Regulatory Committee Meeting Agenda
Thursday, March 28, 2024
2:00-3:00 p.m.
Zoom Meeting

Agenda

- Co-Chairs **Kevin Thomas**, Kimley-Horn and **Eric Miller**, Miller Marine Science and Consulting – Welcome

Update Items

- Legislative update
  - Resources/climate resilience bond discussion
  - Newly-introduced legislation:
    - AB 1992 (Boerner) - Coastal resources: coastal development permits: blue carbon demonstration projects **(Attachment)**
    - AB 2162 (Papan) – Shellfish and seaweed operations: marine restoration projects **(Attachment)**
    - AB 2409 (Papan) – OPR: permitting accountability transparency dashboard **(Attachment)**
    - AB 3023 (Papan) – Environmental protection: lands and coastal waters: conservation goals: 30X30 goal **(Attachment)**
    - SB 1324 (Limon) – California Ocean Science Trust: agreements **(Attachment)**
    - SB 1402 (Min) – 30X30 goal: state agencies: adoption, revision, or establishment of plans, policies, and regulations **(Attachment)**

- Events update
  - 2024 CalDesal Spring Mixer
    - ACWA Spring Conference - Sacramento
    - Wednesday, May 8, 2024 – Hyatt Regency Sacramento
    - Sponsorship opportunities available

Discussion Items

- DWR Report: Projected Brackish Water Desalination Projects in California **(Attachment)**

- SWRCB: Water Supply Strategy Implementation: Water Available for Brackish Groundwater Desalination **(Attachment)**

- Ocean Protection Council: Sea Level Rise Guidance: 2024 Science and Policy Update **(Attachment)**

- SWRCB: Proposed revision to mitigation fee schedule for once-through-cooling power plants

- Gameplan for Ocean Plan Amendment 2.0 engagement by CalDesal

Recent Project Activity, Upcoming Milestones

- Doheny Desalination Project
- Monterey Desalination Project
- Carlsbad Desalination Facility Intake Project
- MWD desalination siting and technical studies
- Updates on any other ongoing desalination projects?

Other Items

Next Regulatory Committee Meeting:
April 25, 2024 – 2:00 PM

ASSEMBLY BILL No. 1992

Introduced by Assembly Member Boerner

January 30, 2024

An act to add Sections 30100.3 and 30237 to the Public Resources Code, relating to coastal resources.

LEGISLATIVE COUNSEL'S DIGEST

AB 1992, as introduced, Boerner. Coastal resources: coastal development permits: blue carbon demonstration projects.

Existing law, the California Coastal Act of 1976, among other things, requires anyone wishing to perform or undertake any development in the coastal zone, except as specified, in addition to obtaining any other permit required by law from any local government or from any state, regional, or local agency, to obtain a coastal development permit from the California Coastal Commission, as provided.

This bill would authorize the commission to authorize blue carbon demonstration projects, as defined, in order to demonstrate and quantify the carbon sequestration potential of these projects to help inform the state's natural and working lands and climate resilience strategies. The bill would, among other things, authorize the commission to require an applicant with a project that impacts coastal wetland, subtidal, intertidal, or marine habitats or ecosystems to build or contribute to a blue carbon demonstration project.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) California has set the targets to reduce carbon emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

(b) In 2020, Governor Gavin Newsom signed Executive Order No. N-82-20, directing the Natural Resources Agency, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state's carbon neutrality goal and build climate resilience.

(c) Executive Order No. N-82-20 also set the goal to conserve at least 30 percent of state land and coastal waters by 2030 and a recent Natural Resources Agency report on implementation recognizes the need to restore degraded coastal habitats to capture carbon and mitigate climate change impacts.

(d) Blue carbon, carbon held and stored in coastal vegetation, such as seagrasses and wetlands, holds great potential to help the state meet its climate goals. Recent studies have found that coastal wetlands in some instances capture carbon at a greater rate than tropical forests and store three to five times more carbon per equivalent area than these forests.

(e) The State Air Resources Board's draft 2022 scoping plan update does not specifically include blue carbon in the state's natural and working lands inventory due, in part, to the limited availability of data and methodologies to inventory the stored carbon.

(f) Given the potential of blue carbon sequestration, blue carbon demonstration projects in California may help the state better understand how blue carbon could potentially contribute to the state achieving its carbon neutrality and climate resilience goals.

SEC. 2. Section 30100.3 is added to the Public Resources Code, to read:

30100.3. "Blue carbon demonstration project" means the restoration of coastal wetland, subtidal, intertidal, or marine habitats or ecosystems, including, but not limited to, wetlands and seagrasses, that can take up and sequester carbon. A blue carbon demonstration project is limited to all of the following:

(a) Ecologically appropriate locations where the habitat or ecosystem had historically occurred and subsequently become degraded or removed.

(b) The restoration of the habitat or ecosystem to its historical state to provide ecosystem services and habitat values, to the extent feasible.

(c) The use of diverse native species.

SEC. 3. Section 30237 is added to the Public Resources Code, to read:

30237. (a) The commission may authorize blue carbon demonstration projects in order to demonstrate and quantify the carbon sequestration potential of these projects to help inform the state's natural and working lands and climate resilience strategies.

(b) The commission may require an applicant with a project that impacts coastal wetland, subtidal, intertidal, or marine habitats or ecosystems to build or contribute to a blue carbon demonstration project.

(c) The commission shall consult with the State Air Resources Board, the Department of Fish and Wildlife, the State Coastal Conservancy, the State Lands Commission, and other public entities, and seek consultation with the United States Army Corps of Engineers and the National Oceanic and Atmospheric Administration, in developing the blue carbon demonstration project program.

(d) Each blue carbon demonstration project shall be designed, monitored, and have sufficient data collected in order to demonstrate the carbon uptake and sequestration achieved. This shall include an evaluation of relevant factors affecting the permanence of the sequestration. The results shall be presented to the commission in a public hearing.

O

ASSEMBLY BILL No. 2162

Introduced by Assembly Member Papan

February 6, 2024

An act relating to fish and wildlife.

LEGISLATIVE COUNSEL'S DIGEST

AB 2162, as introduced, Papan. Shellfish and seaweed operations: marine restoration projects.

Existing law requires the owner of each aquaculture facility to register with the Department of Fish and Wildlife. Existing law authorizes the department, among other powers, to prohibit an aquaculture operation or the culturing of any species at any location where it is determined it would be detrimental to adjacent native wildlife. Existing law also authorizes the Fish and Game Commission to regulate the taking, collecting, harvesting, gathering, or possession of kelp for purposes other than profit.

This bill would declare the intent of the Legislature to enact subsequent legislation to consider innovative new approaches to permitting efficiency and thereby encourage sustainable shellfish and seaweed operations and marine restoration projects. The bill would also make related findings and declarations.

Vote: majority. Appropriation: no. Fiscal committee: no. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) California has the potential to become a global leader in sustainable shellfish and seaweed production and restoration, while also increasing coastal resiliency and strengthening climate change adaptation.

(b) In the coming years, sustainable sources of food must become more broadly available to a growing population, even as climate change strains food supplies across the planet.

(c) The ocean, coastlines, and coastal communities are disproportionately impacted by increasing carbon dioxide and other greenhouse gas emissions. These impacts include changes in water temperature, ocean acidification and deoxygenation, rising sea levels, increased storm intensity, and changes in the diversity and abundance of marine species, among other effects. Climate-driven degradation of coastal and marine ecosystems threatens the physical, economic, and food security of California communities, and weakens the ability of the ocean to provide critical ecosystem services such as food production and carbon sequestration.

(d) In addition to, and partially as a result of, global climate change impacts, California has experienced historic and continued degradation of its ecosystems. For example, in the past decade, more than 96 percent of the bull kelp in Northern California has disappeared, and two species of abalone are now listed under the federal Endangered Species Act.

(e) A diverse portfolio of well-designed and managed aquaculture operations that includes shellfish and seaweed will help support a more sustainable and resilient food supply amidst changing environmental conditions, while simultaneously proving restorative in nature, reducing the impact of climate change on our coasts and oceans through ecosystem services such as carbon sequestration, water filtration, coastal defense, oxygen production, and provision of essential habitat for wild species.

(f) Recovery of depleted marine species and habitats can be advanced through conservation efforts led by traditional academic and conservation practitioners, as well as through focused production, which in some instances can be led by commercial operators. Additionally, kelp and bivalve production can provide real-time monitoring of changing climate and ocean conditions through an ongoing review of impacts on production and restoration, often in collaboration with academia.

(g) Through Executive Orders Nos. N-82-20 and B-55-18, California has acknowledged the role natural and working lands and waters can and will play in reducing the impacts of anthropogenic climate change. Kelp and bivalve production and restoration are among the most effective uses of natural and working marine ecosystems in providing ecosystem, water quality, and carbon sequestration benefits.

(h) Innovation and experimentation are critical to advancing marine restoration in the state. In order to better engage and leverage the private sector to test restoration techniques, and finance new marine restoration projects, new approaches are needed to expedite and harmonize permitting and approval for those activities, restoration research, and experimental pilot projects that can, if successful, be expanded to full-scale operations.

(i) Demand for environmentally beneficial shellfish and seaweed projects far outpaces the regulatory approval process. As a result, shellfish and seaweed activities that benefit California's marine habitats and ecosystems are not being implemented.

(j) Recovery of depleted organisms through restoration, translocation, and reintroduction may help improve the resiliency of our coastal ocean ecosystems to climate and other anthropogenic stressors.

SEC. 2. It is the intent of the Legislature to enact subsequent legislation to consider innovative new approaches to permitting efficiency and thereby encourage sustainable shellfish and seaweed operations and marine restoration projects.

O

ASSEMBLY BILL No. 2409

Introduced by Assembly Member Papan

February 12, 2024

An act to add Section 65040.18 to the Government Code, relating to land use.

LEGISLATIVE COUNSEL'S DIGEST

AB 2409, as introduced, Papan. Office of Planning and Research: permitting accountability transparency dashboard.

Existing law establishes the Office of Planning and Research within the Governor's office to provide long-range planning and research and to serve as the comprehensive state planning agency.

This bill would require the office, on or before January 1, 2026, to create and maintain, as specified, a permitting accountability transparency internet website (dashboard). The bill would require the dashboard to include a display for each permit to be issued by specified state agencies for all covered projects. The bill would define various terms for these purposes. The bill would also require the dashboard to include, but not be limited to, information for each permit to be issued by a state agency that is required for the completion of the project, including, among other requirements, the permit application submission date. The bill would require each state agency with a responsibility for issuing a permit for a covered project to provide information in the appropriate time and manner as determined by the office. The bill would also make related findings and declarations.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) The timely issuance of permits for critical infrastructure projects is essential for the protection of human health and safety as well as the economic well-being of the state.

(b) Delays in the permitting process can result in increased costs and hinder the timely delivery of critical public benefits such as water supply, flood risk reduction, energy reliability, and environmental protection and enhancement.

(c) Transparency in the permitting process is crucial for public understanding and confidence in the state's ability to advance large infrastructure projects for the public benefit.

SEC. 2. Section 65040.18 is added to the Government Code, to read:

65040.18. (a) For purposes of this section:

(1) "Covered project" means a publicly owned project for the development of infrastructure for water supply, flood risk reduction, energy reliability, or environment protection or enhancement with an estimated cost of one hundred million dollars ($100,000,000) or more.

(2) "Dashboard" means the permitting accountability transparency internet website created and maintained by the office pursuant to this section.

(3) "Permit" means a permit, agreement, certification, approval, authorization, permission, notice to proceed, or directive, or issuance of this document, from a state agency that is necessary for the project to proceed.

(4) "State agency" means the state agencies, boards, commissions, or departments with the authority to issue permits that would authorize the project or project-related work that are the following:

(A) Department of Fish and Wildlife.

(B) State Water Resources Control Board.

(C) The regional water quality control board for each of the regions described in Section 13200 of the Water Code.

(D) Department of Water Resources.

(E) State Energy Resources Conservation and Development Commission.

(b) The office shall create and maintain a permitting accountability transparency internet website on or before January 1, 2026, that is publicly accessible.

(c) The dashboard shall include a display for each permit to be issued by a state agency for all covered projects.

(d) The dashboard shall include, but not be limited to, information for each permit to be issued by a state agency that is required for the completion of the covered project, including all of the following:

(1) Permit application submission date.

(2) Date the permit application is deemed complete.

(3) The number of resubmittals required for the permit application to be deemed complete.

(4) Anticipated timeline for permit issuance.

(5) Date the permit application is approved or denied.

(e) The office shall periodically, but no less than once per calendar quarter, update the dashboard for each covered project to ensure accurate and timely information.

(f) Each state agency with a responsibility for issuing a permit for a covered project shall provide information in the appropriate time and manner as determined by the office.

O

AMENDED IN ASSEMBLY MARCH 21, 2024

CALIFORNIA LEGISLATURE—2023–24 REGULAR SESSION

ASSEMBLY BILL No. 3023

Introduced by Assembly Member Papan

February 16, 2024

An act to ~~amend Section 71450 of~~ *add Section 71454 to* the Public Resources Code, relating to environmental protection.

LEGISLATIVE COUNSEL'S DIGEST

AB 3023, as amended, Papan. Environmental protection: lands and coastal waters: conservation ~~goals.~~ *goals: 30x30 goal.*

By Executive Order No. N-82-20, Governor Gavin Newsom directed the Natural Resources Agency to combat the biodiversity and climate crises by, among other things, establishing the California Biodiversity Collaborative and conserving at least 30% of the state's lands and coastal waters by 2030, known as the 30x30 goal. Existing law requires the Natural Resources Agency, in implementing certain pathways and actions to achieve the 30x30 goal, to prioritize specified actions, including conducting public outreach to engage historically marginalized communities in the planning and implementation of the 30x30 goal. Existing law requires the Secretary of the Natural Resources Agency to prepare and submit, on or before March 31, 2024, and annually thereafter, a report to the Legislature on the progress made during the prior calendar year toward achieving the 30x30 goal, as provided.

This bill would require the Natural Resources Agency to post on its internet website the criteria used to determine whether or not to approve plans submitted in pursuit of reaching the 30x30 goal, as provided.

~~Existing law provides that it is the goal of the state to conserve at least 30% of California's lands and coastal waters by 2030.~~

~~This bill would make a nonsubstantive change to this provision.~~

Vote: majority. Appropriation: no. Fiscal committee: ~~no~~ *yes*. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 71454 is added to the Public Resources Code, to read:

71454. (a) (1) The Natural Resources Agency shall post on its internet website the criteria used to determine whether or not to approve plans submitted in pursuit of reaching the 30x30 goal.

(2) The specific criteria shall be posted for all zones and habitats within those zones.

(b) The Natural Resources Agency may instead require the 30x30 program administrator to post the criteria on the administrator's internet website pursuant to subdivision (a).

~~SECTION 1. Section 71450 of the Public Resources Code is amended to read:~~

~~71450. (a) For the purposes of this part, the following definitions apply:~~

~~(1) "30x30 goal" means the goal to conserve 30 percent of California's lands and coastal waters by 2030 established in subdivision (b) and by Executive Order No. N-82-20.~~

~~(2) "Pathways to 30x30 Report" means the report entitled "Pathways to 30x30 California: Accelerating Conservation of California's Nature" that was issued by the Natural Resources Agency on April 22, 2022.~~

~~(b) It is the goal of the state to conserve at least 30 percent of California's lands and coastal waters by the year 2030.~~

O

SENATE BILL No. 1324

Introduced by Senator Limón

February 16, 2024

An act to amend Section 36990 of the Public Resources Code, relating to ocean resources.

LEGISLATIVE COUNSEL'S DIGEST

SB 1324, as introduced, Limón. California Ocean Science Trust: agreements.

Existing law authorizes the Secretary of the Natural Resources Agency to enter into an agreement with an existing nonprofit corporation, as provided, to establish a nongovernmental trust to be known as the California Ocean Science Trust. Existing law specifies as one of the trust's purposes funding California ocean resource science projects that help fulfill the missions of the state's ocean resource management agencies. Existing law authorizes the trust to engage with scientific experts to develop and provide peer reviews, technical guidance, or scientific reports and analyses, as specified.

This bill would authorize an entity, as defined, within the Natural Resources Agency or the California Environmental Protection Agency to enter into a direct agreement with the trust for the delivery of peer reviews, technical guidance, or scientific reports and analyses pursuant to this provision.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 36990 of the Public Resources Code is amended to read:

36990. (a) The Secretary of the Natural Resources Agency may enter into an agreement with an existing nonprofit corporation with broad experience as the trustee of public funds, court-ordered mitigation funds, or other funds used to assist public agencies in carrying out their responsibilities to establish a nongovernmental trust, to be known as the California Ocean Science Trust.

(b) The purposes of the trust shall be all of the following:

(1) To seek funds for California ocean resource science projects, emphasizing the development of new funding sources.

(2) To fund California ocean resource science projects that help fulfill the missions of the state's ocean resource management agencies.

(3) To encourage coordinated, multiagency, multiinstitution approaches to ocean resource science to deliver actionable science solutions that accelerate equitable climate change adaptation.

(4) To encourage graduate education programs, training, and workforce development opportunities in management-oriented ocean resource science in public and private universities and colleges in California.

(5) To encourage new technologies that reduce the cost, increase the amount, or improve the quality of ocean resource management information.

(6) To promote more effective coordination of California ocean resource science useful to management agencies.

(c) The trust may administer grants and expenditures of the trust for purposes consistent with this chapter from private and public fund sources, including, but not limited to, direct appropriations from the annual Budget Act and block grants from other state agencies with relevant need for coordination and engagement with the trust.

(d) (1) For the purpose of developing and providing peer reviews, technical guidance, or scientific reports and analyses to state agencies and departments with relevant need, the trust may engage with scientific experts through convenings, including panels, workshops, or symposia, to gain knowledge, solutions, and recommendations for topics consistent with subdivision (b).

(2) As funding allows, the trust shall develop an annual list of topics, consistent with subdivision (b), that the trust will undertake to deliver the content pursuant to paragraph (1) to state agencies and departments.

(e) (1) An entity within the Natural Resources Agency or the California Environmental Protection Agency may enter into a direct agreement with the trust for the delivery of peer reviews, technical guidance, or scientific reports and analyses pursuant to subdivision (d).

(2) As used in this subdivision, "entity" includes, but is not limited to, a department, board, commission, or conservancy.

O

SENATE BILL No. 1402

Introduced by Senator Min

February 16, 2024

An act to amend Section 71450 of the Public Resources Code, relating to environmental protection.

LEGISLATIVE COUNSEL'S DIGEST

SB 1402, as introduced, Min. 30x30 goal: state agencies: adoption, revision, or establishment of plans, policies, and regulations.

By Executive Order No. N-82-20, Governor Gavin Newsom directed the Natural Resources Agency to combat the biodiversity and climate crises by, among other things, establishing the California Biodiversity Collaborative and conserving at least 30% of the state's lands and coastal waters by 2030. Existing law requires the Secretary of the Natural Resources Agency to prepare and submit, on or before March 31, 2024, and annually thereafter, a report to the Legislature on the progress made in the prior calendar year toward achieving the goal to conserve 30% of California's lands and coastal waters by 2030. Existing law provides that it is the goal of the state to conserve at least 30% of California's lands and coastal waters by 2030, known as the 30x30 goal.

This bill would require all state agencies, departments, boards, offices, commissions, and conservancies to consider the 30x30 goal when adopting, revising, or establishing plans, policies, and regulations.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. Section 71450 of the Public Resources Code is amended to read:

71450. (a) For the purposes of this part, the following definitions apply:

(1) "30x30 goal" means the goal to conserve 30 percent of California's lands and coastal waters by 2030 established in subdivision (b) and by Executive Order No. N-82-20.

(2) "Pathways to 30x30 Report" means the report entitled "Pathways to 30x30 California: Accelerating Conservation of California's Nature" that was issued by the Natural Resources Agency on April 22, 2022.

(b) It is the goal of the state to conserve at least 30 percent of California's lands and coastal waters by 2030.

(c) All state agencies, departments, boards, offices, commissions, and conservancies shall consider the 30x30 goal when adopting, revising, or establishing plans, policies, and regulations.

O

State Report Identifies Future Desalination Plants to Meet Statewide Water Reliability Goals

Published: Feb 21, 2024

As California continues to adapt to the impacts of a changing climate, the State must work to identify future sources of safe, reliable water for all. This week, the Department of Water Resources (DWR) released a report identifying future planned desalination projects to help meet the brackish water supply goals identified in California's Water Supply Strategy: Adapting to a Hotter, Drier Future.

As a key strategy in the Water Supply Strategy, desalination is the process of removing salts and minerals from brackish water an seawater to produce water suitable for drinking water, irrigation and other supply needs. Brackish water is a mix of freshwater an saltwater and occurs in a natural environment that has more salinity than freshwater, but not as much as seawater. In 2020, over 100,000 acre-feet of brackish water was desalinated for drinking water, which was two-thirds of the desalinated water produced and used in California.

One of the State's goals in the Water Supply Strategy is to increase its water supply by implementing new brackish desalination projects that would provide 28,000 acre-feet of water per year by 2030 and 84,000 acre-feet per year no later than 2040.

The Projected Brackish Water Desalination Projects in California report helps State water managers by identifying existing and projected brackish desalination projects to evaluate if the state can achieve the strategy's desalination goals by 2030 and 2040. The report only identifies desalination projects sourcing brackish groundwater and brackish surface water, not sea water. The report projects that the State will achieve the 2030 goal.

"From coastal cities to inland farms, desalination brings water security within reach for communities where traditional water supplies are limited," said DWR Director Karla Nemeth. "This is just one piece of the puzzle as we work to invest in strategies that help replenish and secure our state's water supply for future generations."

To support cost-effective projects in appropriate locations and to help address local and regional water supply challenges, DWR's Water Desalination Grant Program has awarded over $82 million in Proposition 1 desalination grants (ranging from over $100,000 to $10 million) to 20 projects statewide. Of the $82 million, $33 million was awarded to projects addressing brackish groundwater

DWR has also partnered with the U.S. Department of Energy's National Alliance for Water Innovation (NAWI) to fund research and pilot projects that reduce energy demand and costs for desalination projects. Led by the Lawrence Berkeley National Laboratory, the NAWI Alliance is converting unconventional water sources into secure, desalinated water supplies at a cost equivalent to othe available water sources.

A full list of desalination projects funded by DWR and more information on the Water Desalination Grant program are available or DWR's Water Desalination Grant webpage.

Projected Brackish Water Desalination Projects in California

Prepared to Comply with Water Supply Strategy Requirements

California's Water Supply Strategy: Adapting to a Hotter, Drier Future (Water Supply Strategy), adopted by the Newsom Administration in 2022, identifies multiple actions necessary to bolster water supply reliability in the face of climate change. The first set of actions drive the development of new water supplies and set explicit goals for expanding the production of both recycled and desalinated water. Action1.2 includes specific targets for expanded brackish water desalination: 28,000 acre-feet by 2030, and 84,000 acre-feet by 2040.

The Water Supply Strategy identifies five steps toward achieving this goal. This document addresses the first implementation step under the action to expand brackish groundwater desalination production:

> *By January 1, 2024, the Department of Water Resources (DWR) and the State Water Board, in coordination with local agencies, will identify the brackish desalination projects that have the potential to be operational by 2030 and by no later than 2040. The State will consider investing in grants to local agencies for planning and building desalination projects.*

Also provided is a discussion of how these anticipated projects will contribute towards Action 1.2's specific brackish water production targets.

Information included in this document was compiled from 2020 urban water management plans (UWMPs) submitted to DWR and from direct communication with local water suppliers and operators. UWMPs provide the best estimate of future water supplies because UWMP preparers are required by state law to provide information on planned new water supply projects and reliability of water supplies under both normal and drought conditions. Only water suppliers supplying more than 3,000 acre-feet per year, or with

more than 3,000 service connections are required to submit UWMPs. That means smaller suppliers may not be providing information to DWR on future water projects or water supply reliability.

Desalinated Water Sources

In California, three general types of water sources are desalinated:

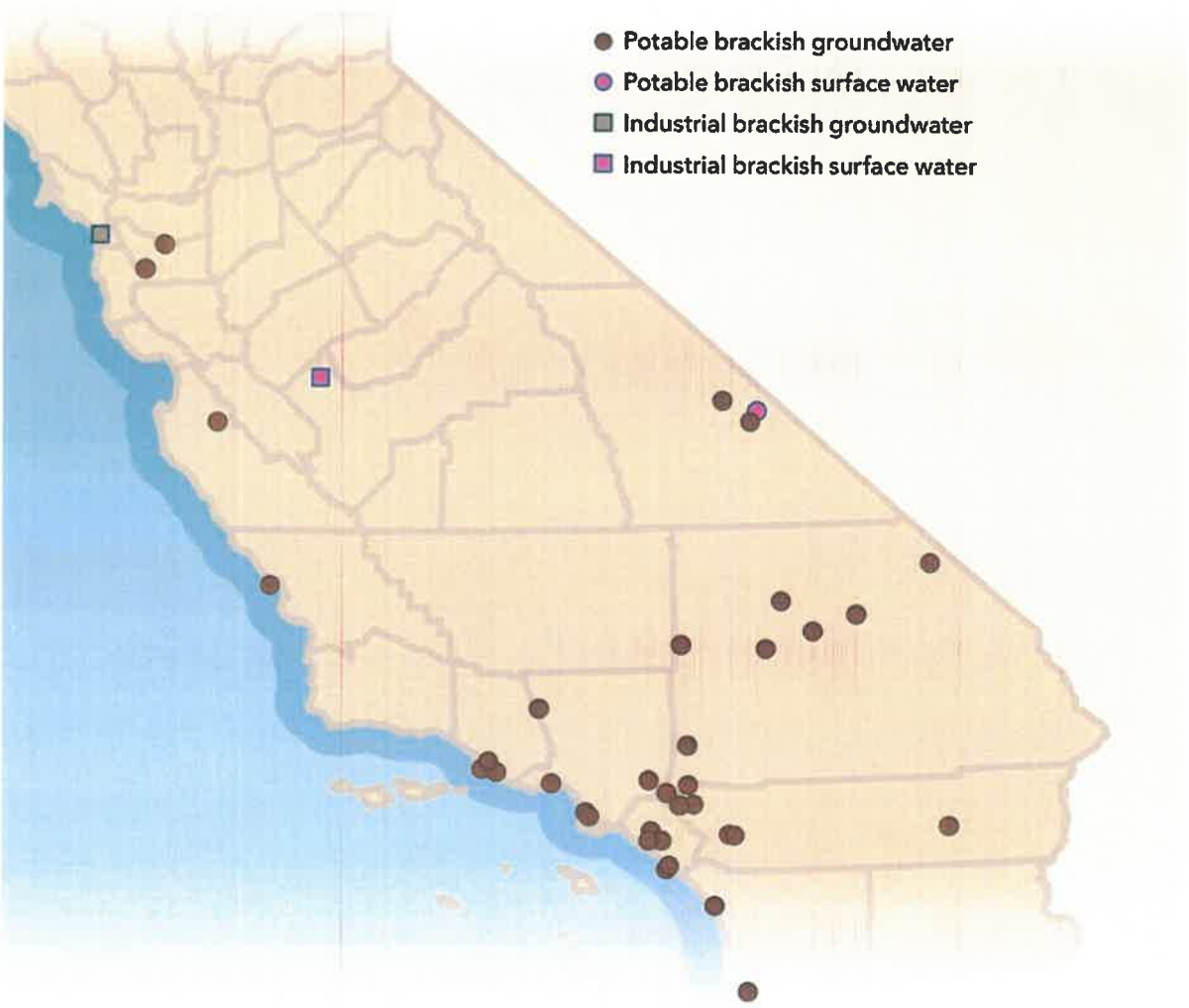
- Brackish groundwater.
- Brackish surface water.
- Sea water, which is saline surface water.

Brackish groundwater and sea water have been desalinated in California for several decades, whereas desalination of brackish surface water has only occurred at a small facility in Death Valley. Two additional communities are adding desalination treatment to address increasing salinity in inland surface water supplies. In 2021, the city of Fort Bragg began desalinating water from its Noyo River intake because of seawater intrusion during high tide. In 2025, the city of Antioch will begin desalinating water from its San Joaquin River intake because of increasing saline bay water intrusion. Other communities are known to be considering future desalination of brackish surface water to augment or replace existing vulnerable supplies.

Existing Brackish Desalination Facilities

Figure 1 shows the locations of existing brackish water desalination facilities, distinguished by water source (groundwater or surface water) and use (municipal or industrial).

Figure 1 2020 California Brackish Desalination Facilities



Key findings from the inventory of existing brackish desalination facilities:

- Brackish groundwater is the source water for two-thirds of California's desalinated water. In 2020, 106,000 acre-feet of brackish groundwater and less than 100 acre-feet of brackish surface water were desalinated for potable supply.
- Desalination occurs in a wide range of coastal and inland locations, including urban areas, desert communities without reliable fresh water supplies with access to brackish or saline supplies, and island communities.

- Desalinated water supplies are effectively supporting communities as a water supply portfolio component. It is a resilient baseline supply that enables suppliers to manage other variable supplies.
- There are two existing industrial facilities desalinating brackish water.

Future Brackish Desalination in California and the Water Supply Strategy Goals

Table 1 summarizes the production capacity of brackish desalination projects planned to be online between 2021 and 2030, and then between 2031 and 2040. These projects are individually identified in Table 2, grouped by source water type. The locations of these projects are shown in Figure 2. In addition to these projects, DWR is tracking others that are in early planning phases and may ultimately contribute to meeting the 2040 production goal. DWR will continue to track the status of these projects and update the tables, as needed.

Table 1 Estimate of Annual Increase in Brackish Water Desalination Capacity Compared to Water Supply Strategy Goals

Category	Water Supply Strategy: Goal for Annual Brackish Water Production Increase	Brackish Groundwater	Brackish Surface Water
Actual 2020 Production (acre-feet)	-	106,000	Less than 100
Planned Capacity Increase by 2030 (acre-feet per year)	28,000	39,600	3,000
Planned Capacity Increase by 2040 (acre-feet per year)	84,000	500	-

State Funding and Innovation

DWR has managed funds from Proposition 50 (2002, $50 million) and Proposition 1 (2014, $100 million) to support a wide range of desalination activities. These local assistance programs supported four local brackish water desalination facilities that are either operating, under construction, or in the permitting process. These are:

- City of Torrance Goldsworthy Desalter Expansion (brackish groundwater).
- City of Camarillo North Pleasant Valley Desalter (brackish groundwater).
- City of Antioch Brackish Water Desalination Project (brackish surface water).
- City of Santa Monica Brackish Desalter Production Efficiency Enhancement (brackish groundwater).

DWR is also leading State engagement with the National Alliance for Water Innovation (NAWI) run by Lawrence Berkeley National Laboratory and primarily funded by the U.S. Department of Energy. NAWI's primary objective is to develop new technologies that reduce the financial and environmental costs of desalination. Through this effort, the State is actively supporting research to identify methods to improve efficiency, reduce energy consumption, and improve brine management options — each of which are challenges to increasing desalination opportunities.

Table 2 Planned Brackish Desalination Projects Expected to be Online by 2040

Agency	Facility	County	Planned Year	Source Water	Planned Capacity (af/yr)	2023 Status
The Ranch at Live Oak	Desalination Facility	Ventura	2021	GW	-	Operating. Restart of existing facility.
City of Camarillo	North Pleasant Valley Groundwater Desalter	Ventura	2022	GW	3,877	Operating
Ventura County Waterworks District No. 1	Moorpark Groundwater Desalter	Ventura	2030	GW	5,000	Project dependent on extension of existing brine line.
City of Thousand Oaks	Los Robles Desalter	Ventura	2025	GW	500	Planned
United Water Conservation District	Point Mugu	Ventura	2030	GW	5,000	Treatment will begin in Phase II of the project
City of Beverly Hills	Beverly Hills Desalter	Los Angeles	2022	GW	2,952 to 3,327	Operating. Restart of existing facility. Expansion in 2030.
Water Replenishment District	Regional Brackish Water Reclamation Program	Los Angeles	2027	GW	10,000	Planned expansion of the existing Goldsworthy Desalter.
Eastern Municipal Water District	Perris II Desalter	Riverside	2022	GW	5,400	Operating
Naval Facilities Command	Twentynine Palms Treatment and Blending Facility	San Bernardino	2022	GW	3,363	Operating
Rainbow Municipal Water District	Rainbow MWD Desalination Facility	San Diego	2030	GW	2,000	Planned

Agency	Facility	County	Planned Year	Source Water	Planned Capacity (af/yr)	2023 Status
Olivenhain Municipal Water District	San Dieguito Basin Desalter	San Diego	2028	GW	1,120	Planned
Otay Water District	Rancho Del Rey Groundwater Well Project (Desalination)	San Diego	2035	GW	500	Planned
City of Fort Bragg	Fort Bragg	Mendocino	2022	BSW	2	Operating
City of Antioch	Antioch	Contra Costa	2025	BSW	3,000	In construction

Table 2 Notes: af/yr = acre-feet per year, BSW = brackish surface water, GW = groundwater

Figure 2 Planned Brackish Desalination Projects Expected to be Online by 2040

STATE WATER RESOURCES CONTROL BOARD
WATER SUPPLY STRATEGY IMPLEMENTATION
WATER AVAILABLE FOR BRACKISH GROUNDWATER DESALINATION

Background

The Water Supply Strategy requires the State Water Board, by January 1, 2024, to review groundwater basins impaired by salts and nutrients and determine the volume of water available for brackish groundwater desalination. State Water Board staff (staff) coordinated with Department of Water Resources staff to identify nine planned brackish groundwater desalination facilities that could provide an estimated 20,000 acre-feet of potable water by 2040. Staff completed a review of salt and nutrient management plans (SNMPs) and coordinated with the United States Geologic Survey (USGS) to identify existing data sources and data gaps to evaluate the additional volume of water available for brackish groundwater desalination. Additionally, staff identified areas in California with the highest potential for brackish groundwater desalination projects, potential impediments to bringing brackish groundwater desalination online, and recommendations for next steps.

Deliverable: Groundwater basins with the highest potential for brackish groundwater desalination projects.

Attachment 1 shows a map of existing brackish groundwater desalination projects, projects scheduled to be operational by 2040, and groundwater basins identified as having potential for brackish groundwater desalination. **Attachment 2** includes a table of groundwater basins in each region with at least ten percent of their extraction wells having salinity over 1,000 mg/L total dissolved solids (TDS), which was used as an initial indication of potential for a brackish groundwater desalination project.

The highest potential for brackish groundwater desalination exists in coastal groundwater basins with access to existing infrastructure for brine disposal and where the extraction is consistent with the local Groundwater Sustainability Plan. Groundwater Sustainability Plans may preclude brackish groundwater desalination where the extraction causes undesirable results such as exacerbating aquifer draw-down or seawater intrusion. Basins or subbasins already impacted by seawater intrusion may be strong candidates for brackish groundwater desalination and warrant further evaluation. Staff was not able to estimate the total volume available for brackish groundwater desalination in California because of limitations of information in available datasets, like pumping rates, aquifer sources, etc. However, this analysis can serve as a starting point to locate areas for further site-specific analyses such as feasibility evaluations, groundwater quality assessments, and modeling, to evaluate volumetric potential for brackish groundwater desalination projects.

Methodology

State Water Board staff analyzed data from the SNMPs and the Groundwater Ambient Monitoring and Assessment Program's Groundwater Information System (GAMA GIS) to identify basins and sub-basins with salinity concentrations above a brackish water threshold of 1,000 mg/L TDS. Staff excluded data from wells identified for regulatory

cleanup and monitoring purposes because these wells are often very shallow and do not reflect the conditions of the groundwater aquifers used for drinking, irrigation, industrial, or other beneficial uses. Staff also verified the data with the regional water quality control boards (regional water boards) and used airborne electromagnetic survey data collected by the Department of Water Resources.

These data were used to develop a map of groundwater basins and sub-basins that may hold the potential for future brackish groundwater desalination projects (Attachment 1). Attachment 1 also includes the existing brackish groundwater desalination projects and projects planned to be operational by 2040, as well as the locations of known seawater intrusion barrier projects. The table in Attachment 2 lists these eighty-four basins and subbasins including number of wells available, the number of wells above 1,000 mg/L TDS, and the percentage of wells above this threshold. Although the data that are currently available were insufficient to estimate the volume of brackish groundwater available for desalination, staff identified research needs and next steps provided in the recommendations below. These recommendations also include considerations and challenges to the desalination of groundwater.

Opportunities for Brackish Groundwater Desalination in Coastal Basins

- Brackish groundwater is less saline than seawater, ranging from 1,000 to 10,000 mg/L in TDS compared with 35,000 mg/L for seawater. Consequently, when compared to seawater desalination, brackish water desalination requires less treatment, reducing energy requirements, costs, construction impacts, and brine concentration and volume to treat the water to drinking water standards.
- In addition to augmenting drinking water, brackish groundwater can be desalinated for other purposes that may require less treatment, including for cooling during power generation, irrigation, livestock watering, aquaculture, and in the oil and gas industry for drilling, enhanced recovery, and hydraulic fracturing to reduce the use of conventional water supplies in situations for which it is not required (https://pubs.usgs.gov/fs/2018/3010/fs20183010_.pdf).
- Shallow brackish groundwater can be extracted using conventional vertical well drilling technologies, which are more feasible and less expensive to implement than some seawater desalination intake technologies. .
- Optimizing existing water infrastructure for brine management can further reduce costs to be more competitive with other potential water supply sources, although costs remain high relative to some water supplies. The Pacific Institute estimates brackish groundwater desalination facilities cost between $840-$1,700 per acre foot, relative to $1,900-$4,100 for seawater desalination facilities or $550-$2,200 for recycled water facilities.

Challenges to Developing Brackish Groundwater Desalination

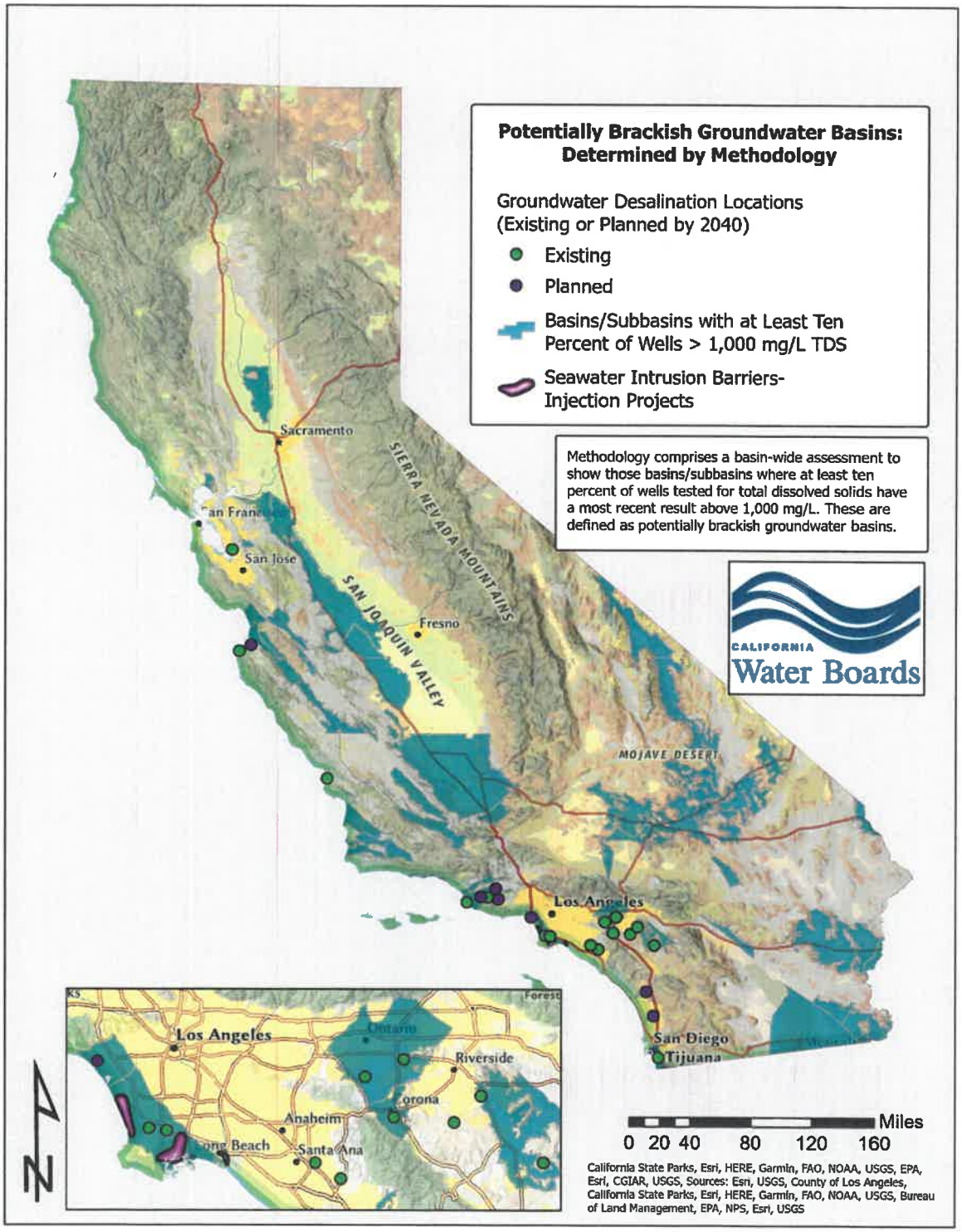
- Project-specific modeling of local or regional aquifer impacts from extraction is needed to ensure projects do not degrade water quality due to mobilization of potential contaminants or exacerbate seawater intrusion or subsidence in vulnerable basins.

- Projects must be sized for the amount of groundwater that a particular aquifer can provide. Porous aquifers, such as those in a sand or gravel matrix, may allow more water to flow more freely than those aquifers comprising hard rock. Site-specific evaluations will be needed to assess the extractive potential for each basin.
- Brackish groundwater in adjudicated basins and basins with Groundwater Sustainability Plans under the Sustainable Groundwater Management Act (SGMA) must be extracted consistent with the adjudication or Plan, which may limit the volumes of brackish groundwater potentially available for desalination.
- Some chemical constituents may be found in brackish groundwater at high concentrations requiring additional treatment depending on use. Even naturally occurring compounds may render the groundwater unsuitable for certain uses. Project-specific groundwater quality assessments can ensure the extracted brackish groundwater is appropriate for a particular use.
- Appropriate brine management options and proximity to distribution systems are often limiting factors for otherwise feasible projects, particularly for inland areas. Projects closer to the coast with access to existing brine disposal mechanisms and existing distribution systems have a higher likelihood of success.

Recommendations

1. **Conduct Site Specific Evaluations:** Water purveyors considering brackish groundwater desalination should conduct local basin feasibility assessments to assess potential for desalinating brackish groundwater. Local evaluations should consider factors that affect the implementation of brackish groundwater desalination including availability of lower cost alternatives, funding need, affordability, environmental justice issues, local hydrogeologic conditions, extractive potential, proximate water users, treatment requirements, permitting considerations, energy use, and brine disposal options.
2. **Improve Coordination:** Continued coordination among groundwater sustainability agencies (under SGMA), SNMP groups, drinking water purveyors, urban water management plan developers, and other relevant programs is needed to (1) identify areas where there is overlap between the need for potable water and opportunities to meet the need through brackish groundwater desalination, and (2) identify potential impediments and solutions to bring projects online in an environmentally responsible manner.
3. **Increase Groundwater Quality Data:** Augment the collection and submission of groundwater quality information to the GAMA GIS to expand the knowledge of areas where brackish groundwater can be suitable to augment water supplies (most current data are collected to monitor groundwater for safe drinking water purposes, so data gaps exist in areas where groundwater is brackish and not suitable for drinking). Filling data gaps could be accomplished by expanding studies within the GAMA Program to analyze and identify areas of brackish groundwater statewide and/or enhance understanding of aquifer volume in these areas, if funds become available in future.

Attachment 1: Existing and Planned Brackish Desalination Facilities and Groundwater Basins/Subbasins with Brackish Groundwater to Further Investigate for Future Brackish Desalination Facilities



Attachment 2: Groundwater Basins/Subbasins with Brackish Groundwater by Regional Water Board to Further Investigate for Future Brackish Desalination Facilities

North Coast Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
1-061	1-061	Fort Ross Terrace Deposits	Fort Ross Terrace Deposits	1	5	20%

San Fransico Bay Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
2-011	2-011	Sunol Valley	Sunol Valley	1	1	100%
2-004	2-004	Pittsburg Plain	Pittsburg Plain	3	9	33.3%
2-002	2-002.03	Napa-Sonoma Valley	Napa-Sonoma Valley - Napa-Sonoma Lowlands	2	12	16.7%

Central Coast Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
3-013	3-013	Cuyama Valley	Cuyama Valley	89	103	86.4%
3-030	3-030	Bitter Water Valley	Bitter Water Valley	1	2	50%
3-005	3-005	Cholame Valley	Cholame Valley	4	8	50%
3-003	3-003.05	Gilroy-Hollister Valley	Gilroy-Hollister Valley - North San Benito	258	617	41.8%
3-015	3-015	Santa Ynez River Valley	Santa Ynez River Valley	227	563	40.3%
3-012	3-012.02	Santa Maria River Valley	Santa Maria River Valley - Arroyo Grande	26	66	39.4%
3-012	3-012.01	Santa Maria River Valley	Santa Maria River Valley - Santa Maria	390	1045	37.3%
3-049	3-049	Montecito	Montecito	7	19	36.8%
3-053	3-053	Foothill	Foothill	4	11	36.4%

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
3-004	3-004.05	Salinas Valley	Salinas Valley - Upper Valley Aquifer	108	311	34.7%
3-016	3-016	Goleta	Goleta	10	30	33.3%
3-017	3-017	Santa Barbara	Santa Barbara	14	46	30.4%
3-004	3-004.04	Salinas Valley	Salinas Valley - Forebay Aquifer	172	649	26.5%
3-019	3-019	Carrizo Plain	Carrizo Plain	2	8	25%
3-052	3-052	Needle Rock Point	Needle Rock Point	1	4	25%
3-041	3-041	Morro Valley	Morro Valley	6	28	21.4%
3-044	3-044	Pozo Valley	Pozo Valley	1	5	20%
3-004	3-004.01	Salinas Valley	Salinas Valley - 180/400 Foot Aquifer	127	698	18.2%
3-028	3-028	San Benito River Valley	San Benito River Valley	3	17	17.6%
3-004	3-004.08	Salinas Valley	Salinas Valley - Seaside	5	35	14.3%
3-009	3-009	San Luis Obispo Valley	San Luis Obispo Valley	20	142	14.1%
3-014	3-014	San Antonio Creek Valley	San Antonio Creek Valley	21	166	12.7%
3-002	3-002.01	Corralitos	Corralitos - Pajaro Valley	123	1055	11.7%
3-018	3-018	Carpinteria	Carpinteria	10	89	11.2%
3-004	3-004.02	Salinas Valley	Salinas Valley - East Side Aquifer	50	464	10.8%
3-042	3-042	Chorro Valley	Chorro Valley	1	10	10%

Los Angeles Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
4-016	4-016	Hidden Valley	Hidden Valley	2	2	100%
4-009	4-009	Simi Valley	Simi Valley	4	4	100%
4-004	4-004.03	Santa Clara River Valley	Santa Clara River Valley - Mound	2	3	66.7%
4-004	4-004.04	Santa Clara River Valley	Santa Clara River Valley - Santa Paula	9	16	56.3%
4-004	4-004.05	Santa Clara River Valley	Santa Clara River Valley - Fillmore	9	18	50%

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
4-004	4-004.06	Santa Clara River Valley	Santa Clara River Valley - Piru	2	4	50%
4-004	4-004.02	Santa Clara River Valley	Santa Clara River Valley - Oxnard	41	83	49.4%
4-006	4-006	Pleasant Valley	Pleasant Valley	7	17	41.2%
5-022	5-022.07	San Joaquin Valley	San Joaquin Valley - Delta-Mendota	47	138	34.1%
4-011	4-011.03	Coastal Plain of Los Angeles	Coastal Plain of Los Angeles - West Coast	70	222	31.5%
4-011	4-011.01	Coastal Plain of Los Angeles	Coastal Plain of Los Angeles - Santa Monica	8	27	29.6%

Central Valley Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
5-021	5-021.62	Sacramento Valley	Sacramento Valley - Sutter	8	44	18.2%
4-008	4-008	Las Posas Valley	Las Posas Valley	5	36	13.9%
5-023	5-023	Panoche Valley	Panoche Valley	1	1	100%
5-022	5-022.17	San Joaquin Valley	San Joaquin Valley - Kettleman Plain	2	2	100%
5-083	5-083	Cuddy Ranch Area	Cuddy Ranch Area	5	8	62.5%
5-022	5-022.09	San Joaquin Valley	San Joaquin Valley - Westside	17	30	56.7%
5-022	5-022.14	San Joaquin Valley	San Joaquin Valley - Kern County	280	851	32.9%
5-022	5-022.15	San Joaquin Valley	San Joaquin Valley - Tracy	11	61	18%
5-022	5-022.19	San Joaquin Valley	San Joaquin Valley - East Contra Costa	10	58	17.2%
5-022	5-022.18	San Joaquin Valley	San Joaquin Valley - White Wolf	1	8	12.5%

Lahontan Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
6-037	6-037	Coyote Lake Valley	Coyote Lake Valley	1	1	100%
6-035	6-035	Cronise Valley	Cronise Valley	5	6	83.3%
6-032	6-032	Broadwell Valley	Broadwell Valley	1	2	50%
6-018	6-018	Death Valley	Death Valley	2	4	50%
6-048	6-048	Goldstone Valley	Goldstone Valley	4	9	44.4%
6-038	6-038	Caves Canyon Valley	Caves Canyon Valley	2	5	40%
6-036	6-036.02	Langford Valley	Langford Valley - Irwin	7	23	30.4%
6-047	6-047	Harper Valley	Harper Valley	28	114	24.6%
6-036	6-036.01	Langford Valley	Langford Valley - Langford Well Lake	4	19	21.1%
6-024	6-024	Red Pass Valley	Red Pass Valley	1	5	20%
6-040	6-040	Lower Mojave River Valley	Lower Mojave River Valley	21	118	17.8%
6-022	6-022	Upper Kingston Valley	Upper Kingston Valley	1	6	16.7%
6-041	6-041	Middle Mojave River Valley	Middle Mojave River Valley	6	38	15.8%
6-033	6-033	Soda Lake Valley	Soda Lake Valley	1	7	14.3%
6-043	6-043	El Mirage Valley	El Mirage Valley	6	47	12.8%
6-025	6-025	Bicycle Valley	Bicycle Valley	3	28	10.7%

Colorado River basin

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
7-034	7-034	Amos Valley	Amos Valley	3	3	100%
7-038	7-038	Palo Verde Valley	Palo Verde Valley	10	13	76.9%
7-044	7-044	Needles Valley	Needles Valley	6	11	54.5%
7-036	7-036	Yuma Valley	Yuma Valley	3	6	50%
7-035	7-035	Ogilby Valley	Ogilby Valley	6	13	46.1%
7-039	7-039	Palo Verde Mesa	Palo Verde Mesa	5	12	41.7%
7-030	7-030	Imperial Valley	Imperial Valley	3	14	21.4%
7-021	7-021.03	Coachella Valley	Coachella Valley - Desert Hot Springs	2	10	20%
7-005	7-005	Chuckwalla Valley	Chuckwalla Valley	1	6	16.7%
7-013	7-013.01	Deadman Valley	Deadman Valley - Deadman Lake	1	10	10%

Santa Ana Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
8-005	8-005	San Jacinto	San Jacinto	27	111	24.3%
8-002	8-002.01	Upper Santa Ana Valley	Upper Santa Ana Valley - Chino	31	238	13%
8-002	8-002.09	Upper Santa Ana Valley	Upper Santa Ana Valley - Temescal	3	27	11.1%

San Diego Region

Basin Number	Subbasin Number	Basin Name	Subbasin Name	Wells with TDS >1,000 mg/L	Total Wells	Percent Brackish Wells
9-007	9-007.02	San Luis Rey Valley	San Luis Rey Valley - Lower San Luis Rey Valley	10	10	100%
9-033	9-033	Coastal Plain of San Diego	Coastal Plain of San Diego	39	50	78%
9-001	9-001	San Juan Valley	San Juan Valley	7	10	70%
9-015	9-015	San Diego River Valley	San Diego River Valley	4	8	50%

State of California Sea Level Rise Guidance: 2024 Science and Policy Update – Draft Released for Public Comment – Deadline Extended to March 8

OPC is pleased to release the **draft State of California Sea Level Rise Guidance: 2024 Science and Policy Update** (Guidance), which will update and replace the previous 2018 State of California Sea-Level Rise Guidance. This report consists of the best available science on sea level rise and coastal impacts with pragmatic and practical approaches for using this new scientific information in planning and decision-making.

Sea level rise and increased climate-driven flooding will continue to threaten public health and safety, critical infrastructure, coastal habitats, private property, and public access in California. To build resilience for coastal communities and ecosystems, thoughtful science-based planning and adaptation actions need to happen now. This Guidance, coupled with the recently launched **Senate Bill 1 Sea Level Rise Adaptation Grant Program** and $660 million maintained in the Governor's FY 24/25 Budget for critical coastal resilience programs and projects, will help prepare California for sea level rise.

Released for public review and comment, this Guidance is updated approximately every five years and includes updated projected sea level rise through 2150 and guidance to help state, tribal, local, and regional jurisdictions integrate this science into coastal adaptation projects, resilience planning, and investments.

Photo courtesy of California King Tides Project

Key takeaways from the updated science include:

- There is greater certainty and a narrowing range of the amount of sea level rise through 2050, with a statewide average of 0.8 ft of rise projected in the next 30 years.
- By 2100, statewide sea levels are expected to rise between 1.6 ft and 3.1 ft (Intermediate-Low to Intermediate Scenarios), and even higher amounts cannot be ruled out.

- Beyond 2100, the range of sea level rise becomes increasingly large due to uncertainties associated with physical processes, such as earlier-than-expected ice sheet loss and resulting future sea-level rise. By 2150, statewide sea levels may rise from 2.6 ft to 11.9 ft (Intermediate-Low to High Scenarios), although even higher amounts are possible.
- The extreme sea level rise scenario (i.e., H++) from Rising Seas 2017 is much higher than the best available science suggests and is not included in the 2024 update.
- Vertical land motion (uplift or subsidence) is the primary driver of local variations in sea level rise across the state. Vertical land motion is incorporated into the sea level scenarios for the 13 tide gauges along the coast and in San Francisco Bay, providing more locally specific information.
- Sea level rise, when combined with extreme storms and higher tides, will result in accelerated cliff and bluff erosion, coastal flooding and beach loss, and mobilization of subsurface contaminants.

The draft Guidance recommends a precautionary stepwise process for incorporating sea level rise scenarios into planning and projects that includes adaptation pathways to phase actions over time.

For most planning and projects, the Guidance recommends evaluating Intermediate, Intermediate-High, and High scenarios to assess a spectrum of potential impacts. Analysis of storm conditions is also recommended, as appropriate, to incorporate other drivers of coastal flooding. Selecting a sea level rise value for project or planning application will depend on local factors, but an approach that considers risk aversion is recommended.

The draft Guidance was developed by OPC, in partnership with the **California Ocean Science Trust** and a **scientific task force**. It was also informed by member agencies from the State Sea Level Rise Collaborative, including but not limited to, the Coastal Commission, State Land Commission, San Francisco Bay Conservation and Development Commission, Caltrans, State Parks, and the Department of Water Resources. It was also informed by early consultation with California Native American tribes, through listening sessions and formal government-to-government consultation.

Read the Draft Report

Questions?

For more information, please contact Justine Kimball, Senior Climate Change Program Manager at justine.kimball@resources.ca.gov.

Public Comment

OPC has **extended the deadline** for public comment on the **draft State of California Sea Level Rise Guidance: 2024 Science and Policy Update** (Guidance) to **Friday, March 8, 2024**, from the previous deadline of Monday, March 4, 2024.

Please email all public comments directly to OPC Sea Grant Fellow, Ben Dorfman, at **ben.dorfman@resources.ca.gov** with the subject line "Sea Level Rise Guidance – Public Comment".

OPC held a **public webinar on Monday, February 5**. (**View the webinar recording**) Additionally, **four virtual regional workshops** were held:

- **Central Coast: February 13, 2024**
- **North Coast: February 14, 2024**
- **South Coast: February 15, 2024**
- **San Francisco Bay Area: February 16, 2024**

These virtual regional workshops provided opportunities to discuss how the draft Guidance can be applied in regional contexts. In facilitated breakout sessions, participants had the opportunity to share a project or planning experience that

they expect to be influenced by the updated Guidance. By walking through real-world applications, participants discussed where the Guidance requires further clarification, specificity, or editing. These workshops aimed to ground truth the Guidance with regional sea level rise planning efforts.

Please check back to this page and subscribe to our **email newsletter** for updated information.

The final Guidance will be presented to the Ocean Protection Council for review and adoption at its **June 4, 2024 meeting.**

Categories: Public Comment Opportunity, Report Release, Sea-Level Rise, Strategic Goal 1: Climate Change

Who We Are

The Ocean Protection Council is a Cabinet-level state body that works jointly with state and federal agencies, NGOs, tribes and the public to ensure that California maintains healthy, resilient, and productive ocean and coastal ecosystems.

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