luiseño
Cupeño
Cahuilla

Regional Decarbonization Framework

Integrated Regional Decarbonization Framework

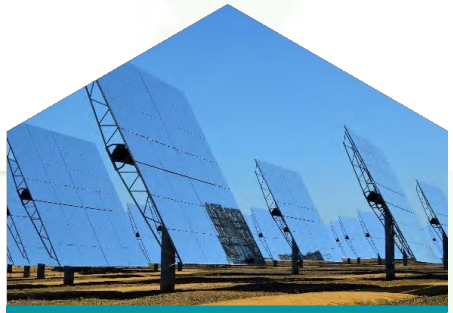
Technical Report led by UC San Diego

Workforce Development Study by Inclusive Economics

Implementation Pathways

The components of the Integrated Regional Decarbonization Framework

Four Decarbonization Pathways



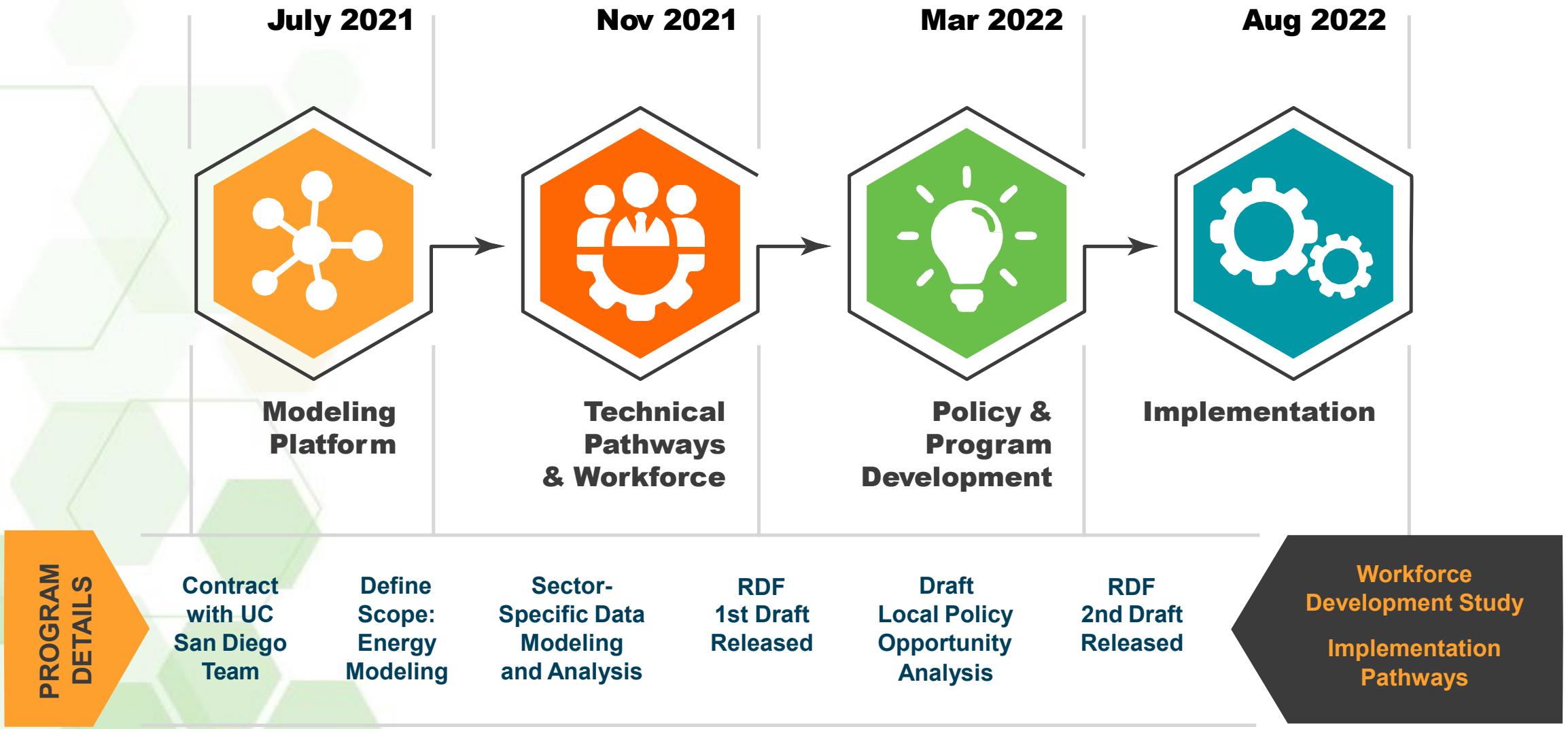
ELECTRICITY

TRANSPORTATION

BUILDINGS

LAND USE

Timeline


July 2021
Nov 2021
Mar 2022
Aug 2022
Modeling Platform
Technical Pathways & Workforce
Policy & Program Development
Implementation
PROGRAM DETAILS
Contract with UC San Diego Team
Define Scope: Energy Modeling
Sector-Specific Data Modeling and Analysis
RDF 1st Draft Released
Draft Local Policy Opportunity Analysis
RDF 2nd Draft Released
Workforce Development Study
Implementation Pathways

Initial Comment Period

- California Air Resources Board
- Campo Lake Morena CPG
- Carbon Sink Farms, San Diego
- Climate Action Campaign
- Ekolojik, Inc.
- IBEW Local 569
- Jacumba Community Sponsor Group
- J. Whalen Associates Inc.
- Port of San Diego
- SANDAG
- San Diego Food System Alliance
- San Diego Regional Policy & Innovation Center
- Sierra Club of San Diego
- Southwest Wetlands Interpretive Association
- Vice Chair Vargas's staff

Natural and Working Land Emissions and Sequestration

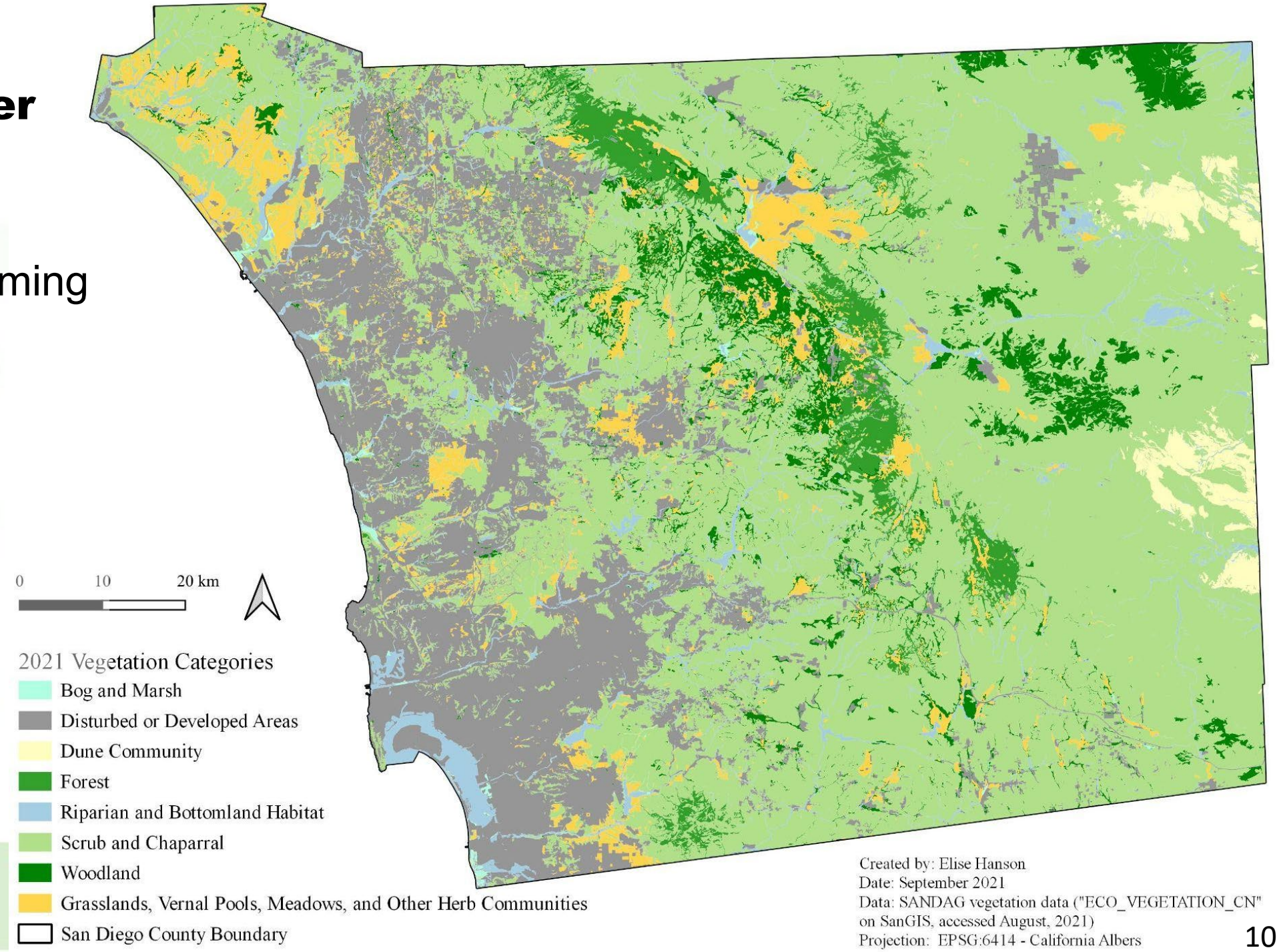
- Natural and working lands naturally emit and sequester carbon dioxide and other greenhouse gases
- Most natural and working lands act as carbon sinks because they sequester more carbon than they emit annually
- Main focus: carbon dioxide (CO_2)
- Not analyzed, but important: methane (CH_4), nitrous oxides (NO_x, SO_x), other greenhouse gases

Natural Climate Solutions (NCSs)

- Decrease emissions
- Increase sequestration
- Increase, protect, or maintain stored carbon

Natural Climate Solutions Chapter Scope

- Land use change
- Carbon/climate farming
- Blue carbon
- Urban forestry
- Tree planting in wildlands
- Non-forest management
- Fire management



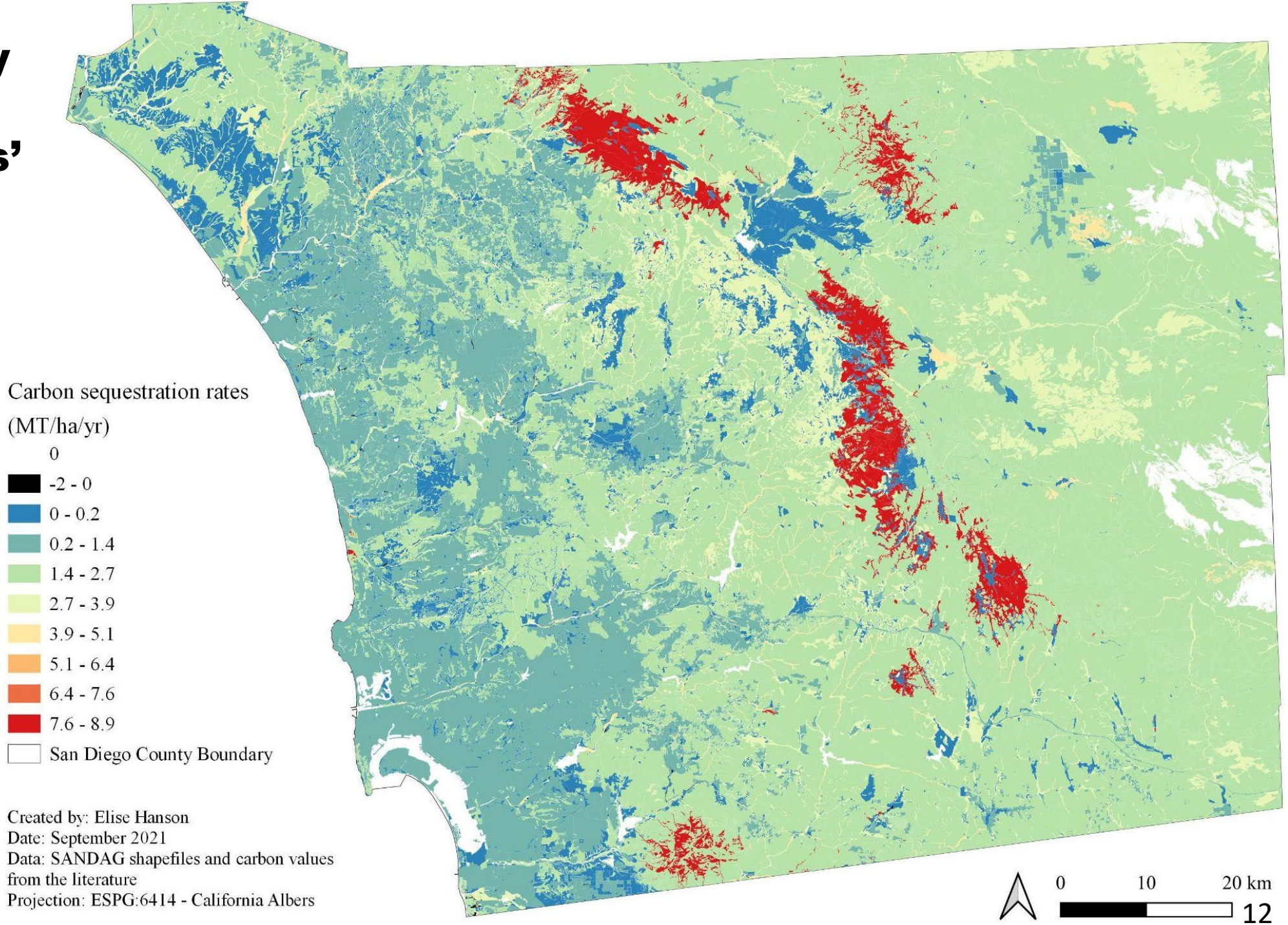
RDF Technical Report Energy Chapter

Montara Mountain Energy

School of GLOBAL POLICY & STRATEGY

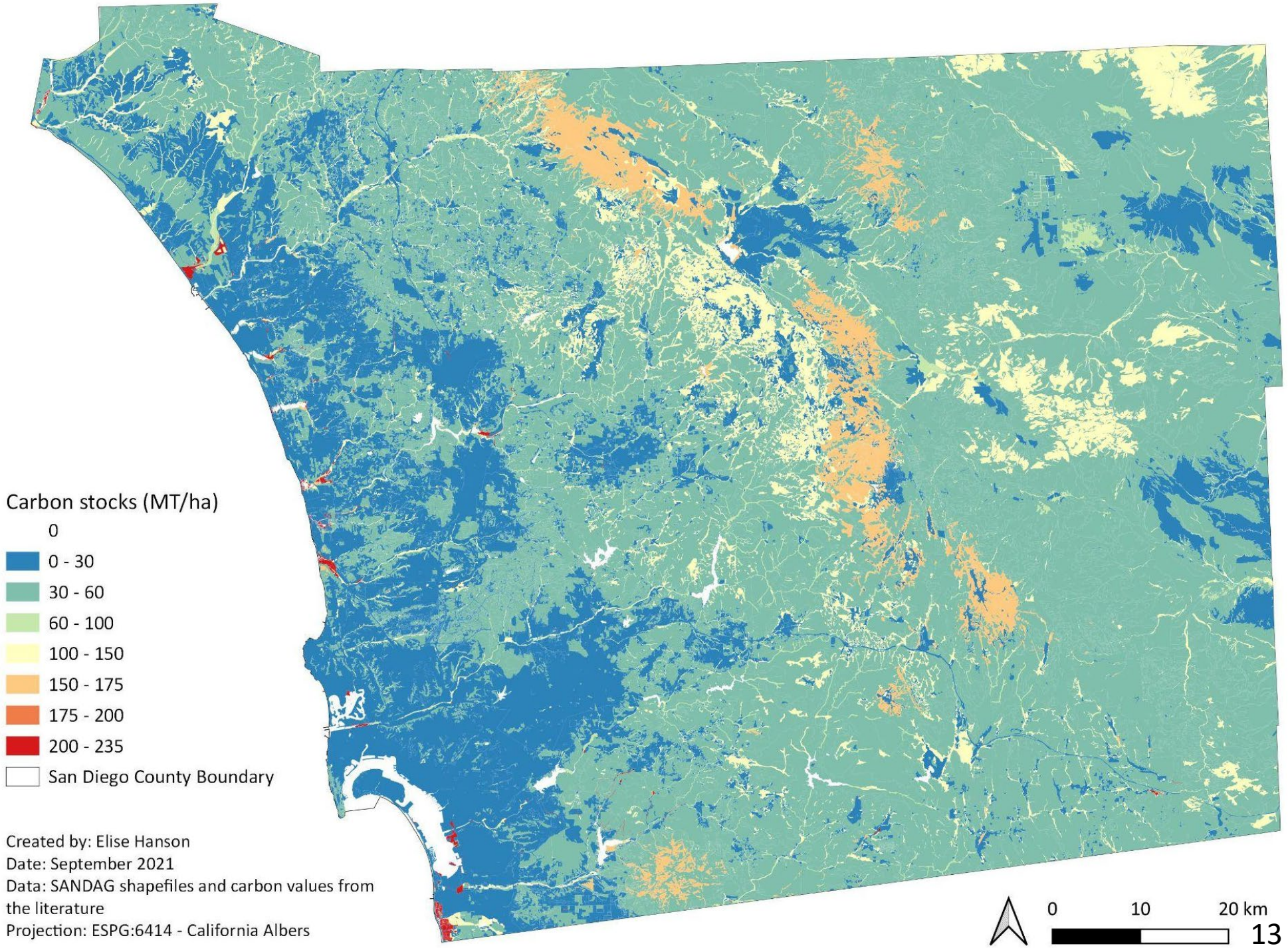
Key Takeaway 1: Natural and Working Lands' Sequestration

- Red = highest rate
- Blue = lowest rate
- "Sequestration" = annual rate of carbon dioxide absorbed into plants and soils



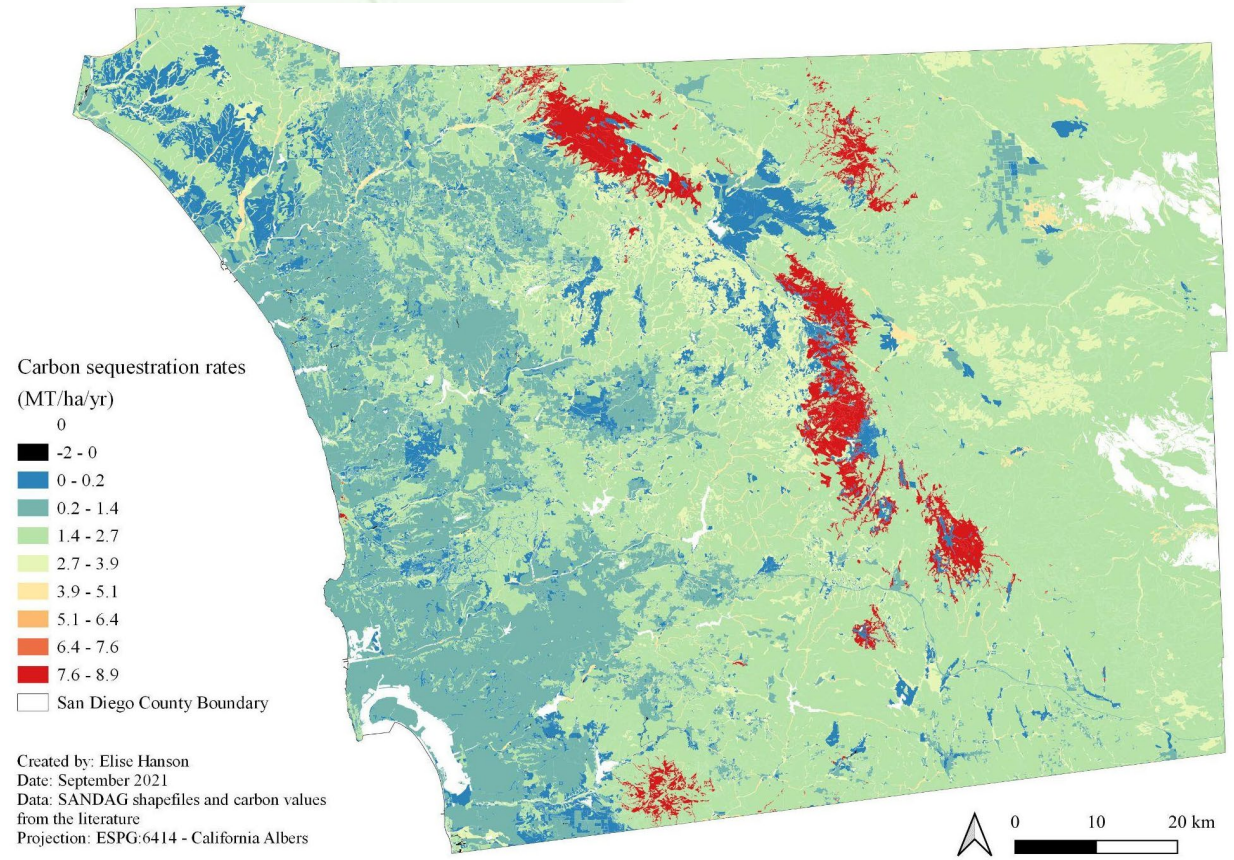
Key Takeaway 1: Natural and Working Lands' Storage

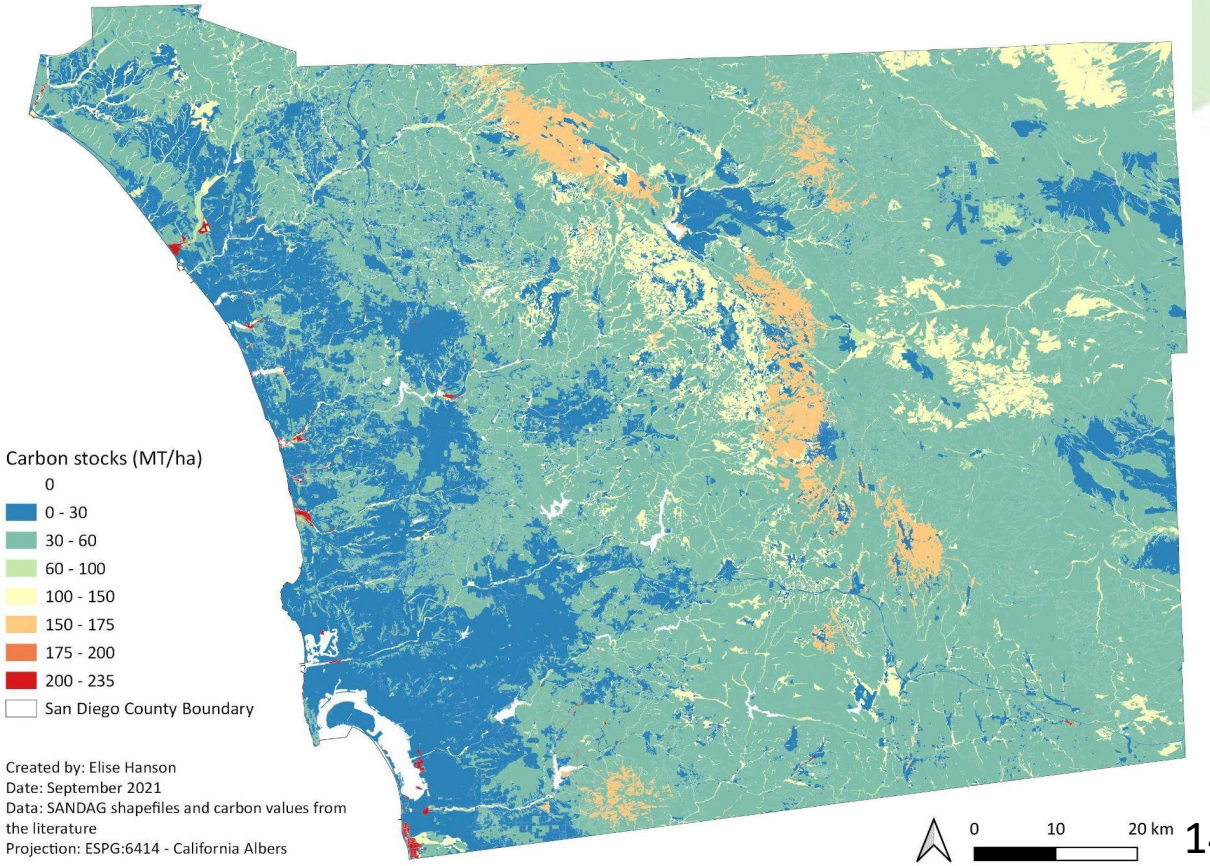
- Red = highest volume
- Blue = lowest volume
- "Storage" = total carbon dioxide in plants and soils



Key Takeaway 1: Natural and Working Lands' Sequestration and Storage

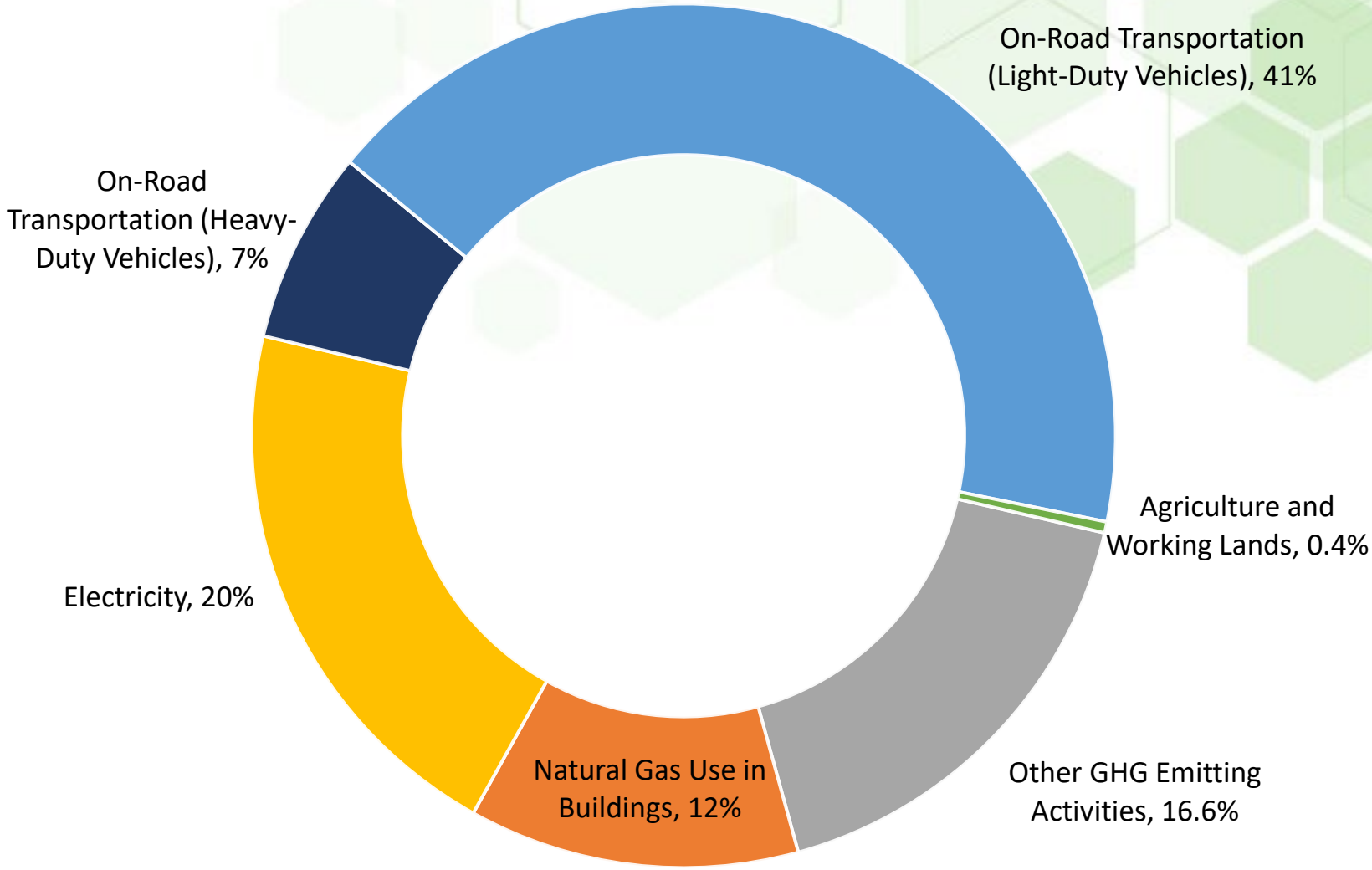
- Areas for future data integration into the framework:
  - Localized data
  - Eelgrass research
  - Better soil carbon accounting





Key Takeaway 2: Agricultural and Working Lands

- Relatively small contributor to regional emissions
- Natural climate solutions analyzed:
  - On-farm composting on agricultural and working lands
  - Riparian restoration
  - Orchard tree retention
- Ability to switch from net emissions to net sequestration
- Co-benefits



Source: Based on RDF Technical Report's Figure 8.13; data from SANDAG 2021 Regional Plan, Appendix X.

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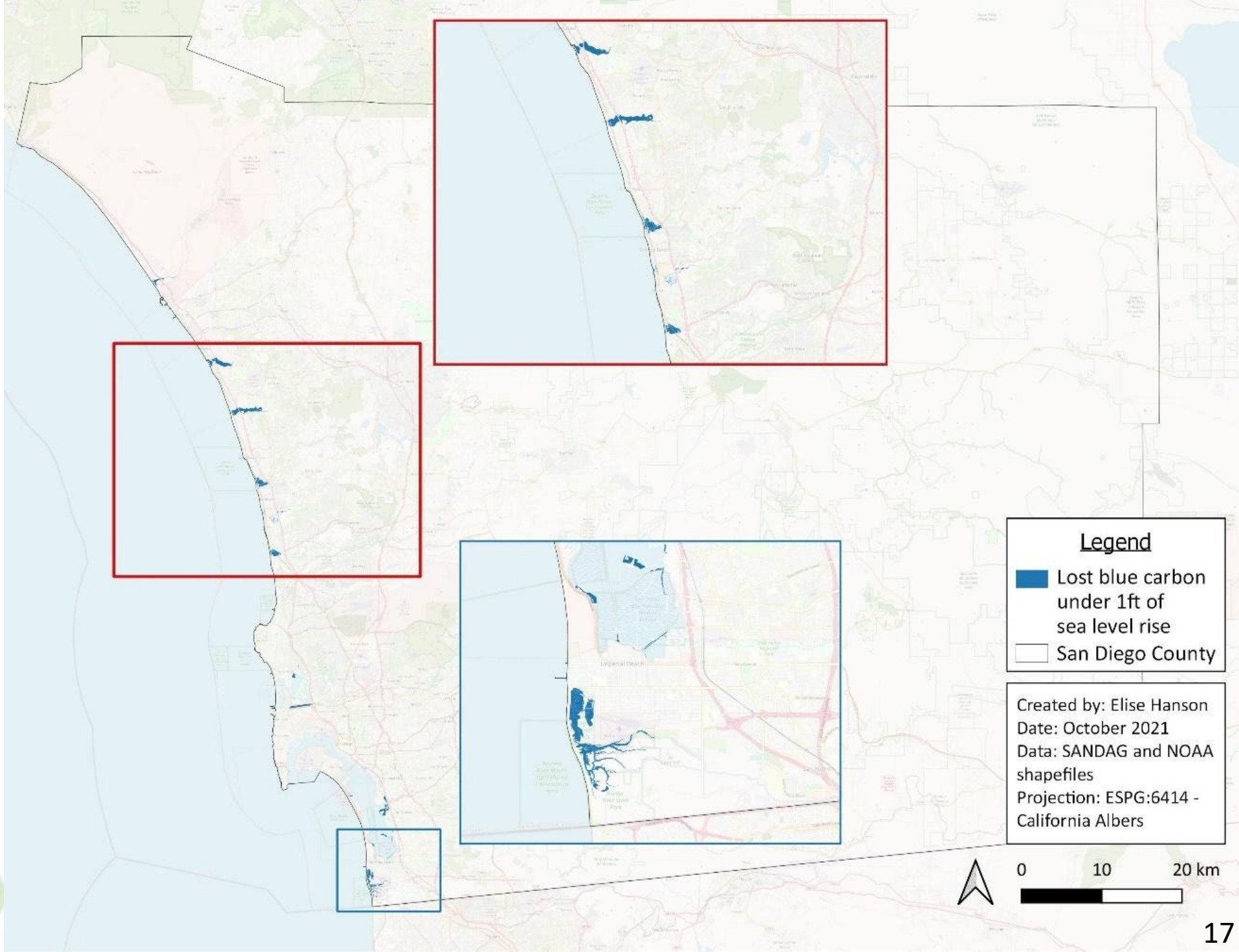
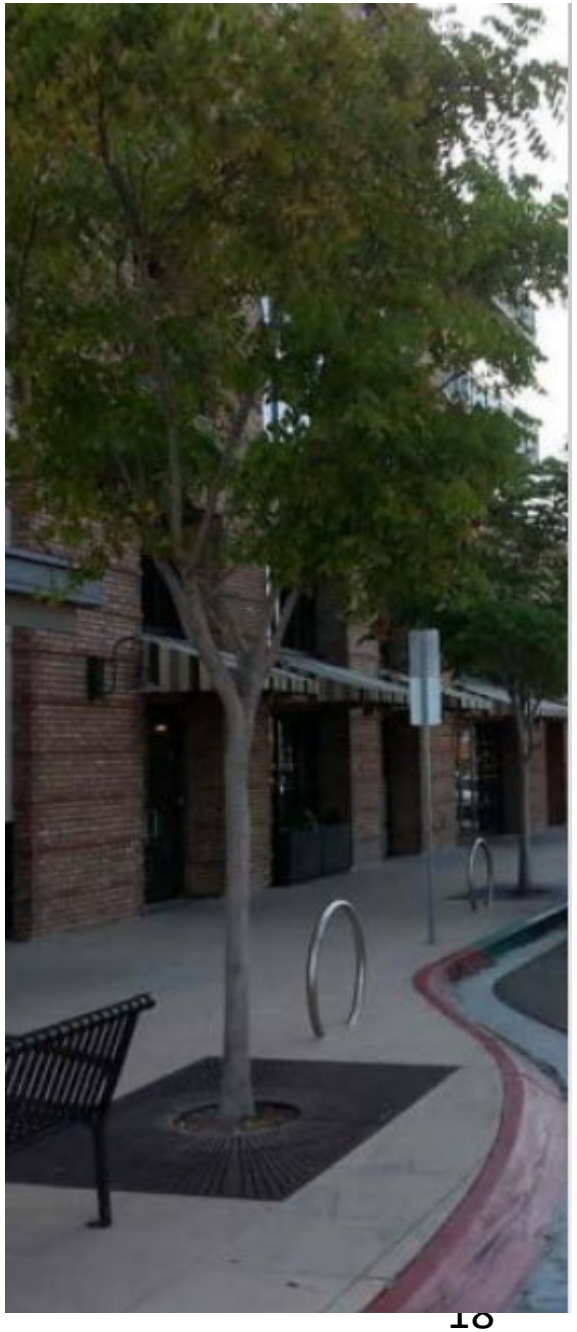
Key Takeaway 3: Blue Carbon and Sea Level Rise

- "Blue carbon habitats:"
  - Marshes
  - Wetlands
  - Salt and mudflats
  - Eelgrass/seagrass
- Under one foot of sea level rise:
  - 782 hectares (~1,900 acres) affected
  - ~180,000 MT of stored CO_2e impacted
  - ~1,700 MT of CO_2e annual sequestration impacted
- Co-benefits



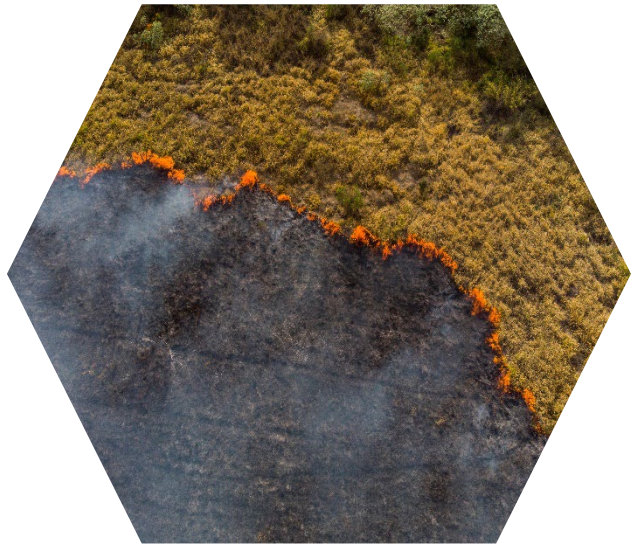
Key Takeaway 4: Urban Trees and Urban Forestry

- Urban trees – and other plants – sequester and store carbon
  - 2010-2060 estimate of urban tree expansion: increase annual sequestration rate of ~0.32 MMT of carbon per year; ~ 6 MMT of carbon
- Strong co-benefits: shade, air quality improvements, and habitat for wildlife



Key Takeaway 5: Additional Natural Climate Solutions

- **Tree planting and maintenance in public, non-urban lands**
  - Ongoing efforts to protect existing trees and plant new trees, focusing on native species
- **Non-forest management**
  - Non-native, invasive grass and forb species management; scrub management
- **Fire management**
  - Non-native, invasive species management; education campaigns and research; practices like home hardening and creating defensible spaces



Chapter Conclusions

The San Diego region has large stores of carbon and sequesters large amounts of carbon annually

More data is necessary

Equity and environmental justice should be key considerations throughout

Co-benefits can be quantified and utilized in better understanding the trade-offs associated with land use policies and carbon farming techniques

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