

December 7, 2020

**Subject:** Update on RePlan Tool

**Reporting Period:** Update of ongoing work

**Staff Lead:** Denny Grossman

---

## Summary

The RePlan tool<sup>1</sup>, developed through the California Strategic Growth Council's Integrated Regional Conservation and Development (IRCAD) initiative, integrates natural resources and planning datasets with analytical and reporting tools on a web-based technology platform to inform and advance regional planning objectives. A collaborative team comprising State agencies and partners<sup>2</sup> developed RePlan's overall approach and methodology. The California High Speed Rail Authority and the Wildlife Conservation Board provided support to develop the tool. Several State agencies and partners are using RePlan to access relevant, up-to-date planning datasets, efficiently apply these data to inform their project activities, and support the identification and selection of priority programs and projects. This report provides an overview of RePlan, its development, and its current applications.

## Update on RePlan

### *How RePlan Works*

RePlan provides efficient access to conservation and resource management datasets to help agencies and organizations advance their planning goals and objectives and a more efficient, informed and coordinated manner. By integrating key planning datasets with visualization, and analytical and reporting functions on an interactive, web-based, user-friendly platform RePlan's combination of data and tool functionality enables users to perform multiple regional planning functions in a streamlined way. RePlan includes several functions to support planning processes that allow a user to do each of the activities outlined below and in Figure 1.

### **Define a Region of Interest**

The user can select the entire state, one or more ecoregions, one or more counties, one or more watersheds, or define a custom region.

---

<sup>1</sup> [www.replan-too.org](http://www.replan-too.org)

<sup>2</sup> California Energy Commission, California Department of Fish and Wildlife, California Wildlife Conservation Board, California Department of Water Resources, Caltrans, California Department of Conservation, California Strategic Growth Council, US Fish and Wildlife Service, UC Davis and The Nature Conservancy



### Explore a Region of Interest

Visually explore the region of interest by exposing different conservation values, as well as any of the other environmental, land designation and land use, climate change and ecosystem service datasets.

### Generate Analyses to Evaluate Conservation Outcomes

In regions with complete Regional Conservation Assessments, users can generate highly detailed conservation analyses and reports for site evaluation, comparison, and reporting.

### Screen to Identify a Region of Interest

Screen the region of interest by applying user-defined screening criteria for all available data layers. The system will represent all sites matching the user-defined screening criteria.

### Conduct Further Analysis Using Additional Data or Outputs

Select or create sites for further analysis and evaluation. Users can select sites a) from the screening results, b) from uploaded GIS files, or c) from those created with system drawing tools.

### Generate Reports to Support Planning Processes and Decisions

Analyze the selected sites and create reports that document the relationship between these sites and selected conservation and planning factors. This analysis can be represented on screen for one factor at a time, or multiple reporting factors can be selected and downloaded into an Excel or PDF report.

## RePlan: Primary System Functions

#### Define Region of Interest

RePlan: Regional Conservation and Development Planning Tool

Select Regions of Interest

Example: State, County, Watershed, Custom

#### Screen Landscape

RePlan: Regional Conservation and Development Planning Tool

Screen Settings

Conservation Elements, Dispersed Land Use, Land Use, etc.

#### Select or Define Sites

RePlan: Regional Conservation and Development Planning Tool

Select Sites for Analysis

Show/Hide layers

#### Site Exploration, Evaluation and Reporting

Terrestrial Intactness

Site 1: Very Low (0 acres (0%)), Low (0 acres (0%)), Moderately Low (170.3 acres (87%)), Moderately High (1,708.3 acres (87%)), High (8,811.8 acres (38%)), Very High (0 acres (0%))

Site 2: Very Low (0 acres (0%)), Low (0 acres (0%)), Moderately Low (168.8 acres (187%)), Moderately High (11,811.3 acres (187%)), High (8,811.8 acres (38%)), Very High (0 acres (0%))

Natural and Working Lands Carbon & Greenhouse Gas Model

Site 1		Site 2	
Type	Metric: Tons of Carbon	Type	Metric: Tons of Carbon
Carbon Above Ground Main Canopy	14,231	Carbon Above Ground Main Canopy	14,387
Carbon Below Ground Main Canopy	25,821	Carbon Below Ground Main Canopy	112,878
Carbon Litter	16,746	Carbon Litter	45,961
Carbon Soil Organic	51,512	Carbon Soil Organic	385,901
<b>Total</b>	<b>108,312</b>	<b>Total</b>	<b>579,128</b>

### **Figure 1: RePlan: Basic System Functions Datasets in RePlan**

Regional Conservation Assessments (RCAs) provide detailed standardized representations of conservation values and priorities across each ecoregion and major watershed in California. The Regional Conservation Assessment data products in the RePlan tool include multiple standardized State and Federal datasets that support regional planning decisions. RePlan extensions built to support specific requirements for California Department of Food and Agriculture (CDFA) and Department of Water Resources (DWR) programs and functions include additional datasets. The tables below include current core RePlan datasets.

**Table 1: Jurisdictions and Boundaries**

<b>Dataset</b>	<b>Description</b>	<b>Source</b>
State boundaries	California State Map	CA Dept of Forestry and Fire Protection
Ecoregions	Ecoregion Sections	USDA Forest Service
Watersheds	Hydrological Units (HUC 4)	USDA
Counties boundaries	California Counties	CA Dept of Forestry and Fire Protection

**Table 2: Environmental Datasets**

<b>Dataset</b>	<b>Description</b>	<b>Source</b>
Wetlands	Wetlands, Streams and Riparian Areas (CARI)	San Francisco Estuary Institute
Terrestrial Intactness	Extent of human impacts on the natural environment	Conservation Biology Institute
CA Natural Diversity Data Base (CNDDDB)	Status and Location of rare species and communities	CA Dept of Fish and Wildlife
Essential Connectivity Areas	Intact habitat blocks and critical linkages to be maintained as wildlife corridors	CA Dept of Fish and Wildlife
Important Bird Areas	Important conservation sites for birds	National Audubon Society
State Wildlife Action Plan targets	Vision for wildlife conservation	CA Dept of Fish and Wildlife
Areas of Conservation Emphasis (ACE III)	Geographic representation of biodiversity, rarity and endemism	CA Dept of Fish and Wildlife
Regional Conservation Assessments	Geographic representation of conservation value	Multi-Agency Task Force (Federal and State Agencies, Universities and NGOs)
Terrestrial and Aquatic Conservation Portfolios	Action Map that would meet all Conservation Goals in an Ecoregion	UC Davis

**Table 3: Land Designation and Land Use Datasets**

Dataset	Description	Source
Protected Areas	Designated conservation sites by protection rank	Conservation Biology Institute
Conservation Easements	Designated easements for conservation	GreenInfo Network
General Land Use Plan categories	Land Use Categories derived from County General Plans	DOC and UC Davis
Owner type	Federal, State, Local and Private ownership categories	Conservation Biology Institute
Designated Critical Habitat	Critical Habitat for Federally Listed Species	USFWS
Disadvantaged Communities	Priority populations by census tract	California Air Resources Board

**Table 4: Climate Change Datasets**

Dataset	Description	Source
Climate Change Exposure	Projected change for a number of climate variables plus aridity	Conservation Biology Institute
Climate Change Sensitivity	Soil sensitivity to climate change	Conservation Biology Institute

**Table 5: Ecosystem Service Co-Benefits**

Dataset	Description	Source
Prime Agricultural and Range Lands	Ranking of farmland value across the state	Dept. of Conservation
Total Ecosystem Carbon Stock	Total ecosystem carbon (aboveground, below ground and soil carbon)	CARB
Groundwater Recharge Potential	Suitability index for groundwater recharge on agricultural land	UC Davis Cooperative Extension (SAGBI)

### ***RePlan Applications***

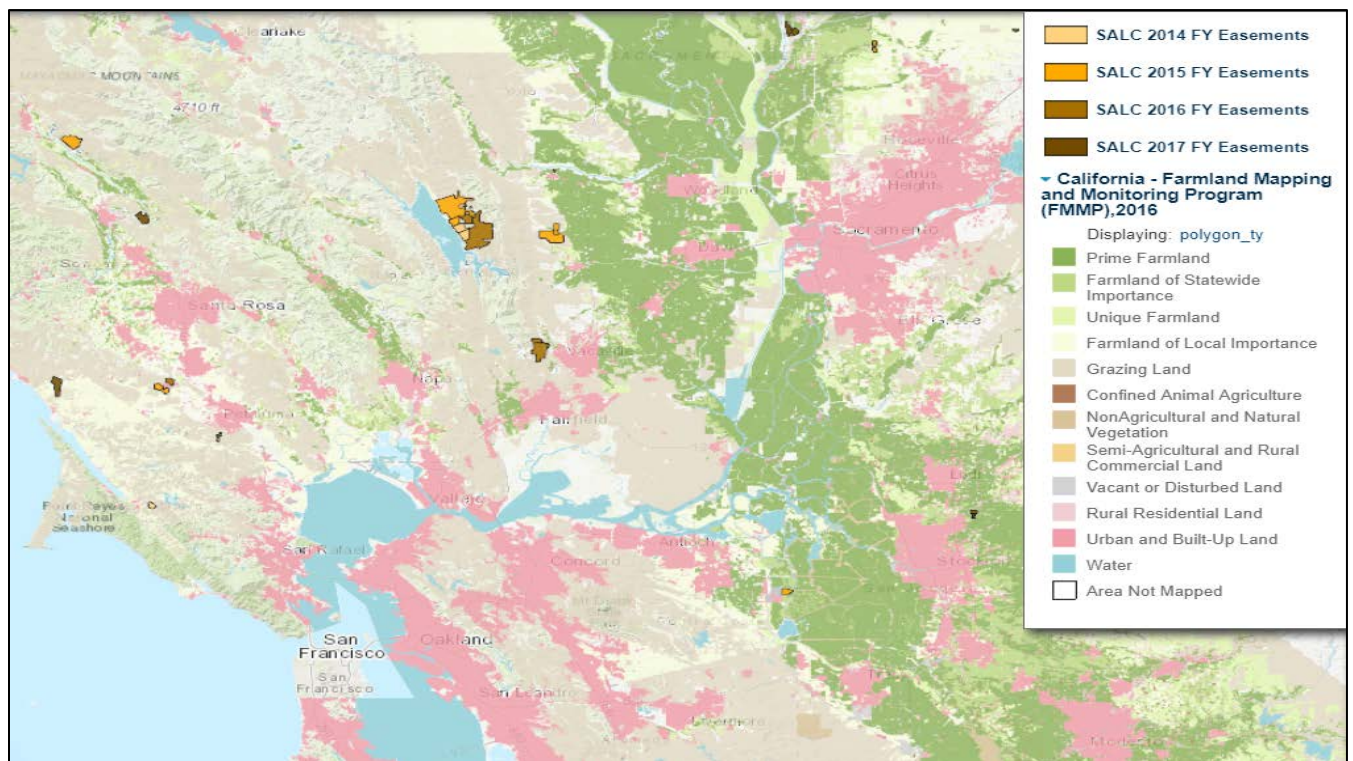
Numerous regions in California have completed RCAs; RePlan provides a platform on which to creatively integrate the RCA information with other State planning datasets. This integration enabled SGC to develop partnerships – including the three described below – that enable State agencies to use RePlan to support their programmatic objectives while advancing alignment of their work with broad development and conservation goals across the State.

**California Department of Food and Agriculture Healthy Soils Program**

SGC partnered with the California Department of Food and Agriculture (CDFA) to create a RePlan extension to streamline the proposal submission process to CDFA’s Healthy Soils Program. This custom module of RePlan allows a grant applicant to locate and map proposed conservation practices, view and select from recommended species for planting, and conform with multiple project eligibility requirements. RePlan summarizes all project components in a proposal report for upload to the CDFA Healthy Soils Program project submission website (see Attachment 1 for more information).

**SGC and Department of Conservation Sustainable Agricultural Lands Conservation Program**

SGC partnered with the Department of Conservation (DOC) to use RePlan to evaluate and report the effectiveness of 2014-2016 awards towards addressing the direct and indirect program objectives of the Sustainable Agricultural Lands Conservation Program (SALC) (see Figure 2). More recently, DOC used RePlan to evaluate the co-benefits associated with the Round 6 SALC applications. RePlan’s conservation and ecosystem services co-benefits functions provided additional scoring and ranking information that helped inform the selection of projects DOC staff will recommend for funding.



**Figure 2: RePlan Analysis of SALC Grants Awarded in Years 2014, 2015, 2016 and 2017**

### California Department of Water Resources Riverine Stewardship Program

RePlan launched a new program-specific application for the Urban Streams Restoration Program and San Joaquin Fish Population Enhancement Program at the California Department of Water Resources (DWR). This tool helps DWR staff evaluate the program benefits and conservation effectiveness of proposed projects and resource management actions. RePlan integrates additional aquatic resource datasets with the existing assortment of regional planning data, analytical tools, evaluation matrices, and customized reporting functions. Components of this application can be viewed by the general public, with detailed analytic and reporting functions accessible to DWR program staff (see Figure 3 and Attachment 2 for more information).

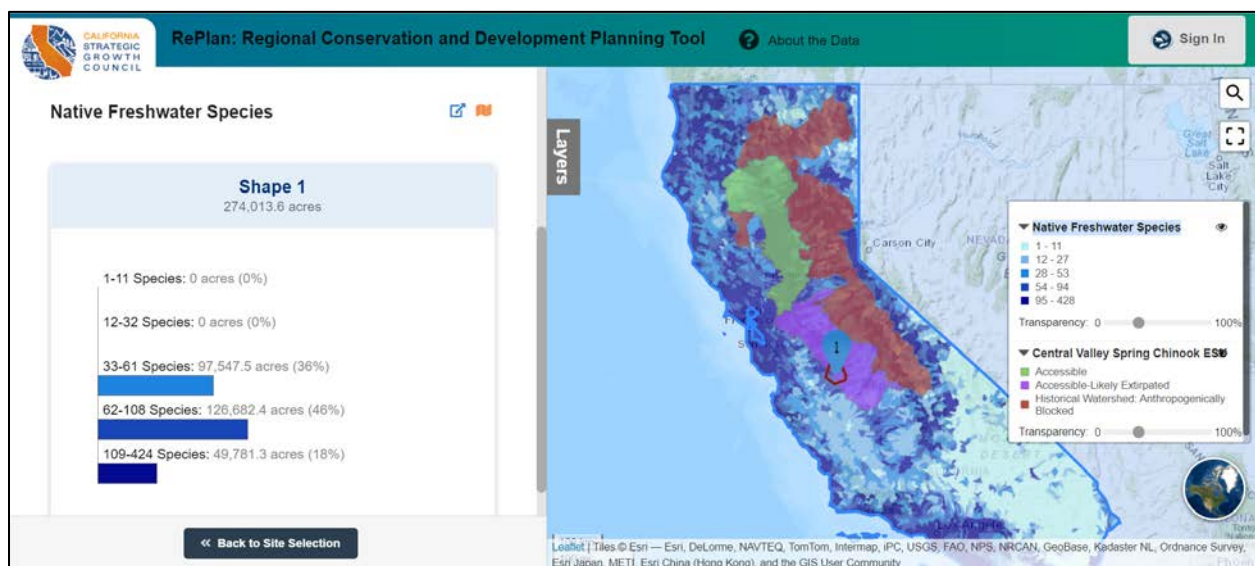


Figure 3: RePlan DWR Application

### Opportunities

Regional Conservation Assessments provide a detailed standardized representation of conservation values and priorities across each ecoregion and major watershed in California. The Inter-Agency RePlan team developed an approach to apply common datasets and methodologies to create these standardized RCAs. To date, terrestrial RCAs have been completed for the Mojave, Modoc, and the Central Valley, and aquatic RCAs for the three major watersheds that intersect with the Central Valley. This information is critical to inform conservation and development planning decisions across the state.

The RePlan tool is a user-friendly platform that integrates a broad suite of state planning datasets with detailed conservation information. Visualization, analysis and reporting functionality is included to support landscape screening, site identification and evaluation,

project and proposal evaluation, and report preparation. Current methodological advances enabled the integration of additional aquatic, ecosystem service and climate change factors. The RePlan tool also allows for user input and collaboration and engagement across users, which can facilitate effective planning processes.

In our partnerships with DWR, CDFA, and DOC, we have explored how RePlan can support the alignment of multiple funding opportunities across the State through the strategic use of these RCA and RePlan information products and tools. Providing a planning platform that integrates priority State objectives can help to align programs and funding opportunities across State agencies to advance and track the development of these goals and object.

Looking ahead, further development of RePlan could support RCA completion across California, along with additional investment programs to reflect land conservation, biodiversity, and related goals and data.

## **Attachments**

Attachment 1: “Partnership for Healthy Soils” Case Study

Attachment 2: “RePlan Support’s DWR’s Riverine Stewardship Program” Case Study

