

# CLIMATE CHANGE <sup>TM</sup>

## LAW & POLICY REPORTER

### C O N T E N T S

#### CLIMATE CHANGE NEWS

- Great Lakes Beaches are Disappearing Due to Rising Water Levels . . . . . 183
- Scripps Institute Report Indicates Climate Change May Shift California Winds, Worsening Fire Risks . . . . . 184
- Report Finds that California Has a Long Way to Go to Meet Its Long-Term Greenhouse Gas Emissions Reduction Targets . . . . . 185
- California Desalination Project Continues to Face Opposition . . . . . 186
- One Nevada County Proposes the Novel Idea of Exporting Excess Floodwaters to the Parched Other Sections of the State . . . . . 188

#### CLIMATE CHANGE SCIENCE

- Recent Scientific Studies on Climate Change . . . . . 190

#### REGULATORY DEVELOPMENTS

- U.S. Bureau of Land Management Finds Negligible Risk to Water Resources Posed by Hydraulic Fracturing in Portions of California . . . . . 193

#### PENALTIES AND SANCTIONS

- Recent Investigations, Settlements, Penalties, and Sanctions . . . . . 195

#### LAWSUITS FILED OR PENDING

- U.S. Department of Justice Sues California to Stop International Trading of Emissions Credits . . . . . 197
- Alaskan Supreme Court Hears Oral Argument in Climate Change Case Alleging the State Government is Endangering the Public Welfare . . . . . 198

*Continued on next page*

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**JUDICIAL DEVELOPMENTS**

**Federal:**

**D.C. Circuit Rules Suit Against EPA Regarding Vehicle Emissions Standards Is Premature—Provides Guidance for Final Rulemaking . . . . . 200**  
*California by and Through Brown v. U.S. Environmental Protection Agency*, 940 F.3d 1342 (D.C. Cir. 2019).

**Ninth Circuit Rejects Claim that Approval of Industrial-Scale Wind Facility the Violated the APA, NEPA, and Bald and Golden Eagle Protection Act . . . . . 201**  
*Protect Our Communities Foundation v. Lacounte*, 939 F.3d 1029 (9th Cir. 2019).

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**CLIMATE CHANGE NEWS**

**GREAT LAKES BEACHES ARE DISAPPEARING DUE TO RISING WATER**

The waters of Lake Michigan are rising, removing beaches, encroaching on lakefront property, and exacerbating the weather for those living near the waterfront. Record-high water levels in the Great Lakes, as well as the bays and rivers connected to them, have caused beaches and shorelines to disappear all over the state of Michigan during the summer. The effects of rising water levels have reduced beach access in 37 state parks, not to mention the effects on residents and tourists.

**Background**

A combination of steady rain and Lake Michigan’s rising tides with high winds recently resulted in floods in Manistee, Michigan and closure of portions of Lake Shore Drive in Chicago. Lake Erie’s high levels have caused flooding that has endangered roads on Pelee Island, a Canadian island south of Windsor. Although water levels have receded in recent weeks, projected fall and winter storms are likely to mean more coastal flooding, erosion, ice floes and ice jams that could create havoc for those living or working near the lakes.

**Year-Round Issues**

While the summer season is impacted when rising water levels remove access to popular beaches, the effects of rising levels in the Great Lakes are truly year round. When the lakes freeze over in winter, ice jams can clog channels and impede water flows, creating significant flooding. The receding beaches make lakefront living far riskier, and can result in ice buildup against sea walls and harmful storms which can damage those homes.

Officials from the U.S. Army Corps of Engineers, which tracks lake levels and forecasts them at least six months in advance, predict a high probability stemming from more rain and high winds. The Great Lakes Basin experienced its wettest 60-month period (ending August 31, 2019) in 120 years of record-keeping. Even as waters recede, they are projected to remain well above average over the next six months.

And fall and winter storms tend to create further coastal erosion and coastal flooding, exacerbating issues.

The record lake levels have caused \$550,000 in emergency repairs in Michigan’s Porcupine Mountains in the state’s Upper Peninsula along the Lake Superior shoreline. In October, a combination of high lake levels and wind-driven waves swept away up to 20 feet of dunes along the Lake Michigan shoreline. Lakes Erie and Superior have set or tied all-time monthly records for the past four months, and the level for lakes Michigan and Huron is a foot higher than last year without touching records. Lake St. Clair has set all-time monthly highs for four consecutive months.

Last spring, elevated waters lifted cement docks off their pilings at Luna Pier Harbor Club in Monroe County off Lake Erie, causing \$20,000 in damage. Increased ice floes also threaten flooding along the shorelines.

State Parks are not just losing beaches, either. McLain State Park off Lake Superior had to be rebuilt for \$4.1 million after five years of constant erosion. Others are facing reductions in land area or even complete disappearance if present trends continue.

**Conclusion and Implications**

Rising water-levels are a problem for coastal communities world-wide. Much attention is focused on beachfront properties along the coast in California, New Orleans, or Florida. But the same basic risks face populations living along the Great Lakes, and can impact large swaths of the Midwest in years to come. These issues are not simply a problem for residents with coastal property, but can create massive damage to infrastructure and natural resources, cause flooding, exacerbate winter storms, and result in colder winters near lake fronts. The year-round effects of climate change are worsening, and projections for further record-breaking lake levels indicate these issues are not likely to recede in years to come. (Jordan Ferguson)

## SCRIPPS INSTITUTE REPORT INDICATES CLIMATE CHANGE MAY SHIFT CALIFORNIA WINDS, WORSENING FIRE RISKS

The hot, dry gusts that plague California in the fall are not a new phenomenon. Known as the Santa Anas in southern California and the Diablos in northern California, they have been part of life in the state for centuries. Yet recent research suggests that as the climate warms, these winds may become less frequent, especially at the edges of their traditional October through April season. This change may shift wildfire season in the region from fall into winter, creating longer and more intense fires later in the year.

### Background

New research by Dr. Janin Guzman-Morales at the Scripps Institute of Oceanography at the University of California, San Diego supports the idea that the warming climate may reduce the frequency of the Santa Ana and Diablo winds. Alongside changes in patterns and frequency of precipitation that are also anticipated due to climate change, this suggests a longer and more intense fire season, with the worst fires potentially occurring during drier winters.

Currently, most of California's worst wildfires occur in the fall, when vegetation is driest and winds start to pick up. The Santa Anas originate east of California, in the Great Basin and the high desert which includes Nevada and the western half of Utah. Cold and dry high-pressure air systems develop over the basin and circulate clockwise. The air spills into California and, because it is denser than warmer air, it descends and becomes compressed, warming significantly.

What begins as cold, dry, slow-moving air descends and gains in pressure until it becomes warm, drier, fast-moving air that can travel at speeds approaching 100 miles an hour and can pull moisture from already-dry shrubs and trees. This creates drier brush which can turn even the smallest bit of burning vegetation into a full-blown wildfire.

### Efforts to Monitor

Because the path of Santa Ana winds are well known, they can generally be forecast. The Santa Anas in the fall are generally given the most attention, because they create a high risk of fires. Yet Santa

Anas are actually more active during wet winter months. In the research published by Dr. Guzman-Morales, a variety of climate models are analyzed to determine the potential effects on the winds. While they determined that global warming will weaken the high-pressure systems over the Great Basin and decrease the frequency of Santa Ana events, that decrease is unlikely to be uniform. Rather, the winter months are projected to still see significant Santa Ana activity, with the decreases concentrated closer to October on one end and April on the other. A shorter season may result, but significant Santa Ana activity is still anticipated.

### Effects on Fire Season

Prominently, this shift in the season would likely mean a later wildfire season, as independent studies have shown that precipitation patterns in California will shift with warming, leading to rains coming later in the season. This could mean, for example, a strong Santa Ana event could occur in a drier December, which would drastically increase the risk of a later fire season.

The closest example to this projection is already history: in 2017, winter winds came late, and December remained relatively dry. Santa Ana winds fueled the Thomas fire in Ventura and Santa Barbara counties, which began on December 4 and burned for over a month. This is something of an anomaly in the history of California fires, but if these projections are realized, it could become the norm.

### Conclusion and Implications

Fires have been worsening in California over the last several years, growing in number and severity. The possibility of pushing fire season into the winter months could have catastrophic effects on large portions of the state, which are already facing increased evacuation orders, higher property insurance costs, and a lowered sense of safety and security. Fires cost California billions, and those costs are not anticipated to decrease if global warming trends continue at their current projections.  
(Jordan Ferguson)

## REPORT FINDS THAT CALIFORNIA HAS A LONG WAY TO GO TO MEET ITS LONG-TERM GREENHOUSE GAS EMISSIONS REDUCTION TARGETS

Last year, we wrote about an annual report issued by Next 10, an Oakland-based independent, non-partisan think tank, entitled “2018 California Green Innovation Index” (2018 Report). The annual report, first published in 2009, tracks the economic and environmental impact of 2006’s AB 32, California’s landmark legislation requiring a reduction in statewide greenhouse gas (GHG) emissions to 1990 levels by 2020, and also analyzes additional reduction targets set for 2030 and 2050. The 2018 Report included a conclusion that California had higher GHG emissions reductions than the United States as a whole while also achieving greater economic output.

Next 10 has now issued the 11th edition of its report—the “2019 California Green Innovation Index” (2019 Report). The 2019 Report concludes that although California is on target to meet its statewide GHG reduction goals in the short-term, meeting its 2030 and 2050 targets could happen 30 to 100 years after the target dates.

### California’s Short and Long-term GHG Emissions Reduction Targets

In 2018, the California Air Resources Board (CARB) announced that California had met its short-term 2020 target early, with the 2016 Greenhouse Gas Emissions showing that California GHG emissions were less in 2016 than in 1990. The 2019 Report concludes that if California’s current rate of GHG emissions reductions continues on its current trajectory, California will reach its 2030 goals in 2061 and its 2050 goals in 2157.

2019 Report’s Challenges and Innovation Discussion

According to F. Noel Perry, Next 10’s founder, the 2019 Report:

...serves as a wake-up call—we’re going to need major policy breakthroughs and deep structural changes if we’re going to deliver the much steeper emissions reductions required in the years ahead.

Next 10 notes that since 2000, the industrial, residential, and transportation sectors have only seen small GHG emissions declines, while California’s commercial sector has seen a GHG emissions increase of more than 64 percent.

The 2019 Report includes detailed information on a number of critical GHG emissions subjects, including the following:

- **Transportation**—The 2019 Report notes that transportation has long been California’s largest energy-consuming and GHG-emitting sector in California. Despite several state programs aimed at reducing the transportation sector’s impacts, emissions from on-road passenger vehicles have ticked up continuously since 2013. The 2019 Report opines that the state faces many challenges, including: increasing car ownership rates, declining public transit usage, and shifting consumer preferences from more fuel-efficient sedans and compact cars to pickup trucks and SUVs.

- **Energy Efficiency**—The 2019 Report discusses California’s long history of leading on energy efficiency, highlighting a reduction in per capita energy consumption since 1990 by 10.2 percent and a track record of keeping its per capita electricity consumption essentially flat over the last 40 years. Total energy consumption and per capita energy consumption, however, increased in California from 2015 to 2016 (largely due to increased energy usage in the transportation sector).

- **Renewable Energy**—The 2019 Report highlights California’s 2018 announcement of its goal of obtaining 100 percent of the state’s electricity from zero-carbon energy sources by 2045. According to the 2019 Report, California is well on its way to meeting that goal with 2017 marking the first time that a greater share of California’s power mix came from renewable sources than it did from fossil fuel sources.

- **Clean Tech Innovation**—The 2019 Report notes that California has demonstrated and maintained



a leadership in clean tech innovation. According to the 2019 Report, California remains a home to some of the world's top clean tech companies, particularly in the renewable energy and transportation sectors, and venture capital investment is increasing in the energy, efficiency and transportation sectors.

• **Economy**—Building on a conclusion set forth in the 2018 Report, the 2019 Report also includes information showing that California's economic

growth need not be compromised in order to reduce GHG emissions.

### Conclusion and Implications

The 2019 Report may be one of the first scientific reports to sound the bell regarding the challenges California faces to reach its long-term GHG emissions reduction targets. It will be interesting to see if this 2019 Report sparks changes in policy at the state level. For more information, see: <https://www.next10.org/publications/2019-gii>. (Kathryn Casey)

## CALIFORNIA DESALINATION PROJECT CONTINUES TO FACE OPPOSITION

California American Water (Cal Am), a private investor-owned utility that provides water and wastewater services to over 600,000 customers in the Monterey area, has been moving forward with plans for a desalination plant project (Desal Project) to be constructed near the Monterey One Water Regional Treatment Plant. Cal Am conceived the Desal Project as a response to current and anticipated supply challenges facing the company. Though Cal Am has been steadily working to obtain the requisite approvals and commence construction, the Desal Project has faced ongoing opposition, primarily as a result of the project's expected costs and environmental impacts.

### The Cal Am Desalination Project

The Desal Project largely arose as a response to a State Water Resources Control Board cease and desist order limiting Cal Am's pumping from the Carmel River, with restrictions expected to take full effect by December 31, 2021. As contemplated, the project involves drawing seawater through the ocean floor using subsurface slant wells constructed near the tide line north of the city of Marina, which would then be sent to the new 6.4 million gpd desalination plant for treatment. A new pipeline was previously built in order to transmit the seawater from the wells to the plant.

The Desal Project is among three primary components included in the broader Cal Am initiative known as the Monterey Peninsula Water Supply Proj-

ect (Water Supply Project), and is expected to cost a total of \$329 million over 30 years, according to Cal Am. Notwithstanding Cal Am's particular supply pressures, the company has characterized the Water Supply Project as a groundbreaking step toward the development of a sustainable water supply for the Monterey Peninsula.

### Critics Cite Environmental and Economic Concerns

Primary criticisms levied against the Desal Project involve anticipated environmental impacts as well as anticipated costs associated with the project. Environmental opponents claim that instead of seawater, the slant wells for the Desal Project will draw freshwater from a nearby aquifer that is recharging and protecting the Salinas Valley Groundwater Basin (Basin) against seawater intrusion. They argue that the Desal Project would contaminate and result in further depletion of the Basin, already been deemed to be in a state of critical overdraft by the Department of Water Resources. Cal Am asserts that monitoring wells will allow the company to closely observe the situation during operation and quickly respond by shutting down the slant wells should any seawater intrusion occur.

Substantial opposition to the Desal Project has also been based on expected short and long term economic impacts, as desalination remains one of the costlier solutions to water supply challenges generally. Some

argue that the Desal Project could end up costing almost four times the \$329 million Cal Am projects, based on previous information disclosed by Cal Am in connection with prior permit approvals, claiming that the \$329 million figure cited by Cal Am represents only the capital cost of constructing the plant. Whatever the total cost, it is ultimately expected to be passed on in large part to consumers in Cal Am water bills, which Cal Am estimates could rise by about 50 percent on average. Local officials have also suggested that costs of remediating any seawater intrusion into the Basin caused by the Desal Project would be disproportionately borne by residents in lower-income areas, to the benefit of residents in more affluent areas serviced by Cal Am.

Some opponents believe that options for extensively treating recycled water for potable represents a much more cost-effective alternative solution to the region's water supply needs. This could include the expansion of Cal Am's Pure Water Monterey program, another component of the Cal Am Water Supply Project. While an expansion of the Pure Water Monterey program is being pursued in conjunction with the Desal Project, that program faces obstacles of its own in obtaining approvals and otherwise moving ahead to generate water production within the timeframe Cal Am had anticipated.

### **Challenges to the Project and Recent Setbacks**

The Marina Coast Water District (District) has taken the lead in several notable efforts to block the Desal Project, including the August 2019 filing of a lawsuit in Monterey County Superior Court to enjoin construction on the project, due to the alleged inadequacy of the California Environmental Quality Act (CEQA) review on which the County of Monterey's (County) board of supervisors relied in approving a key use permit for the project that enabled construction to commence. Specifically, the District argues that the environmental studies did not account for newly available information that substantially supports the position that the project could negatively impact the Basin on a much larger scale than previously believed, so further review needs to be conducted under CEQA. The District also alleges that the County's approval of the permit violated zoning

laws and the Water Code because the District did not demonstrate that it had obtained the requisite water rights for purposes of the County use permit. The District's recent action is the ninth lawsuit brought against the Desal Project, and the fifth brought by the District.

While Cal Am has been successful in fending off legal and administrative challenges to date, recent complications and delays arising out of the District's lawsuit and the California Coastal Commission's consideration of a necessary project permit have seriously limited Cal Am's ability to move forward, at least in the short term. On October 28, 2019, Coastal Commission staff recommended that the approval of the Desal Project permit be denied due to the viability of an expanded Pure Water Monterey recycled water treatment program as an alternative to the Desal Project. Shortly thereafter, the Coastal Commission decided to postpone a vote on the Desal Project until March, pending further review of the viability of alternatives to the project. Subsequently, on November 19, Judge Lydia Villarreal, presiding over the District's lawsuit, issued an order extending a stay on construction until March 2020, corresponding to the expected timing of the decision of the California Coastal Commission regarding a permit for the Desal Project.

### **Conclusion and Implications**

The Desal Project is an ambitious undertaking borne largely out of necessity for Cal Am. Challenges to the project have had limited success, but the November 19 order in the District's lawsuit extending the stay on construction of the project represents a notable victory. Such delays, along with recent delays involving the expansion of Pure Water Monterey, mean that Cal Am may be unable to obtain the supplemental water supply in time needed to offset the full imposition of restrictions on production in Carmel River. Though the recent setbacks and present circumstances do not suggest that the eventual completion of the Desal Project will be compromised, Cal Am still needs to secure certain approvals relating to the project and opponents appear likely to continue pursuing all avenues to undermine it. (Wesley A. Miliband, Andrew D. Foley)

## ONE NEVADA COUNTY PROPOSES THE NOVEL IDEA OF EXPORTING EXCESS FLOODWATERS TO THE PARCHED SOUTHERN PART OF THE STATE

It's hard to believe that in Nevada—the most arid state in the nation—there might be *too much* water. But that is the case in one hydrologic basin on the northern edge of the Reno metropolitan area, where impervious desert playa soils, banner water years in 2017 and 2019, and development in the floodplain have combined to cause ongoing flooding that has not abated. To address the problem, the county responsible for flood management, Washoe County, has filed an application with the Nevada State Engineer to export excess floodwaters out of the basin. That application underscores the difficulties that can arise when a governing body's responsibility to manage public health and safety concerns intersects with the doctrine of prior appropriation.

### Historic Flooding

Reno sits on the eastern edge of the Sierra Nevada. Lemmon Valley is one of several basins in the Reno area that receives run off from the mountains but has no natural outlet for water. Stormwater collects at the valley floor and fills Swan Lake, a shallow playa depression, where little infiltration occurs. Over the years, the City of Reno and Washoe County approved residential, industrial and commercial development along the shores of Swan Lake.

In normal years, sufficient water evaporates from the surface of Swan Lake to keep it confined to the natural lake bed and, sometimes, to dry completely. In 2017, however, precipitation and mountain snowpack were about 200 percent of normal. In response, Swan Lake rose above its historical elevation and flooded surrounding homes. To make matters worse, a wastewater treatment plant also discharges treated municipal effluent into Swan Lake, accounting for 5-6 percent of the lake's water.

Due to the sheer amount of moisture and saturated soils, the floodwaters did not sufficiently recede, notwithstanding a warm summer. Flooding or the threat of flooding continued into 2018. Compounding the situation, 2019 proved to be another very wet year. Three years into the flooding, it has become obvious that the problem will not resolve itself through natural processes within any reasonable time frame.

Initially, Washoe County implemented short-term measures to contain the lake water, which included temporary barriers and pumps. When those measures did not alleviate the problem, a number of neighboring homeowners sued the City of Reno, claiming a taking of private property without just compensation. The plaintiffs contended that the flooding resulted from city and county planning decisions, which transformed Swan Lake into a water storage facility for run off. The city responded that extreme weather events, not development, created an unprecedented flooding situation beyond the city's control. In June 2019, however, a jury found for the neighbors.

### The County's Application to Export Floodwater

On October 18, 2019, the county filed an application to appropriate 1,500 acre-feet per year of water from Swan Lake as part of a project to mitigate the flooding in Lemmon Valley. Through a pump, pipeline and other infrastructure, the county proposes to transport the floodwaters to two neighboring basins for discharge to ephemeral streams. The county identifies its proposed manner of use as wildlife purposes and suggests that ancillary benefits could include instream flow and groundwater recharge in the receiving basins. In other words, the purpose of the application is to get rid of water in Lemmon Valley, not address any needs in the basins to which the water would be moved.

The county's application acknowledges that, before implementing any such project, it will need to perform feasibility studies and acquire rights of way from property owners. There is no specified deadline within which the State Engineer must act on an application.

### Private Appropriation of Floodwaters

One interesting twist in the county's flood mitigation effort is that a more senior application to appropriate the floodwaters of Swan Lake is already pending before the State Engineer. That application was filed by three individuals, who proposed:



...to use 2,500 acre-feet of Swan Lake water for storage in reservoirs and underground aquifers. . .to alleviate an actual and potential hazard from flooding in Lemmon Valley.

The application also identifies potential secondary beneficial uses, which could include “quasi-municipal, municipal, evaporation, irrigation, mining, recreation, wildlife, dust control and domestic.” According to the application,

The water pumped from the lake. . .will be. . .only for the purpose of pro-actively reducing if not entirely eliminating the existing and threatened flood situation. The goal is for mitigating flood situations in Lemmon Valley Lake [aka Swan Lake] that are due to increased runoff associated with climate change, development or extreme events. Public agencies, utilities and associations will implement.

The applicant does not own the land on which the flood storage structures would be built. The county protested this application, but in its own application, only requested the right to divert lake water above and beyond the 2,500 acre-feet sought in the more senior application.

Notably, the same private appropriators also filed applications for the floodwaters of two nearby playa lakes in the Reno area, one of which the State Engineer approved in 2012. In issuing that permit, the State Engineer indicated that:

...[t]he amount of water recoverable under [the permit] will be determined on an annual basis. . .[with]. . .[n]o carry over credit. . .allowed. . .unless approved by the State Engineer under a separate recharge, storage, and recovery permit.

Without any carry over credit, it remains to be seen what beneficial uses could actually be proved up.

The City of Reno also recently proposed a change to its development standards for stormwater control in the Federal Emergency Management Agency’s des-

ignated “flood hazard areas” in closed drainage basins. Going forward, the city will require:

...onsite detention/retention basins that are adequately sized to mitigate the increase of storm water runoff as the result of the development to a minimum mitigation ratio of 1:1.3 during the 100-year, 10-day storm.

This means a development must capture more stormwater than would naturally flow offsite, raising the question of whether a developer must file an application to appropriate the surplus stormwater that the oversized detention/retention basins will collect.

Nevada’s water statutes provide that “all water may be appropriated for beneficial use as provided in this chapter and not otherwise.” Nev. Rev. Stat. 533.030(1). One exception to this mandate is, in any county with a population of 700,000 or more, “[w]ater stored in an artificially created reservoir for use in flood control.” Currently, this provision applies only to Clark County, which encompasses the Las Vegas metropolitan area, and nowhere else in Nevada. The limited scope of the statute suggests that the stormwaters of Lemmon Valley are subject to private appropriation.

### Conclusion and Implications

The assertion of private rights to appropriate run-off may not be compatible with a municipality’s obligation to manage stormwater flows and protect the community from flooding. Will the holder of a permit to appropriate stormwater be able to restrain the governing jurisdiction’s planning authority or dictate how floodwaters are managed? Must the governing jurisdiction pay the private appropriator for the right to manage those floodwaters? This seems at odds with the general police power to protect public health and safety. A legislative fix might be the best means to address these vexing questions. In the meantime, though, the issue may soon come to a head in flood-prone Lemmon Valley.  
(Debbie Leonard)

**CLIMATE CHANGE SCIENCE**

**RECENT SCIENTIFIC STUDIES ON CLIMATE CHANGE**

**Ocean Acidification and N<sub>2</sub>O Emissions**

As climate change progresses, one of the major global environmental issues that will occur is ocean acidification. Ocean acidification occurs because dissolved carbon dioxide (CO<sub>2</sub>) undergoes chemical reactions with other chemical compounds in the ocean to make the ocean more acidic. This process is part of a naturally occurring biogeochemical cycle, which allows CO<sub>2</sub> to move between the atmosphere and the ocean. However, as atmospheric CO<sub>2</sub> concentrations increase, CO<sub>2</sub> dissolves much more quickly into the ocean without any change to the rate of CO<sub>2</sub> evaporation. As a result, oceanic CO<sub>2</sub> concentrations also increase, causing the ocean to become more acidic over time. While the link between higher greenhouse gas emissions and increased ocean acidification is well studied, there is little research investigating correlations between increased ocean acidification and increased greenhouse gas emissions.

The ocean is a major source of nitrous oxide (N<sub>2</sub>O), a potent greenhouse gas, emissions through microbial conversion of compounds found in the ocean. The ocean microbial N<sub>2</sub>O production accounts for approximately 20 percent of all atmospheric N<sub>2</sub>O. For this reason, a research team led out of Tokyo Institute of Technology sought to uncover a relationship between ocean acidification in the western North Pacific Ocean and N<sub>2</sub>O production. To do this, the research team collected seawater samples from the Pacific Ocean around Japan. They measured the N<sub>2</sub>O production rates of the pure seawater samples, as well as the rates of some acidity-adjusted seawater samples. When they compared the N<sub>2</sub>O production rates between the samples with and without acidity adjustments, they found that the N<sub>2</sub>O production rates greatly increased with increasing acidity. Another interesting finding was that the rate of increase varied depending on where the sample was taken from. This, along with other studies that have shown a negligible or opposite trend, suggests that the relationship between acidity and N<sub>2</sub>O production might not be constant across the planet. While there is a strong positive correlation in the western North

Pacific, other oceanic locations may have different trends.

Because increasing N<sub>2</sub>O emissions would escalate climate change, it is important to understand whether the global ocean production of N<sub>2</sub>O will increase or decrease with climate change. If it is found that increased acidification truly leads to increased N<sub>2</sub>O emissions, then the oceans will be in positive feedback loop that increases initial warming. Since there has been evidence of contradicting trends elsewhere, it is important to understand the relationship between ocean N<sub>2</sub>O production and climate change worldwide to truly get a better understanding of how our planet is changing over time.

*See:* Breider, F., et al. Response of N<sub>2</sub>O production rate to ocean acidification in the western North Pacific. *Nature Climate Change*, 2019; DOI: 10.1038/s41558-019-0605-7.

**Hydroelectric Power Climate Benefits May Have Diminishing Returns**

Hydropower has long been touted for its climate benefits given the limited greenhouse gas emissions emitted during its operations. Hydropower is the production of mechanical energy using the force of flowing water. Modern hydroelectric power is generated from water flowing through the blades of a turbine which causes a generator to spin. Given that water is used to spin the generator, the generators do not directly emit greenhouse gas (GHG) emissions.

Researchers at the Environmental Defense Fund recently published a study in the *American Chemical Society's Environmental Science and Technology Journal*, which assessed the climate impacts of hydropower facilities beyond typical one-year operations. To do this they modelled the GHG emissions (e.g., carbon dioxide and methane) from over 1,400 hydropower facilities in over 100 countries. They also included the impacts of initial plant development, including the initial flooding of natural landscapes to create reservoirs and the short-term and long-term effects of the accumulation of GHGs in the atmosphere.

The goal of the study was to conduct a more robust assessment of the climate impacts from the generation of electricity using hydroelectric power. In doing so, the researchers found that hydropower may not be as beneficial to the climate when the impacts of initial plant development are considered. In addition, for some regions, the emissions from the development of a new plant may never be recovered. For Western Africa and Southern Asia, hydropower emissions were estimated to be equal to or greater than fossil fuel sources such as natural gas and coal.

The assessment is limited in that the majority of the data used are based on a single study conducted by Scherer and Pfister in 2016. However, given the thousands of new hydropower plants planned or currently construction, more consideration should be given to these potential impacts when planning for climate change.

See: Ilissa B. Ocko, Steven P. Hamburg. Climate Impacts of Hydropower: Enormous Differences among Facilities and over Time. *Environmental Science & Technology*, 2019; DOI: 10.1021/acs.est.9b05083

### Prokaryotic CO<sub>2</sub> Production Rates Expected to Increase with Rising Temperatures

Climate change is already disrupting a wide range of ecosystems – and as these ecosystems change, so must the organisms that inhabit them if they are to continue thriving. Prokaryotes (bacteria and archaea) are single-celled organisms found in every type of ecosystem. They are estimated to make up 50 percent of the biomass on Earth, thus they play a significant role in nutrient cycling. When bacteria undergo respiration to convert food to energy, one of the products is CO<sub>2</sub>. Given the central role of CO<sub>2</sub> and other greenhouse gases in climate change, it is important to understand how prokaryotes will respond metabolically to changes in the environment.

A recent study published in *Nature Communications* by researchers at Imperial College London and University of Exeter analyzed the effects of rising temperatures on prokaryotic metabolism. The researchers modeled 482 different prokaryotic strains which inhabit environments ranging from 0°C-120°C in order to gain the broadest and most complete understanding of prokaryotic responses to increasing temperature. They found that mesophiles, which are bacteria that function optimally below 45°C, have a high thermal sensitivity and showed increased meta-

bolic rates as temperature increased. This increased metabolism was shown for short-term temperature increases (such as those that naturally occur over the course of a day), but the metabolic response to long-term, persistent temperature change is more complicated. The mathematical model showed that carbon flux increases by 8 percent during a short-term 10°C temperature increase (assuming an ecosystem that is 50 percent heterotrophs, of which 50 percent are bacteria), while over the long-term, carbon flux increases by 5 percent with 4°C warming. The long-term model represents a scenario in which gradual, persistent warming occurs and the bacteria's thermal sensitivity evolves such that they become more metabolically efficient.

The results of this study demonstrate the complexity of climate change's impacts. As temperatures rise, prokaryotes will grow and metabolize at higher rates, which will generate more CO<sub>2</sub>, which in turn will have an impact on the total CO<sub>2</sub> concentration in the atmosphere. The researchers indicated that while their model of these prokaryotic strains was novel, there are still numerous areas where further research is required. The study suggested that climate change could lead to temperature increases and fluctuations that are so extreme that the prokaryotes would begin metabolizing in a manner that no longer fits the model they created, requiring a new model to be developed. To create the fullest picture, the authors also recommended that further research be conducted to understand the thermal response of other types of organisms, such as phytoplankton, which are fundamental to marine ecosystems.

See: Smith, T.P., Thomas, T.J.H., García-Carreras, B. et al. Community-level respiration of prokaryotic microbes may rise with global warming. *Nat Commun* 10, 5124 (2019) doi:10.1038/s41467-019-13109-1

### Exploring the Link between Fire Season and Climate Change

A record-breaking fire event in British Columbia led a group of scientists to explore the link between extreme fire season and anthropogenic climate change. A recent study prepared for the American Geophysical Union aims to provide insight into the complex relationship between human-induced climate change and its effects on temperature and precipitation anomalies, indices describing wildfire risk, and annual burned areas. Kirchmeier-Young et

al. utilize an event attribution method and a large range of regional climate model simulations to evaluate these parameters.

In the summer of 2017, roughly 1.2 million hectares of land in southern British Columbia burned, which surpassed the previous record of area burned by 40 percent set in 1958. These extreme fires displaced 65,000 people and created poor air quality conditions negatively impacting human health. The time period leading up to the extreme fire event was characterized by abnormally hot and dry weather conditions, which is the first focus of this study. Kirchmeier-Young et al. analyzed simulated mean anomalies for temperature and precipitation time series data in attempt to understand the influence of climate change. The decade 1961- 1970 was selected to represent the climate with reduced influence of human emissions, whereas the decade 2011-2020 was selected to represent the current climate. By analyzing the time series data, the study found that anthropogenic climate change increased the likelihood of the temperature anomalies experienced by 20 times. Conversely, the findings between anthropogenic climate change and precipitation anomalies proved to be insignificant.

The second focus of this study is to analyze the relationship between anthropogenic climate change and fire weather and behavior indices. These indices are based on a range of weather-related variables to predict general wildfire risk, using indicators such as fuel moisture and spread of a potential fire. Ultimately, the study found that anthropogenic climate

change increased the likelihood of elevated fire index values by two to four times.

The final focus of this study is to analyze the relationship between anthropogenic climate change and area burned during a fire. Kirchmeier-Young et al. utilized a regression model to estimate the area burned given the climate variables and fire indices referenced above. The study found that anthropogenic climate change is responsible for roughly 86-91 percent of the area burned during the extreme fires in British Columbia during 2017.

It is important to note that these findings are limited by the accuracy of the models from which they were obtained. The regression model operates under the assumption that non-climatic variability in the natural log of area burned is constant with time. The results of this study are specific to one event in space and time, so they cannot be directly applied spatially and temporally. In addition, the model cannot predict the possibility of human intervention over changes in forest management or ignition sources. Kirchmeier-Young et al. show that extreme fire risk is expected to increase in the future, which is knowledge that should critically influence decisions regarding forest management, public health, and infrastructure.

See: Kirchmeier-Young, M. C., Gillett, N. P., Zwiwers, F. W., Cannon, A. J., & Anslow, F. S. (2019). Attribution of the influence of human-induced climate change on extreme fire season. *Earth's Future*, 7, 2-10. <https://doi.org/10.1029/2018EF001050> (Abby Kirchofer, Libby Koolik, Shaena Berlin Ulissi, Ashley Krueder)

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**REGULATORY DEVELOPMENTS**

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**U.S. BUREAU OF LAND MANAGEMENT FINDS NEGLIGIBLE RISK TO WATER RESOURCES POSED BY HYDRAULIC FRACTURING IN PORTIONS OF CALIFORNIA**

On November 1, the U.S. Bureau of Land Management (BLM) issued a final Supplemental Environmental Impact Statement (EIS) relating to environmental impacts of hydraulic fracturing (fracking) in areas within western Kern, Kings, and nearby counties. In its supplemental impact statement, the BLM concluded that hydraulic fracturing posed negligible risks to surface and groundwater resources in the planning area subject to BLM jurisdiction.

**Background**

The Bureau of Land Management manages 400,000 acres of public lands, and 750,000 acres of federal mineral estate, within 17 million acres of public land in Kings, San Luis Obispo, Santa Barbara, Tulare, Ventura, Madera, Fresno, and Kern counties.

The surface and subsurface acreage managed by the BLM encompasses sensitive ecological resources and biodiversity. For instance, nearly one third of the threatened or endangered animal species in California may be found within the BLM's management area, and subsurface acreage includes a variety of groundwater systems that form part of the water supplies used by agricultural and municipal users in the area.

In September 2011, the BLM made available a draft Resource Management Plan (RMP) for the management area, which replaced an existing plan. The BLM also made available its draft Environmental Impact Statement under the National Environmental Policy Act (NEPA), which provided five alternatives to managing the public lands and mineral estate under BLM's jurisdiction.

In 2013, the BLM issued its final EIS, and subsequently commissioned an independent assessment of hydraulic fracturing (fracking) in California by the California Council of Science and Technology (CCST). CCST's study was designed to assess the available published scientific and engineering information associated with fracking in California, and

was released in 2014. However, the BLM concluded that CCST's report did not provide significant new information to warrant supplementing its EIS. In 2015, the BLM selected Alternative B as the operative RMP, which would open slightly more than 1 million acres to oil and gas exploration while closing nearly 150,000 acres.

Shortly after the BLM adopted Alternative B as its Resource Management Plan, several environmental groups filed a lawsuit in federal court challenging the sufficiency of the BLM's EIS, contending that the BLM failed to adequately consider the environmental impacts of fracking under NEPA on the roughly 1.2 million surface and subsurface acreage managed by BLM. In September 2016, the court granted most of the environmental parties' claimed relief, catalyzing a settlement agreement between the parties.

The settlement agreement conditioned dismissal of the case on the BLM preparing a supplemental EIS assessing the environmental impacts of fracking on the managed area. The settlement agreement also provided that the court would no longer have jurisdiction over the case within 14 days of the BLM issuing its supplemental EIS, provided any motions for attorneys' fees and costs on the part of the environmental groups had been resolved. The BLM issued its supplemental EIS (SEIS) on November 1, 2019.

**The National Environmental Policy Act and Litigation**

As interpreted by the Ninth Circuit in prior cases, NEPA obligates a federal agency to consider every significant aspect of the environmental impact of a proposed action, and ensures the agency will inform the public that it has indeed considered environmental concerns in its decision-making process. In reviewing the adequacy of an EIS, courts apply a "rule of reason" standard to determine whether the EIS contains a reasonably thorough discussion of the significant aspects of probable environmental



consequences. Accordingly, judicial review of an EIS consists only of ensuring that the agency took a “hard look.”

The U.S. District Court faulted BLM for failing to meaningfully discuss fracking in its EIS, instead only mentioning fracking three times throughout the report. The court concluded that the agency failed to take the requisite hard look required by NEPA, particularly where, under the RMP, a quarter of new wells in BLM’s managed area were expected to use fracking. The court also focused on the CCST study that identified several potential concerns and calls for additional information and analysis, such as potential impacts to surface and groundwater posed by fracking.

The SEIS recognizes that fracking may have an impact on surface and groundwater resources. In the SEIS, BLM assumed that between zero and four wells under any new lease would be drilled per year over the ten-year planning period (totaling 40 wells per lease). BLM estimates that approximately 400 wells per year would be fracked in California, resulting the consumption of roughly 246 acre-feet per year, based on an annual average use of 200,000 gallons per fracked well. According to BLM, that consumption would be negligible for zero to four wells drilled per year over the planning period, compared to the more than 2 million acre-feet of water used per year in Kern County, mostly for agriculture. Additionally, BLM concluded that, while spilled fracking fluids and materials could pose a risk to groundwater, the relatively small number of wells likely to use fracking meant the risk was negligible, as was the risk from flowback fluids used during the well drilling and fracking process.

In the SEIS, BLM generally recognized that injecting fracking fluids into wells poses contamination

risks to groundwater. According to BLM, there are two major pathways through which fracking fluids may impact groundwater. These are: 1) a breakdown in barriers designed to prevent leakage of fluids from the well, and 2) migration of fractures outside of the target producing formation. Addressing the former, the SEIS relies on the concept of well integrity, and state regulations designed to ensure it, in support of its conclusion that the impact of drilling zero to four new wells per year would cause negligible risks to groundwater. Similarly, BLM concluded that the risk of migrating fractures for zero to four wells per year posed a negligible risk of groundwater contamination. However, BLM noted that an interagency partnership called the California Oil, Gas, and Groundwater Program has been formed to study the problem posed by oil and gas activities to groundwater.

## Conclusion and Implications

With respect to the impact posed by fracking on water resources, the SEIS generally concludes that the risks of fracking in the planning area managed by BLM are negligible. The SEIS includes reference to a variety of studies and reports, and thus appears to consider more information about fracking than the original EIS. However, it is unclear whether environmental groups will bring suit over the SEIS, and whether the information and analyses relied by BLM will stand up to the “hard look” standard required by NEPA. The BLM Supplemental Environmental Impact Statement, is available online at: [https://eplanning.blm.gov/epl-front-office/projects/nepa/100601/20006500/250007620/FINAL\\_Bakersfield\\_Hydraulic\\_Fracturing\\_SEIS\\_10-25-19.pdf](https://eplanning.blm.gov/epl-front-office/projects/nepa/100601/20006500/250007620/FINAL_Bakersfield_Hydraulic_Fracturing_SEIS_10-25-19.pdf). (Miles Krieger, Steve Anderson)

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**PENALTIES & SANCTIONS**

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**RECENT INVESTIGATIONS, SETTLEMENTS,  
PENALTIES, AND SANCTIONS**

•On October 29, 2019, the U.S. Environmental Protection Agency (EPA) announced that the U.S. District Court for the District of Massachusetts had ordered R.M. Packer Company, Inc. and Tisbury Towing and Transportation Co., Inc. to comply with environmental laws and pay penalties of \$1.3 million to resolve violations of the Clean Air Act (CAA) and Clean Water Act (CWA). EPA had cited numerous violations and urged the companies to come into compliance with federal and state environmental laws. The two related Massachusetts companies distribute gasoline and other petroleum products. The court established a four-year time period for the companies to pay the penalties associated with the case. R.M. Packer owns and operates a petroleum bulk fuel terminal in Tisbury, Massachusetts. The court found that R.M. Packer violated the federal CAA and applicable Massachusetts regulations by failing to properly operate and maintain emission control equipment, failing to repair vapor leaks from equipment, and failing to inspect, document, and report on operations. It also found that R.M. Packer failed to comply with industrial stormwater requirements under the CWA. Stormwater runoff from the R.M. Packer facility contains contaminants that threaten the coastal waters of Lagoon Pond and Vineyard Haven Harbor. To protect these waters, EPA's industrial stormwater permit requires the company to implement stormwater best management practices to filter out pollutants and/or prevent pollution by controlling it at its source. The court found that R.M. Packer failed to install and maintain proper stormwater best management practices for boat cleaning operations, waste stockpiles, and oil and waste storage containers. In addition to ordering R.M. Packer to fully comply with stormwater requirements, the court ordered R.M. Packer to comply with facility requirements for implementation of the Oil Spill Prevention, control, and Countermeasure Plan, and the Facility Response Plan. Tisbury Towing operates fuel barges that transport gasoline and other petroleum products between

its pier on Herman Melville Boulevard in New Bedford, Massachusetts, and local destinations including the R.M. Packer terminal in Tisbury. The court found that Tisbury Towing failed to comply with Massachusetts Air Pollution Control regulations by failing to meet requirements for demonstrating vapor-tightness and failing to obtain an emission control plan.

•On November 18, 2019, EPA announced a settlement with New Cooperative Inc. for alleged violations of the CAA Risk Management Program (RMP) regulations. New Cooperative is a large agricultural retailer with 43 facilities in Iowa. It will pay a penalty of \$20,000 to resolve cited violations at its Badger, Iowa facility. EPA documented a number of RMP violations at the facility during an August 2018 inspection. At the time of the inspection, the facility had the capacity to store 650,000 pounds of anhydrous ammonia fertilizer, with an estimated inventory of 300,260 pounds on site during the inspection. New Cooperative allegedly failed to (1) update and maintain the facility's management system and assign a qualified person to the overall responsibility of the facility's RMP, (2) ensure its ammonia processes were designed or maintained in conformance with recognized and generally accepted good engineering practices, including an inoperable emergency shutoff cable on a supply vessel, inadequate emergency signage, a vessel needing corrosion protection, and an illegible data plate on a 26,000-gallon ammonia storage vessel, (3) properly conduct hazard reviews and address any deficiencies or hazards found in a timely manner, and (4) update the accident history of the facility's RMP and correct the plan to reflect two prior accidents. As part of the settlement, New Cooperative will install emergency electronic shutoff systems at no fewer than 13 of its facilities at an estimated cost of \$80,000, designed to close all shutoff valves and shut down liquid and vapor pumps for each facility. These facilities will include emergency stop buttons and a remote stop transmitter, which can be worn by an employee to reduce response time to a potential release.

•On November 18, 2019, EPA announced a settlement with Manning Grain Company for alleged violations of the Clean Air Act Risk Management Program (RMP) regulations related to management of anhydrous ammonia. Manning Grain Company owns and operates an agricultural retail facility in Burruss, Nebraska. It will pay a penalty of \$45,796 to resolve the alleged violations. EPA documented violations at Manning Grain's facility during a June 2018 inspection. Evidence obtained by EPA following the inspection documented that the facility routinely maintains over 400,000 pounds of anhydrous ammonia on site. Manning Grain is alleged to have failed to: 1) prepare and submit a RMP to EPA, 2) determine and maintain records of an analysis of the off-site consequences of releases of ammonia, 3) perform proper maintenance and place safety barriers designed to prevent collisions with ammonia storage tanks, 4) properly conduct compliance audits and hazard reviews, and address any hazards in a timely manner, and 5) determine and document who would respond to accidental releases. As part of the settlement, Manning Grain will purchase equipment for local emergency responders at an estimated cost of \$8,415 that consists of 30 heat-resistant hoods and a thermal camera capable

of identifying heat sources inside buildings during responses or rescues.

•On November 12, 2019, EPA announced an administrative consent order requiring Watco Terminal and Port Services to limit handling, storing, and shipping of bulk manganese-containing materials to and from its Chicago facility by January 31, 2020. Watco stores and handles bulk materials, including manganese-bearing alloys, that are open to the air, non-packaged, and able to escape as fugitive emissions. EPA issued a notice of violation to Watco on December 18, 2018 for excessive manganese air emissions at the facility. The consent order requires Watco to remove all bulk materials containing 2 percent or more of manganese. The order also requires the company to continue air monitoring for small particles including manganese for six months after all loose manganese-containing materials are removed. Monitoring can end after six months if average manganese concentrations are below the conservative risk level set by the federal Agency for Toxic Substances and Disease Registry. Following the notice of violation, Watco stopped handling and receiving new manganese shipments while continuing to reduce its on-site inventory.  
(Allison Smith)

## LAWSUITS FILED OR PENDING

U.S. DEPARTMENT OF JUSTICE SUES CALIFORNIA  
TO STOP INTERNATIONAL TRADING OF EMISSIONS CREDITS

The ongoing dispute over climate change policy between the Trump administration and the State of California continued last month, as the U.S. Department of Justice sued to block part of California's greenhouse gas (GHG) reduction program. If successful, the suit will limit California's ability to maintain international leadership in efforts to combat global warming. [*United States of America v. The State of California, et. al.*, (E.D. Cal 2019).]

**Background**

In a lawsuit filed in the U.S. District Court for the Eastern District of California, the Department of Justice asserts that a regional system created by California's Air Resources Board (CARB), which aims to cap planet-warming greenhouse gas emissions but allows corporations to trade emissions credits within that cap, is unlawful because it includes Quebec, Canada. The Justice Department cited a constitutional prohibition on states making their own treaties or agreements with foreign governments.

The Trump administration argues that the federal government must be able to speak with one voice in the area of foreign policy, and argues that California has exceeded its authority by entering into an agreement involving Canada. Governor Gavin Newsom argues that carbon pollution knows no borders, and that California has a responsibility to enter into cross-border collaborations to curb global warming. The lawsuit, in a nutshell, has as its basis, the following:

Notwithstanding the breadth and exclusivity of the federal government's responsibility for foreign affairs, Defendants have pursued, or are attempting to pursue, an independent foreign policy in the area of greenhouse gas regulation. Specifically, Defendants have intruded into the federal sphere by entering into a cap-and-trade agreement with the provincial government of Quebec, Canada (the "Agreement"). This intrusion complexifies and burdens the United States' task, as a collective of the states and ter-

ritories, of negotiating competitive international agreements.

Over the course of the Trump presidency, California has brought more than 30 environmental lawsuits against the federal government, largely aimed at curbing rollbacks of climate change regulations enacted under the Obama administration. Yet tensions have been higher since the Trump administration acted to remove California's authority under the Clean Air Act to set automobile emissions standards that are stricter than those set by the federal government.

**Far-Reaching Impacts**

While legal experts differ as to whether the suit has merit, if the Trump administration succeeds, the result would seriously impede California's efforts to lead on the global stage on climate issues, and would be a blow to the state and local efforts to tackle climate change in the face of inaction by the federal government.

Beyond its immediate effects, any decision for the Trump administration would potentially impact a wide variety of existing agreements, including trade missions state and cite regularly engage in to open new markets and deepen relationships with communities abroad.

California carefully crafted its deal with Quebec in light of its 2003 loss in *American Insurance Association v. Garamendi*, where the U.S. Supreme Court ruled that California's Holocaust Victim Insurance Relief Act, which would have revoked the license of any company not complying with the law, unconstitutionally interfered with the President's conduct of the nation's foreign policy. California may now argue that its agreement with Quebec is merely a memorandum of understanding and does not rise to the level of a treaty with a foreign government.

The Western Climate Initiative—whose board includes representatives from California, Quebec, and Nova Scotia—is also a defendant in the lawsuit. A similar system, the Regional Greenhouse Gas Initia-

tive, covers power plant emissions in Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Because that agreement does not stray beyond the borders of the United States, it is unlikely to be impacted by a court decision here.

California's system predates the agreement with Quebec and would remain in effect even if the Department of Justice prevails. However, if the federal government succeeds, it is almost certain to create a chilling effect, complicating future efforts for California to work with businesses and other governments world-wide to combat climate change.

## Conclusion and Implications

Climate change is one of the most prominent fronts in the current debates about the limits and nuances of federalism. The question of who can act in what ways in order to create and implement environmental policy will be one of the crucial issues of this century. Local, state, and federal actors each have a role to play in researching climate change and solutions to global warming, but the exact contours of each government's authority may shape the nature of environmental legislation at all levels of government in the decades to come. The lawsuit is available online at: <https://www.justice.gov/opa/press-release/file/1212416/download>.  
(Jordan Ferguson)

## ALASKAN SUPREME COURT HEARS ORAL ARGUMENT IN CLIMATE CHANGE CASE ALLEGING THE STATE GOVERNMENT IS ENDANGERING THE PUBLIC WELFARE

Last month, Alaska's Supreme Court heard arguments in a climate lawsuit accusing the state government of violating the rights of young people by encouraging the use of fossil fuels. Sixteen children, ranging in age from 7 to 22, filed the lawsuit arguing that Alaska has a constitutional responsibility to protect the climate as a public resource for future generations. [*Esau Sinnok, et al., v. State of Alaska*, Case No. S17297 (Alaska 2019); see: <https://appellate-records.courts.alaska.gov/CMSPublic/Case/General?caseID=25150>].

### Background

The Alaska Supreme Court hearing in *Sinnok v. Alaska* is over the narrow question of whether the children's suit can go to trial. The goal of the suit is to overturn a state law enacted in 2010 to promote fossil fuel development.

This case is one of several legal challenges filed by young environmentalists to preserve their rights and the rights of future generations from government actions which will create adverse environmental effects. Another recent prominent example involved Greta Thunberg and 15 other children submitting a complaint to the United Nations Committee on the Rights of the Child, arguing that Argentina, Brazil, France, Germany and Turkey have violated human

rights by failing to adequately address climate change. And in *Juliana v. United States*, children and young adults allege the US government has impinged on their constitutional rights to life, liberty, and property by promoting fossil-fuel consumption. A federal appeals court in San Francisco is set to rule on whether that trial can proceed, and that case is expected to end up before the United States Supreme Court.

### Another Bite at the Apple

The Alaska case follows a similar suit filed in 2011, in which Alaskan children argued the state was violating their rights by failing to control greenhouse gas emissions. In 2014, the Alaska Supreme Court dismissed that case because it did not challenge specific actions by the government. This suit corrects for that error, taking aim at specific actions which promote fossil fuels.

The plaintiffs have appealed an Alaska trial court's dismissal of their suit, arguing that the Alaska Superior Court misconstrued four counts alleging violations of previously recognized constitutional rights as a single claim to an unenumerated substantive due process right to a stable climate system. Plaintiffs assert that their rights to life, liberty, and property, as well as the right to a stable climate system, which would be a newly enshrined right.



The basic question at issue is whether Alaska's courts have the duty to determine the constitutionality of Alaska's statutory energy policy, which requires the state to promote fossil fuel development. The plaintiffs argue that Alaska's policies have already placed them in danger and will continue to harm their health, safety, homes, and Native villages. The state argues that the constitutionality of Alaska's promotion of fossil fuels cannot be reviewed by the courts because it is inherently a political question for sole determination by the legislative and executive branches.

There has been no argument on the merits of the case yet, as the current dispute is over whether the claim was rightly dismissed by the Alaska Superior Court. The state has not denied that climate change

is having enormous impacts on Alaska and its youth. Rather, the Alaska Attorney General's office has argued that the courts cannot decide whether the state's energy policy is constitutionally permissible.

### Conclusion and Implications

If the suit proceeds to trial, it would be a test case for the idea that young people have a vested interest in climate policy, and that state governments must be responsive to more than simply immediate needs. Whether or not the suit succeeds, actions like this increase public discourse on climate change and further incentivize those who are pushing to take drastic actions to stave off the effects of climate change. The case is being closely watched by everyone practicing within this field.

(Jordan Ferguson)

## JUDICIAL DEVELOPMENTS

### D.C. CIRCUIT RULES SUIT AGAINST EPA REGARDING VEHICLE EMISSIONS STANDARDS IS PREMATURE—PROVIDES GUIDANCE FOR FINAL RULEMAKING

*California By and Through Brown v. U.S. Environmental Protection Agency*, 940 F.3d 1342 (D.C. Cir. 2019).

In this case, a group of states, environmental groups, and electric industry representatives (petitioners) sought review of an action by the U.S. Environmental Protection Agency (EPA) regarding vehicle emissions standards. The U.S. Court of Appeals for the District of Columbia circuit ruled that EPA's decision was not a judicially reviewable final action and dismissed the Petitioners' petitions for lack of jurisdiction.

#### Factual Background

Section 202(a) of the federal Clean Air Act (CAA) directs EPA to "prescribe (and from time to time revise)" vehicle emissions standards. Although, the CAA generally prohibits states from adopting their own vehicle emissions standards, Congress allowed the EPA Administrator to grant waivers to states that had adopted standards prior to 1966 so long as their standards were "at least as protective of public health and welfare" as the federal ones (California is the only state that qualified for a waiver under this provision). In 1977, Congress added § 177 to the CAA permitting other states to "adopt and enforce" standards that are identical to California's standards. The National Highway Traffic Safety Administration (NHTSA), via delegation from the Secretary of Transportation, must prescribe corporate average fuel economy (CAFE) standards for new vehicles. In 2009, the EPA and NHTSA announced that they would collaborate to propose harmonized standards.

In 2010, EPA and NHTSA published a joint final rule establishing "strong and coordinated" standards for model year 2012 to 2016 vehicles. This new "National Program," which included annual increases in stringency, represented an agreement between the federal government, California and major automobile automakers. This was followed by additional standards set in 2012 for model year 2017 to 2025 ve-

hicles, with a commitment by the EPA and NHTSA to conduct a "comprehensive mid-term evaluation." In January 2017, the EPA completed the "mid-term evaluation" and left the standards "as-is" for model years 2022-2025 (Original Determination).

As noted by the court, with President Donald Trump's administration in place, "EPA changed lanes." In March 2017, President Trump announced his intent to cancel the Original Determination, which was followed by an official EPA notice that it would begin the process of reconsidering the Original Determination. On April 13, 2018, EPA published its "Revised Determination," thereby "withdrawing" the Original Determination.

Petitioners contended that EPA had violated the procedural and substantive requirements imposed by 40 C.F.R. §86.1818-12(h), which requires EPA to consider certain information as part of its rulemaking. Petitioners also contended that the Revised Determination was arbitrary and capricious under the Administrative Procedure Act (APA).

#### The D.C. Circuit's Decision

##### Revised Determination is Not a Final Action

The D.C. Circuit Court began its analysis by stating that only final actions are judicially reviewable under the CAA. The court then set out the two-prong test used to determine if an action is final. First, the action must mark the end of the agency's decisionmaking process. Second, the:

...action must be one by which rights or obligations have been determined, or from which legal consequences will flow.

The court ruled that it did not need to address the first prong because petitioners' contention failed the second prong.

As to the second prong, the court ruled that the Revised Determination:

...did not itself effect any change in the emissions standards that were established by the 2012 final rule for model year 2022–2025 vehicles.

Since those standards remain in effect during the current rulemaking process, the court opined that “the Revised Determination created only the *possibility* that there may be a change in the future to the model year 2022–2025 standards as the result of the rulemaking process” initiated by EPA. The court also rejected petitioners’ contention that the Revised Determination “created direct legal consequences,” either for EPA or for the states. As to EPA, the court ruled that the Revised Determination did not change EPA’s enforcement approach. As to the states, the court ruled that although the states and the District of Columbia:

...may have been ‘prudent’ to act quickly based on their prediction that the standards will be

made less stringent in the forthcoming final rule...such voluntary actions do not generate final agency action.

### Conclusion and Implications

This is one of many cases between California and the federal government regarding vehicle emissions standards, with some opining that it was seen as the longest shot. Still, even though the case was dismissed, the court did provide some helpful guidance when it opined: “Of course, if EPA ultimately changes the 2012 standards, it will need to provide a ‘reasoned explanation’ for why it is ‘disregarding facts and circumstances that underlay or were engendered by the’ 2022–2025 model year standards when they were set in 2012 and the additional record developed during the original mid-term evaluation process.”

The opinion may be accessed online at: [https://www.cadc.uscourts.gov/internet/opinions.nsf/7F54D236E75E2FE38525849E004D609B/\\$file/18-1114.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/7F54D236E75E2FE38525849E004D609B/$file/18-1114.pdf).

(Kathryn Casey)

## NINTH CIRCUIT REJECTS CLAIM THAT APPROVAL OF INDUSTRIAL-SCALE WIND FACILITY VIOLATED THE APA, NEPA, AND BALD AND GOLDEN EAGLE PROTECTION ACT

*Protect Our Communities Foundation v. Lacounte*, 939 F.3d 1029 (9th Cir. 2019).

Plaintiffs challenged the decision of the U.S. Bureau of Indian Affairs (BIA) to approve an industrial-scale wind facility in southern California, raising arguments under the Administrative Procedure Act (APA), the National Environmental Policy Act (NEPA), and the Bald and Golden Eagle Protection Act (BGEPA). The U.S. District Court granted summary judgment, finding that the environmental analysis was sufficient to satisfy NEPA, and BIA’s decision not to require the wind developer to obtain a BGEPA permit was justified. Following appeal, the Ninth Circuit affirmed.

### Factual and Procedural Background

Tule Wind, LLC (Tule) intends to construct 85 wind turbines about sixty miles east of San Diego,

California. During the planning and approval process, the project was split into two phases. Phase I concerned 65 turbines constructed on federal land in a valley, which required approval from the Bureau of Land Management (BLM), which is responsible for granting rights-of-way for use of federal lands. Phase II concerned 20 turbines on the Ewiiapaayp Band of Kumeyaay Indians (Tribe) reservation on ridgelines above the valley. Phase II required approval from BIA, which serves as a trustee for federally recognized Indian tribes.

Before approving the respective project phases, the BLM and BIA were required to conduct environmental review under the National Environmental Policy Act. BLM prepared an Environmental Impact Statement (EIS) that covered both phases. Among other

environmental impacts, the EIS expressly identified an “unavoidable adverse impact” to golden eagles from collisions with the turbines and loss of breeding territory. The EIS also considered five project alternatives, including one that would eliminate 63 turbines, including all of the Phase II turbines, from the 128 turbines that were originally proposed.

For Phase I, Tule drafted a Project-Specific Avian and Bat Protection Plan (Protection Plan), which described possible means of mitigating bird and bat impacts in detail. Relying on that plan and the EIS, the BLM approved Phase I. That approval was then upheld following judicial review. *See, Protect Our Communities Foundation v. Jewell*, 825 F.3d 571 (9th Cir. 2016).

For Phase II, Tule drafted a Supplemental Project-Specific Avian and Bat Protection Plan (Supplemental Protection Plan), which included updated eagle surveys and described measures to document and avoid bird impacts. The Supplemental Protection Plan concluded that, with mitigation measures, Phase II could “meet the current no-net loss standard for local breeding eagle populations.” The BIA made the Supplemental Protection Plan available for public comment. The U.S. Fish and Wildlife Service (FWS), among other entities, criticized the Supplemental Protection Plan’s methodologies and conclusion.

The BIA approved Phase II in a Record of Decision (ROD) that relied on BLM’s EIS and Tule’s Supplemental Protection Plan. The ROD adopted several mitigation measures designed to avoid impacts to golden eagles. These mitigation measures included a requirement that before operating, Tule had to apply for an eagle take permit under the Bald and Golden Eagle Protection Act.

Plaintiffs challenged the BIA’s approval in the District Court, asserting three alleged errors. The District Court granted defendants’ motion for judgment on the pleadings on two of the claimed errors and granted defendants’ motions for summary judgment on the third. Plaintiffs then timely appealed.

## The Ninth Circuit’s Decision

### BIA’s Decision to Rely on BLM’s EIS

The Ninth Circuit first addressed plaintiffs’ claim that the BIA improperly relied on BLM’s EIS to

satisfy its NEPA obligations because the BIA did not explain its decision to not implement one of the EIS’ listed mitigation measures. Contrary to this claim, however, the Ninth Circuit found that the BIA had in fact followed the mitigation measure. The Ninth Circuit also rejected plaintiffs’ related argument that the BIA should have explained why its Record of Decision found no significant impact to eagles, even though the EIS had concluded that the entire project would impact eagles. The court found no such discrepancy, noting that the EIS considered whether the entire project would have any impact on eagles, whereas the Supplemental Protection Plan considered whether Phase II would have significant impacts, taking into account the Supplemental Protection Plan’s mitigation measures and analysis.

### The EIS’ Analysis of Alternatives

The Ninth Circuit next addressed plaintiffs’ claim that the EIS’s alternatives analysis was deficient because it did not consider an alternative where only some of the Phase II turbines were authorized. After first rejecting the BIA’s contention that plaintiffs failed to preserve the issue for judicial review, the Ninth Circuit found that the alternatives analysis was sufficient when viewed in light of the project as a whole. Although no mid-range alternative was considered as to the 20 Phase II turbines, the EIS’s fifth alternative did consider a mid-range alternative for the project as a whole—construction of 63 out of 128 turbines. In addition, BLM ultimately only approved a configuration with fewer turbines that had been initially proposed. While the court noted that analysis of a larger project may not always be sufficient to satisfy NEPA for a smaller portion of the project, it found the alternatives analysis to be sufficient in this instance.

### BIA’s Decision Not to Prepare a Supplemental EIS

The Ninth Circuit then addressed plaintiffs’ contention that the BIA should have prepared a supplemental EIS to analyze information that arose after the original EIS had been published. Plaintiffs raised five grounds in support of their argument, including claims that: information in the Supplemental Protection Plan constituted new and significant information; the EIS had “rejected” the Phase II turbines;

certain information met the criteria for “significance” requiring further review; the BIA did not adequately respond to comments from FWS and the California Department of Fish and Wildlife; and the BIA failed to assess the significance of new information. The Ninth Circuit rejected all of these claims, finding that there was not any significant new information, and that the BIA had taken the requisite “hard look” required under the APA.

### **BIA’s Decision Not to Require Tule to Obtain a BGEPA Permit**

Finally, the Ninth Circuit rejected plaintiffs’ challenges to BIA’s decision not to require Tule to obtain a Bald and Golden Eagle Protection Act permit from the FWS. Instead, the BIA only required Tule to apply for a permit before it began operation of the

turbines. The Ninth Circuit found this to be appropriate, concluding that, while the BIA only required Tule to apply for a permit, it nonetheless required Tule to comply with all applicable laws, and the BIA’s decision not to condition its approval on prior acquisition of a permit from another agency was not arbitrary or capricious.

### **Conclusion and Implications**

The case is significant because it analyzes a variety of NEPA concerns in the context of phased environmental review and provides a substantive analysis of issues in connection with Bald and Golden Eagle Protection Act. The decision is available online at: <http://cdn.ca9.uscourts.gov/datastore/opinions/2019/09/23/17-55647.pdf>.

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