

Exhibit to Agenda Item #2

Board Strategic Development Committee and Special SMUD Board of
Directors Meeting

Tuesday, October 12, 2021, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Agenda

- Introduction to Landscape Carbon & Ecosystem Services & SMUD Opportunities
 - Rachel Huang, Director, Customer & Grid Strategy
- New Industry Partnership & Research at Rancho Seco II
 - Jessica Fox, Senior Technical Executive & Director, Power in Pollinators, Electric Power Research Institute
 - Dr. Rebecca Hernandez, Associate Professor of Ecology and Earth System Science, UC Davis & Founder, Wild Energy Lab
- Sacramento-San Joaquin Delta Update
 - Campbell Ingram, Executive Officer, Sacramento-San Joaquin Delta Conservancy

Biodiversity loss is accelerating

The Economist Menu Weekly edition Search

Technology Quarterly
Jun 19th 2021 edition >

The other environmental emergency

Loss of biodiversity poses as great a risk to humanity as climate change



Biodiversity loss accelerates with 1 million species at risk of extinction, UN report finds

Nation May 6, 2019 9:46 AM EDT

Our Response to Climate Change Is Missing Something Big, Scientists Say

Yes, planting new trees can help. But intact wild areas are much better. The world needs to treat warming and biodiversity loss as two parts of the same problem, a new report warns.

Interest in Nature-based solutions is growing

California just became the first state to commit to 30 by '30. Here's what that means

On Oct. 7, Gov. Gavin Newsom signed an executive order that made California the first state in the nation to commit to a '30 by '30' goal — a pledge to conserve 30 percent of the state's land and waters by 2030.

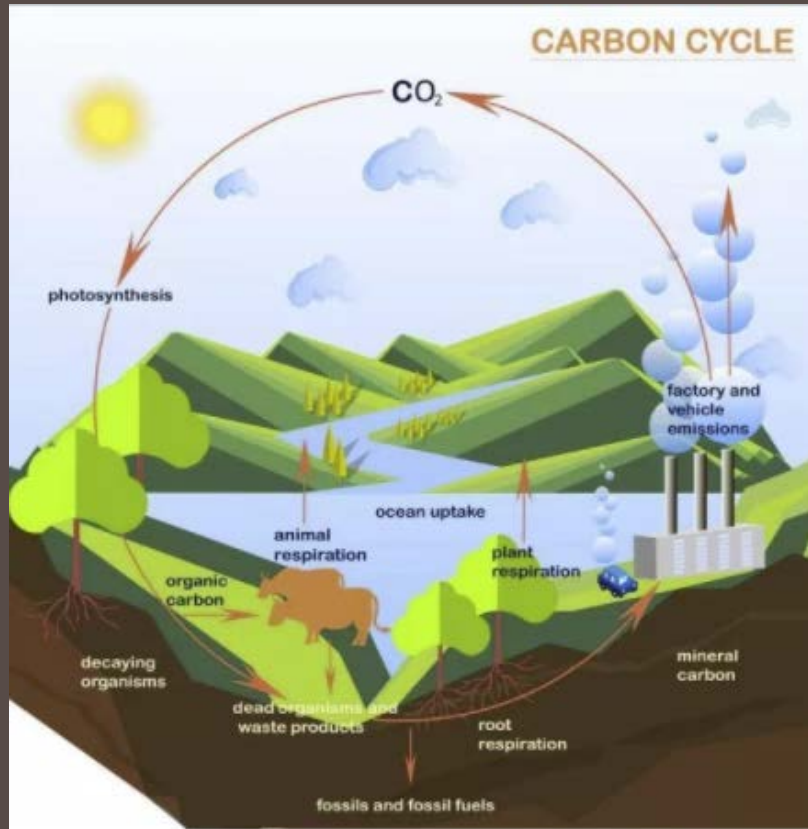
California 2030 Natural and Working Lands Climate Change Implementation Plan Concept Paper

California Air Resources Board | California Environmental Protection Agency
California Department of Food and Agriculture | California Natural Resources Agency

VILSACK SAYS A CARBON BANK FITS INTO USDA'S PORTFOLIO

THE USDA HAS THE AUTHORITY TO CREATE A SO-CALLED CARBON BANK TO ENCOURAGE CLIMATE MITIGATION ON THE FARM.

What are nature-based solutions?



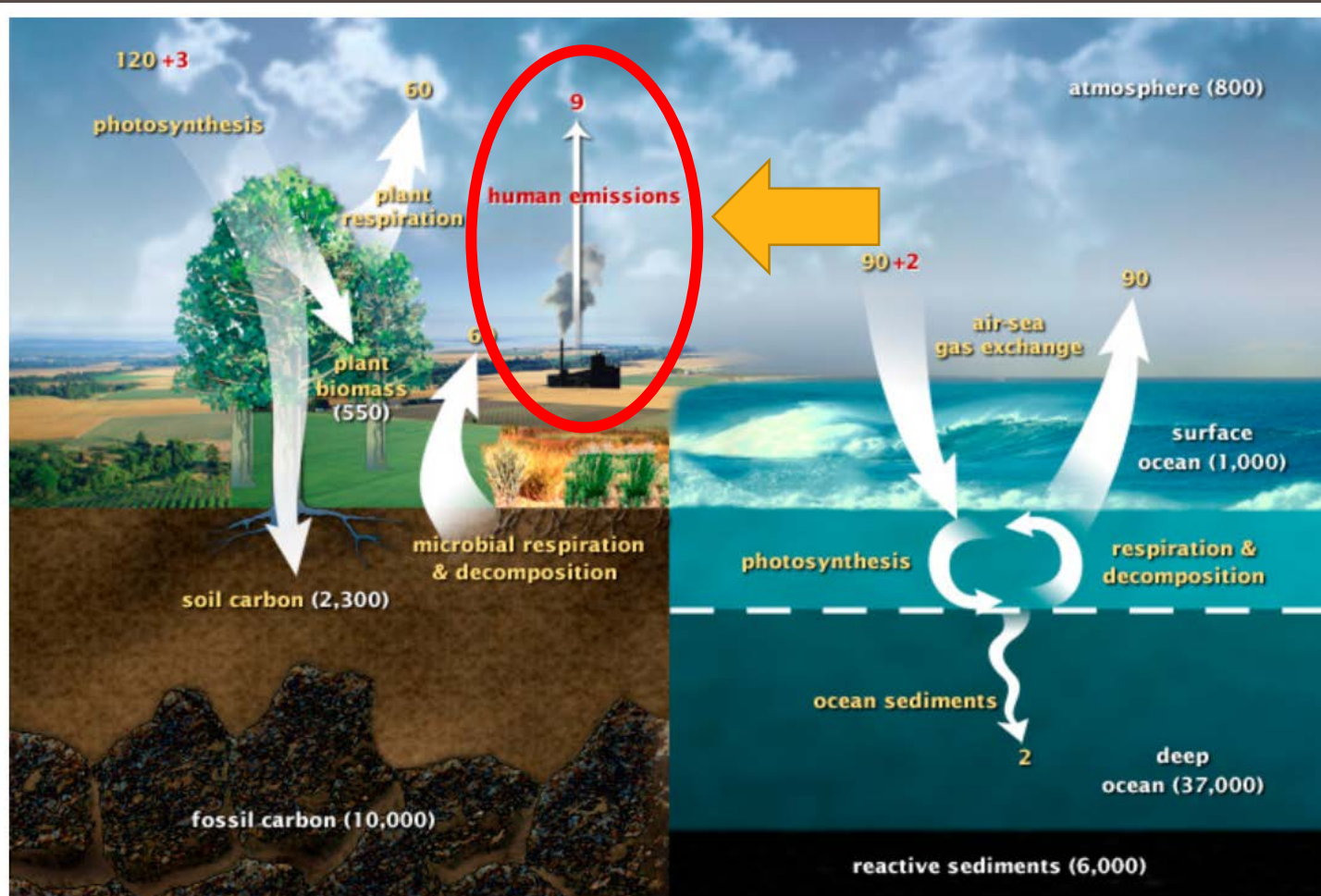
biologydictionary.net

Photosynthesis and other biological processes store carbon in soil and biomass

These natural systems can be protected and enhanced to increase CO₂ removal from the atmosphere



JANUARY 2019 DRAFT California 2030 Natural and Working Lands Climate Change Implementation Plan



This diagram of the fast carbon cycle shows the movement of carbon between land, atmosphere, and oceans. Yellow numbers are natural fluxes, and red are human contributions in gigatons of carbon per year. White numbers indicate stored carbon. (Diagram adapted from U.S. DOE, [Biological and Environmental Research Information System](#).)

Example offset protocols for nature-based solutions

- CARB Compliance Market

- Rice Cultivation
- Urban Forest Projects
- US Forestry Projects



- Voluntary Market

- Avoided Ecosystem/Grassland Conversion
- Soil Carbon Enrichment
- Organic Waste Composting & Digestion
- Sustainable Grassland Management (with fire and grazing)
- Improved and Sustainable Ag Land Management
- Wetland Conservation or Rewetting (various)



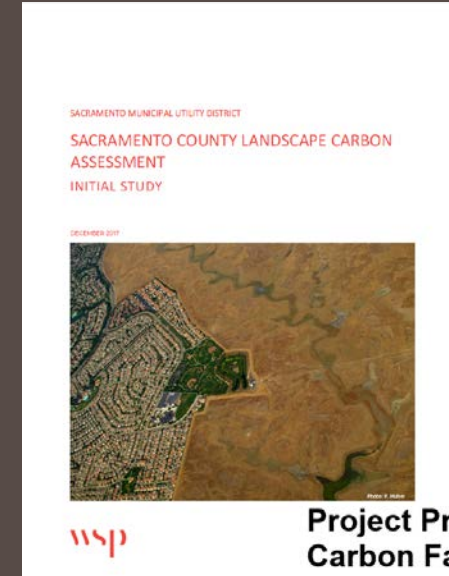
Modeling and other approaches are being tested to reduce monitoring cost

Nature Based Solutions and the Zero Carbon Plan

- We are not planning to leverage any offsets to achieve ZCP
- However, offsets can provide:
 - Further mitigation of utility scale solar impacts (beyond our current use of disturbed land & minimal construction disturbance)
 - Significant positive local and regional co-benefits
 - Long-term potential to become “Net Negative” and address historic emissions and Scope 3 (upstream) emissions
- Considerations
 - Scientific understanding of how to quantify benefits is evolving
 - Federal and state incentives may be available
 - Potential revenue stream from offset sales
 - We manage thousands of acres of land and thus have opportunity to contribute

SMUD R&D & Operational Efforts

- 2017 Sacramento County Land Carbon Assessment
- 2019 RSSII Project Assessment (with Power Gen)
- American River Parkway Pollinator Pilot (Vegetation Management)
- SMUD Mitigation Bank (Environmental Services)
- Sacramento Shade (Advanced Energy Solutions)
 - CivicSpark Fellows to explore addition of shrubs, development of City Forest Credits and revisit the pilot American River project



**Project Proposal:
Carbon Farming and Pollinator
Habitat Creation in Utility-Scale
Solar at SMUD Rancho Seco
Solar II**



Future Opportunities

- Solar Roadmap: Incorporate RSSII research findings into Solar RFOs, operational practices
- SMUD land assets & other facilities
 - Solano Wind – 6000 acres, many grazed and cultivated
 - Transmission Circuit Miles: 484
 - Distribution Circuit Miles: 10,507
 - Gas Pipeline Circuit Miles: 86
- Offset market opportunities as ZCP roadmap evolves