CENTER for BIOLOGICAL DIVERSITY
Because life is good.

November 14, 2013

Via Electronic and Certified Mail

California Coastal Commission
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Re: The Coastal Commission's Regulatory Authority and Mandates Relating to Fracking in Oil and Gas Wells Offshore California

Dear Commissioners:

I am writing on behalf of the Center for Biological Diversity to urge the California Coastal Commission to take immediate action to halt hydraulic fracturing (fracking) and other unconventional techniques for extracting oil and gas off the California coast. Set forth below is a roadmap of steps that the Commission can and should take to protect Californians, our beaches, and wildlife from offshore fracking. These actions are necessary to protect our marine environment and comply with your stewardship duties under the California Coastal Act.

Fracking is an inherently dangerous practice that has no place in our fragile coastal ecosystem. It increases the environmental damages and risks beyond those of conventional oil development and poses a threat of serious harm to marine life and the coastal environment. The Commission must use its broad delegation of authority under the California Coastal Act to protect wildlife, marine fisheries, and the natural environment from the practice. Because the risk of many of the harms from fracking cannot be eliminated, a complete prohibition on fracking is the best way to protect human health and the environment.

Absent a total ban, the Coastal Commission can take several concrete, proactive steps under the Coastal Act to limit the practice in state and federal waters and ensure the continued health of our coastal ecosystem. While the permitting of oil and gas drilling off the coast of California involves other regulatory agencies, this letter will focus on those actions the Coastal Commission can take to ensure that California's marine resources are protected to the full extent of the Coastal Act.

First, the Coastal Commission must require that oil and gas operators who are fracking in state waters obtain a coastal development permit. The Commission can also issue guidance to local governments to amend their local coastal programs to limit the practice. Because the risks and damages of fracking cannot be mitigated to a level that is consistent with the central tenets of the Coastal Act,

the Commission should assert its authority to regulate oil and gas development in the coastal zone and deny any coastal development permits for fracking within state waters. In federal waters, the Coastal Commission must demand that fracking operations are receiving proper scrutiny under the Coastal Zone Management Act (CZMA) and object to any consistency certifications for activities that include fracking.

1. Fracking in State and Federal Waters

It has recently come to light that fracking is occurring in offshore drilling operations off the coast of California, in both federal and state waters. According to federal documents obtained by journalists, federal regulators at the Bureau of Safety and Environmental Enforcement (BSEE) have permitted fracking in federal waters on existing leases in the Pacific Ocean at least 15 times since the late 1990s, and have recently approved a new project.[1] Records released by the agency indicate that Venoco conducted fracking on the Gail Platform Well E-8 in 2010.[2] More recently, BSEE approved an Application for Permit to Drill (APD) from DCOR to use fracking on Gilda Platform well S-05.[3] An oil industry fact sheet about offshore fracking indicates the process is "[s]imilar to fracking that is being used to develop unconventional resources onshore . . . ."[4] In a recent Associated Press article on offshore fracking, an experienced petroleum engineer was quoted saying that introducing fracking to offshore oil development "no doubt adds complexity and risk."[5] Allowing this hazardous and toxic activity to occur in the delicate offshore environment is reckless and irresponsible

Research by the Center demonstrates that fracking is currently occurring in state waters as well. Records from the voluntary reporting site FracFocus.org reveal that 15 wells have been fracked in state waters in the past several years. These wells are primarily on man-made islands off the coast of Long Beach. Because FracFocus.org contains only partial, voluntarily disclosed information on wells, and only those fracked since January 1, 2011, this compilation is virtually certain to be an underestimate of the actual number of frack jobs that have already occurred. Indeed, according to a recent investigation by the AP, in waters off Long Beach, Seal Beach and Huntington Beach — some of the region's most popular surfing strands and tourist attractions — oil companies have used fracking at least 203 times at six sites in the past two decades.[6] These numbers are guaranteed to go up as more details on this unregulated practice are uncovered.

2. Environmental Risks and Damages from Fracking

Offshore fracking directly and negatively impacts the coastal resources the Coastal Commission is charged with preserving. By allowing fracking to occur in this "delicately balanced

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[1] Dearen, Jason and Alice Chang, Offshore Fracking Off California Coast Under Review, Drawing Calls For Increased Regulation (Aug. 3, 2013) http://www.huffingtonpost.com/2013/08/03/offshore-fracking_n_3700574.html

[2] End of Operations Report dated March 15, 2010

[3] DCOR Application for Permit to Drill.

[4] *See* American Petroleum Institute Briefing Paper (2013)*Offshore Hydraulic Fracturing*. Available at: *http://www.api.org/~/media/Files/Oil-and-Natural-Gas/Exploration/Offshore/Offshore-Hydraulic-Fracturing.pdf.*

[5] Dearen, Jason and Alice Chang (2013) Offshore fracking off California coast under review, drawing calls for increased regulation. *Associated Press*, Aug. 3, 2013. Available at: http://www.huffingtonpost.com/2013/08/03/offshore-fracking_n_3700574.html

[6] California Finds More Instances Of Offshore Fracking, October 19, 2013, http://www.usatoday.com/story/money/business/2013/10/19/calif-finds-more-instances-of-offshore-fracking/3045721/

ecosystem," the Coastal Commission is abrogating its duty to protect wildlife, marine fisheries, and the ecological balance of the coastal zone. Cal. Pub. Res. Code, § 30001. On land, fracking, drilling, and the resulting toxic wastewater have developed an extensive track record of spills, accidents, leaks, pollution, and property damage; offshore, those effects are heightened by the added complications of operating in a difficult environment. The damages from fracking and drilling to air, water, wildlife, and health have been severe, and often irreversible. Yet the full extent of the risks and the long-term impacts are not even yet fully understood. Hundreds of carcinogenic and toxic chemicals are known to be used in fracking, but the full extent and composition of chemicals used in fracking is undisclosed by industry. The latest fracking techniques, including the high volume, high-pressure use of the chemical fracking fluid combined with horizontal drilling, have been in use for only about a decade, yet in that time have transformed the oil and gas industry and led to drilling booms around the country by facilitating production from shale formations that could not previously be economically developed. The environmental and community destruction have been dramatic. This experience with onshore fracking, along with the additional factors discussed in detail below, demonstrates the serious threat fracking poses to the coastal environment when conducted in our oceans.

a. Fracking uses toxic chemicals and increases risks to water quality

The Coastal Commission is charged with protecting the "quality of coastal waters . . . appropriate to maintain optimum populations of marine organisms and for the protection of human health." Cal. Pub. Res. Code § 30231. This is achieved through, among other means, "minimizing adverse effects of waste waters discharges." *Id.* Currently the Coastal Commission is failing to achieve this mandate because uncontrolled fracking is occurring off the California coast.

While industry claims that companies have been safely fracking wells in California for decades, modern fracking is new, different, and more perilous. Today, to help profitably draw oil out of shale formations, companies will drill extensive horizontal wells, and repeatedly fracture the surrounding shale by pumping a mixture of chemicals called "slick water" down the well under immense pressure. Slick water is truly hazardous, containing chemicals that could cause cancer or damage to the nervous, cardiovasculatory, and endocrine systems.[7] Solid and fluid oil exploration wastes can generally be placed into three categories: produced water, drilling fluids and cuttings, and associated wastes.[8] Produced water can contain harmful substances like benzene, arsenic, lead, hexavalent chromium, barium, chloride, sodium, sulfates, and boron,[9] and it also can be radioactive.[10]

Water contamination is a particular hazard with fracking because hundreds of toxic chemicals are used in fracking fluid. While the oil and gas industry has to date successfully resisted the full disclosure of fracking chemicals, what is known is cause for extreme concern.[11] Harmful chemicals

[7] Colborn, Theo et al., Natural Gas Operations for a Public Health Perspective, 17 Human and Ecological Risk Assessment 1039 (2011).
[8] Mall, Amy (2010) *Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy* at 7.
[9] *Id.* at 8.
[10] *See* (2013) Proposed law would force drillers to test waste for radiation. *E&E News* Feb. 14.
[11] *See, e.g.*, United States House of Representatives, Committee on Energy and Commerce Minority Staff (2011)*Chemicals used in hydraulic fracturing* ("House Report") at 11-12; *see also* Colborn, Theo et al. (2011) Natural gas operations from a public health perspective. *Human and Ecological Risk Assessment* 17:1039 ("Colborn 2011"); McKenzie, Lisa et al. (2012)

present in these fluids can include volatile organic compounds (VOCs), such as benzene, toluene, xylenes, and acetone.[12] A congressional report sampling incomplete industry self-reports found that "[t]he oil and gas service companies used fracking products containing 29 chemicals that are (1) known or possible human carcinogens, (2) regulated under the Safe Drinking Water Act for their risks to human health, or (3) listed as hazardous air pollutants under the Clean Air Act."[13] One peer-reviewed scientific study examined a list of 944 fracking fluid products containing 632 chemicals, 353 of which could be identified with Chemical Abstract Service numbers.[14] The study concluded that more than 75 percent of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems; approximately 40 to 50 percent could affect the brain/nervous system, immune, and cardiovascular systems, and the kidneys; 37 percent could affect the endocrine system; and 25 percent could cause cancer and mutations.[15] Another study reviewed exposures to fracking chemicals from onshore wells and noted that trimethylbenzenes are among the largest contributors to non-cancer threats for people living within a half mile of a well, while benzene is the largest contributor to cumulative cancer risk for people, regardless of the distance from the wells.[16] Another recent study has found increased arsenic and heavy metals in groundwater near fracking sites in Texas.[17]

The fracking chemicals known to be used in California state waters are alarming. The Center's analysis of chemicals used in 12 wells and disclosed by the voluntary reporting site FracFocus reveals that almost all of the chemicals used are suspected of causing gastrointestinal, respiratory, and liver hazards, as well as skin, eye, and sensory organ risks. More than half of the chemicals are suspected of being hazardous to the kidneys, immune and cardiovascular systems, and more than one third are suspected of affecting the developmental and nervous systems. Between one-third and one-half of the chemicals used are suspected ecological hazards.[18]

As a specific example of the hazardous materials used by fracking operations in state waters, the chemical "X-Cide," manufactured by Baker-Hughes and used in all fracked wells, is classified as a hazardous substance under both the Occupational Safety and Health Act (OSHA) and the Comprehensive Environmental Response, Cleanup, and Liability Act (CERCLA, or Superfund). According to OSHA, X-Cide causes eye and skin burns, is harmful if swallowed, causes respiratory tract irritation, and is a cancer hazard. ("Major injury likely unless prompt action is taken and medical treatment is given."). According to its Material Safety Data Sheet, the product is listed as hazardous to both fish and wildlife. Below is a list of some of the most common chemicals found in wells in California waters and their health and environmental effects.[19]

Human health risk assessment of air emissions form development of unconventional natural gas resources, *Sci Total Environ* doi:10.1016/j.scitotenv.2012.02.018 ("McKenzie 2012").

[12] United States Environmental Protection Agency(2011) *Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources*.

[13] House Report. at 8.

[14] Colborn 2011 at 1.

[15] Colborn 2011 at 1.

[16] McKenzie 2012 at 5.

[17] Fontenot, Brian E et al. (2013) An evaluation of water quality in private drinking water wells near natural gas extraction sites in the Barnett Shale Formation. *Environmental Science & Technology*; U.S. GAO (2012) *Information on Shale Resources, Development, and Environmental and Public Health Risks*.

[18] Health effects taken from Colburn (2011).

[19] *Id.*

Seven Harmful Chemicals used in 12 California Offshore Wells		
Chemical	**Number of Wells Used**	**Known Health Effects[20]**
Crystalline Silica (X-Cide)	All 12 wells	Harmful to skin, eyes and other sensory organs, respiratory system, immune system and kidneys; mutagen. Known human carcinogen.[21]
Methanol	All 12 wells	Harmful to skin, eyes and other sensory organs, respiratory system, gastrointestinal system and liver, brain and nervous system, immune system, kidneys, reproductive and cardiovascular system; mutagen, developmental inhibitor and endocrine disruptor. Ecological risks.
Glyoxal	11 wells	Harmful to skin, eyes and other sensory organs, respiratory and reproductive system, gastrointestinal system and liver, brain and nervous system, immune system, cardiovascular system and blood, endocrine disruptor; mutagen, promoter of cancer. Ecological risks.
Sodium Tetraborate	All 12 wells	Harmful to skin, eyes and other sensory organs, respiratory system, gastrointestinal system and liver, brain and nervous system, kidneys, cardiovascular system. Ecological risks.
2-Butoxyethanol	3 wells	Harmful to skin, eyes and other sensory organs, respiratory system, gastrointestinal system and liver, brain and nervous system, immune system, kidneys, reproductive system and cardiovascular system; mutagen, developmental inhibitor and endocrine disruptor; linked to liver cancer. Also linked to adrenal tumors. Ecological risks.[22]
Merhyl-4-isothiazolin	All 12 wells	Harmful to skin, eyes and other sensory organs, respiratory, reproductive system, brain and nervous system, immune system; mutagen; developmental inhibitor. Ecological risks.
Ethoxylated nonylphenol	9 wells	Harmful to skin, eyes and other sensory organs, respiratory system, gastrointestinal system and liver, immune system, reproductive and cardiovascular system; developmental inhibitor and endocrine disruptor.

The chemicals used in the fracking process are extremely dangerous, but the fate of their ultimate disposal is of even greater concern. Typical onshore oil production operations inject produced water, or fracking "flowback" into underground reservoirs, where those waters have the potential to contaminate groundwater. Fracturing "flowback" ... and "produced water" (all waste-water that emerges from the well after production begins) contain potentially harmful chemicals, some of which are known carcinogens. Produced water is also highly saline and potentially harmful to humans, aquatic life, and ecosystems.[23] Releases of fracking fluids onshore have led to fish kills in freshwater

[20] Unless otherwise noted, health effects are documented by TEDX Endocrine Disruptor Exchange. Spreadsheet of health effects listed by chemical *available at* http://www.endocrinedisruption.com/chemicals.multistate.php.

[21] SCAQMD Staff Report for Proposed Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Well Chemical Suppliers (April 2013) Appendix A, p. A-14, a*vailable at* http://www.aqmd.gov/hb/attachments/2011-2015/2013Apr/2013-Apr5-031.pdf.

[22] U.S. EPA Integrated Risk Information System, Ethylene glycol monobutyl ether (EGBE)(2-Butoxyethanol) (CASRN 111-76-2), *available at* http://www.epa.gov/iris/subst/0500.htm; See also Abraham Lustgarten, ProPublica, Buried Secrets: Is Natural Gas Drilling Endangering US Water Supplies?

[23] *See* Michael Kiparsy & Jayni Foley Hein, Regulation of Hydraulic Fracturing: A Wastewater and Water Quality Perspective, April 2013, *available at* http://www.law.berkeley.edu/files/ccelp/Wheeler_HydraulicFracturing_April2013%281%29.pdf

bodies.[24] Spilling or leaking of fracking fluids, flowback, or produced water is also a huge problem. Spills can occur at the surface, and there is a risk of underground migration of fluids. Also, many fluids must be transported to and/or from the well, presenting additional opportunities for spills.

In the offshore context, fracking fluid is either discharged into the ocean or transported for onshore underground injection. When disposed of at sea, these chemicals enter the marine ecosystem. The Coastal Commission acknowledges that approximately half of the platforms in the Santa Barbara Channel discharge all or a portion of their wastewater directly to the ocean.[25] This produced wastewater contains all of the chemicals injected originally into the fracked wells, with the addition of toxins gathered from the subsurface environment. These discharges of toxic chemicals directly contravene the requirements of the Coastal Act, which charges the Coastal Commission with the "protection against the spillage of . . . hazardous substances." Cal. Pub. Res. Code § 30232.

While the impacts to wildlife have received little study, these chemicals clearly pose a threat to marine life.[26] Toxic chemicals that enter the marine environment will impact marine life and sensitive habitats. California has many species of whales, porpoises, dolphins, pinnipeds, and sea otters. More than 500 species of fish live off the shores of southern California. The coastal waters off California are a productive foraging region for whales and sea turtles and support a myriad of wildlife.

Water pollution from oil and gas drilling exacerbated by fracking will harm sensitive habitat, including important habitats for threatened and endangered species. *See* Cal. Pub. Res. Code § 30230 ("Special protection shall be given to areas and species of special biological or economic significance."). Blue, fin, sei, humpback, and sperm whales, as well as other marine mammals like sea otters, use southern California seawaters, as do protected fish, including the tidewater goby and southern California steelhead population. Leatherback, loggerhead, green, and olive ridley sea turtles also occur in the area. Endangered white and black abalone are found in the intertidal zones and threatened and endangered sea birds including the California least tern, western snowy plover, and light-footed clapper rail inhabit the area. The beach spectacle-pod, which is a California threatened species, may also be present. There is designated critical habitat for black abalone, leather back sea turtles, and snowy plovers in the vicinity of California's offshore oil platforms. These biologically sensitive and important habitat areas will be significantly impacted by water pollution associated with fracking.

Thus fracking chemicals, acidization chemicals, and produced waters will increase the waste generated from oil and gas drilling with subsequent increases in pollution and potential for spills.

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[24] *See* Papoulias, Diana M. and Velasco, Anthony L. (2013) Histopathological analysis of fish from Acorn Fork Creek, Kentucky, exposed to fracking fluid releases. *Southeastern Naturalist*, 12:92-111; MIT Energy Initiative (2011) *The future of Natural Gas, An Interdisciplinary MIT study*.available at: http://web.mit.edu/mitei/research/studies/natural-gas-2011.shtml (last visited August 19, 2013).

[25] *See* Coastal Commission Consistency Determination, General NPDES permit from discharges of offshore oil and gas platforms, http://documents.coastal.ca.gov/reports/2013/6/W13a-6-2013.pdf.

[26] *See* Bamberger, M. and Oswald, R.E. (2012) Impacts of gas drilling on human and animal health. *New Solutions*, 22(1):51-77; Betsey Piette (2012)BP oil spill, fracking cause wildlife abnormalities, *Workers World*, April 27; Pennsylvania Fish and Boat Commission (2012) Ongoing problems with the Susquehanna River smallmouth bass, A case for impairment, available at: http://www.fish.state.pa.us/newsreleases/2012press/senate_susq/SMB_ConservationIssuesForum_Lycoming.pdf (last visited August 20, 2013).

Using fracking to increase the lifecycle of an oil or gas well also means a longer life for the impacts of the operation including ongoing waste discharges, oil spills, and other spills into the ocean that can harm marine life.

In addition to water contamination, fracking and associated practices also increase air pollution and exacerbate climate change. Fracking does not occur in isolation, but brings with it all of the air pollution sources from conventional drilling and development, as well as introducing new sources of air pollution.

b. *Fracking increases air pollution.*

The Coastal Commission has a duty to protect the coastal environment, including air pollution resulting from the operation of oil and gas facilities in the coastal zone. Cal. Pub. Res. Code § 30251 ("Scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance."); §§ 30220-21, 30224 (protection for recreational activities). The Coastal Act also requires that marine resources and biological productivity in coastal waters be maintained and restored, which includes protecting animals, such as whales and sea turtles, from inhaling dangerous air pollutants. *Id.* at §§ 30230-31.

Oil and gas operations emit numerous air pollutants, including volatile organic compounds ("VOCs"), nitrogen oxides ("NO_X"), [27] non-methane hydrocarbons ("NMHCs"), particulate matter ("PM"), hydrogen sulfide, and methane. VOC emissions, which make up about 3.5 percent of the gases emitted by oil or gas operations,[28] are particularly hazardous.[29] VOC emissions include the BTEX compounds – benzene, toluene, ethyl benzene, and xylene – which are Hazardous Air Pollutants.[30] Health effects associated with benzene include "acute and chronic nonlymphocytic leukemia, acute myeloid leukemia, chronic lymphocytic leukemia, anemia, and other blood disorders and immunological effects."[31] Further, maternal exposure to benzene has been associated with an increase in birth prevalence of neural tube defects. Xylene exposure also can cause eye, nose, and throat irritation, difficulty in breathing, impaired lung function, and nervous system impairment.[32] In fact, many of the volatile chemicals associated with drilling and oil and gas waste are associated with serious effects to the respiratory, nervous, or circulatory systems.[33] Also, a recent study sampling air quality near Colorado gas wells found additional cause for concern regarding VOC emissions: among other things, it found methylene chloride in high concentrations.[34] The study states that for the wells tested "[m]ethylene chloride, a toxic solvent not reported in products used in drilling or fracking, was detected 73% of the time; several times in high concentrations," including one reading of 1730 ppbv.[35]

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[27] Sierra Club et al. (2011)Comments on New Source Performance Standards: Oil and Natural Gas Sector; Review and Proposed Rule for Subpart OOOO ("Sierra Club Comments") at 13.
[28] Brown, Heather(2011) Memorandum to Bruce Moore USEPA / OAQPS / SPPD re Compositon of Natural Gas for use in the the Oil and Natural Gas Sector Rulemaking. July 28 ("Brown Memo") at 3.
[29] McKenzie 2012; Food & Water Watch (2012) *The Case for a Ban on Fracking*.
[30] 42 U.S.C. § 7412(b).
[31] McKenzie 2012 at 2.
[32] *Id.*
[33] Colborn 2011.
[34] Colborn, Theo, *et al.* (2012) An exploratory study of air quality near natural gas operations. peer-reviewed and accepted for publication by *Human and Ecological Risk Assessment: An International Journal* (November 9, 2012)..
[35] *Id.*

While the source of the methylene chloride was not entirely clear, the study reported that it is stored on well pads for cleaning purposes.

In addition, the study of Colorado gas wells found high levels of multiple NMHCs, which can be associated with adverse health effects, including potential effects to the endocrine system at very low concentrations.[36] NMHCs generally make up almost 18 percent of produced natural gas, and operations ultimately emit large amounts of these pollutants. Moreover, like VOCs and NO_X, NMHCs are ozone precursors.

Oil and gas operations can also emit hydrogen sulfide. Hydrogen sulfide is contained in natural gas, and may be emitted during all stages of operation, including exploration, extraction, treatment and storage, transportation, and refining. [37] EPA has identified large parts of California –including the region at issue – as areas where natural gas tends to contain hydrogen sulfide.[38] Long−term exposure to hydrogen sulfide is linked to respiratory infections, eye, nose, and throat irritation, breathlessness, nausea, dizziness, confusion, and headaches.[39]

Oil and gas operations release large amounts of methane.[40] Natural gas emissions are generally about 84 percent methane.[41] While the exact amount is not clear, EPA has estimated that "oil and gas systems are the largest human-made source of methane emissions and account for 37 percent of methane emissions in the United States or 3.8 percent of the total greenhouse gas emissions in the United States." [42] Methane leakage is a problem in Southern California. A recent study of methane emissions in the Los Angeles Basin found that a startling 17 percent of total methane produced was leaked or vented to the atmosphere.[43]

Emissions of methane, one of the most potent greenhouse gases, are of great concern because they contribute significantly to climate change. Methane's global warming potential is approximately 33 times that of carbon dioxide over a 100-year time frame and 105 times that of carbon dioxide over a 20-year time frame.[44] Oil and gas development contributes to greenhouse gas emissions from the operations, refining, and end-use of the extracted oil or gas. Fracking increases these emissions because it extends the life of a well, and may facilitate oil development that is otherwise uneconomic.

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[36] Colborn 2012.
[37] Sierra Club Comments.
[38] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards (1993) *Report to Congress on Hydrogen Sulfide Air Emissions Associated with the Extraction of Oil and Natural Gas* (EPA‐453/R‐93‐045), at III-68 (Oct. 1993) ("USEPA 1993").
[39] *Id* at i.
[40] Natural Resources Defense Council (2012) *Leaking Profits* ("NRDC, Leaking Profits").
[41] Brown Memo at 3; Power, Thomas (2005)*The Local Impacts of Natural Gas Development in Valle Vidal, New Mexico*, University of Montana.
[42] U.S. Environmental Protection Agency (2012) *Natural Gas STAR Program, Basic Information, Major Methane Emission Sources and Opportunities to Reduce Methane Emissions* ("USEPA, Basic Information"); *see also* Petron, Gabrielle, et al. (2012) Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study, *Journal of Geophysical Research* 117.
[43] Peischl, J. *et al.* (2013) Quantifying sources of methane using light alkanes in the Los Angeles basin, California.
[44] Howarth, Robert, et al., (2012) Methane and the greenhouse-gas footprint of natural gas from shale formations. *Climactic Change*. doi 10.1007/s10584-011-0061-5; Shindell, Drew (2009) Improved Attribution of Climate Forcing to Emissions. *Science* 326:716 ("Shindell 2009")

Other pollutants released from oil and gas production also warm the climate. In particular, as noted above, oil and gas operations result in the emission of large amounts of NO_X and VOCs. Both of these pollutants are precursors of tropospheric ozone,[45] which is an important contributor to climate change.[46] Further, oil operations result in significant carbon dioxide emissions from the combustion of fossil fuels through the operation of engines or through flaring.[47]

Also, the refining and burning of any oil or gas produced by fracking will generate greenhouse gas emissions. In considering such emissions, it is important to note that the quality of oil and gas varies from place to place. For instance, while some formations yield light, sweet crude that among varieties of crude necessitates a relatively low energy input to refine, much of the oil produced in California is heavy oil that requires large energy inputs to produce and refine.[48]

The South Coast Air Quality Management District (SCAQMD) has identified several areas of new, dangerous and unregulated air emissions from fracking: the use of silica as a proppant, which causes the deadly disease silicosis, and the storage of fracking fluid once it comes back to the surface.[49] Preparation of the fluids used for well completion often involves onsite mixing of gravel or proppants with fluid, a process that potentially results in major amounts of particulate matter emissions.[50] Further, these proppants often include silica, which increases the risk of lung disease and silicosis when inhaled.[51] Finally, as flowback returns to the surface and is deposited in pits or tanks that are open to the atmosphere, there is the potential for organic compounds and toxic air pollutants to be emitted, which are harmful to human health as described above.[52] Air pollution caused by fracking has been shown to contribute to health problems in people living near natural-gas drilling sites.[53]

c. Offshore fracking will increase vessel traffic and light pollution.

The activities associated with fracking and the prolonged lifetime of oil and gas platforms as a result of new unconventional oil extraction methods will result in increases in vessel traffic and light pollution that in turn have adverse impacts on marine mammals and seabirds, respectively.

Offshore fracking is likely to increase vessel traffic and its associated impacts because vessels will be needed to service the wells, transport fracking fluids and sands, and dispose of wastes generated during the process. It may also increase vessel traffic as a result of extending the life of oil and gas operations and increasing interest in oil development in Pacific waters. Vessel traffic increases noise pollution that may interfere with important biological functions of marine mammals like feeding, mating, and rearing young. The number of whales killed by collisions with commercial vessels has

[45] Earthworks (2006) *Oil and Gas Air Pollution Factsheet*. available at: http://www.earthworksaction.org/library/detail/oil_and_gas_pollution_fact_sheet/.
[46] Shindell 2009
[47] Zahniser, Angela (2007) *Characterization of Greenhouse Gas Emissions Involved in Oil and Gas Exploration and Production Operations*.
[48] California Environmental Protection Agency Air Resource Board (2011) Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Low Carbon Fuel Standard, Appendix C, Calculation of Baseline Crude Average Carbon Intensity Value at C-5.
[49] South Coast Air Quality Management District, Revised Draft Staff Report PR1148-2 at 15.
[50] *Id.*
[51] South Coast Air Quality Management District, Submission to Joint Senate Hearing at 3.
[52] SCAQMD Revised Draft Staff Report PR1148-2 at 15.
[53] McKenzie 2012.

climbed within recent years to unsustainable levels. Ambient ocean noise from ship traffic continues to raise the din against which marine animals must struggle to carry out normal life.

Ship strike-related mortality is a documented threat to endangered Pacific coast populations of fin, humpback, blue, sperm, and killer whales. Ship strikes are an increasing problem in California.[54] Between 2001 and 2010, nearly 50 large whales off the California coast were documented as having been struck by ships.[55] The Santa Barbara Channel is important blue whale habitat. Between June and November, high densities of endangered blue whales spend time feeding on the abundant planktonic krill in the area of these oil and gas activities. In fact, blue whales have developed a particular affinity for the area such that the Santa Barbara Channel hosts the world's densest summer seasonal congregation of blues. Another endangered whale, the humpback whale, congregates in the area from May to September. Little is known about the elusive endangered fin whales; however, congregations have been observed near feeding aggravations of blue and humpback whales. Although rare, endangered sperm, right, and killer whales occasionally occur in the area. Gray whales migrate through the region in the late fall on their way south to breeding grounds and again in the late winter and early spring on their way north to feeding areas, and minke whales are known to occupy the region year-round. Increased oil and gas activities will interfere with important habitat and increase the risks of shipstrikes.

Fracking extends the life of offshore oil and gas platforms with associated impacts from lighting to wildlife. Seabirds are vulnerable to disorientation from oil and gas operations that increase light pollution. Artificial lighting from the proposed action must be more fully evaluated. Artificial light attracts seabirds at night, especially nocturnally active species such as auks, shearwaters, and storm-petrels, and disrupts their normal foraging and breeding activities in several ways.[56] In a phenomenon called light entrapment, seabirds continually circle lights and flares on vessels and energy platforms, instead of foraging or visiting their nests, which can lead to exhaustion and mortality.[57] Seabirds also frequently collide with lights or structures around lights, causing injury or mortality, or strand on lighted platforms where they are vulnerable to injury, oiling or other feather contamination, and exhaustion.[58]

d. Fracking and the disposal of fracking wastewater can induce earthquakes.

Any development in the coastal zone must "neither create nor contribute significantly to [] geologic instability." Cal. Pub. Res. Code § 30253. Scientists have long known that oil and gas activities are capable of triggering earthquakes, with records of the connection going back to the

[54] Zito, Kelly (2010) Whale deaths blamed on busy ship traffic, krill. *San Francisco Chronicle*, Oct. 10.
[55] National Marine Fisheries Service (2010c.) Southwest Regional Office, California Marine Mammal Stranding Network Database.
[56]Montevecchi, W. (2005) Influences of artificial light on marine birds. In C. Rich and T. Longcore, editors. *Ecological Consequences of Artificial Night Lighting*. Washington, D.C: Island Press,. 94-113.
[57] Wiese, F. K., W. A. Montevecchi, G. K. Davoren, F. Huettmann, A. W. Diamond, and J. Linke (2001) Seabirds at risk around offshore oil platforms in the North-west Atlantic. *Marine Pollution Bulletin* 42:1285-1290.
[58] Wiese et al. (2001); Black, A. (2005) Light induced seabird mortality on vessels operating in the Southern Ocean: incidents and mitigation measures. *Antarctic Science* 17:67-68.; Le Corre, M., A. Ollivier, S. Ribes, and P. Jouventin (2002) Light-induced mortality of petrels: a 4-year study from Réunion Island (Indian Ocean). *Biological Conservation* 105:93-102.

1920s.[59] In California, oil and gas extraction has in the past likely induced strong earthquakes, including two over 6.0 in magnitude.[60] Recent studies have also drawn a strong connection between the recent rise in waste water injection and increased earthquake rates.[61] Wastewater injection has likely been triggering seismic events in Arkansas,[62] Colorado,[63] Ohio,[64] Oklahoma,[65] and Texas.[66] In Oklahoma, the USGS recently acknowledged that wastewater disposal from fracking is a "contributing factor" to the six-fold increase in the number of earthquakes in that state.[67] In addition, fracking has been found to contribute directly to seismic events,[68] and even if the earthquakes that fracking directly generates are small, fracking could be contributing to increased stress in faults that leaves those faults more susceptible to otherwise naturally triggered earthquakes of a greater magnitude.[69]

e. Fracking increases the amount and duration of drilling beyond that previously contemplated.

Fracking not only brings new risks but also increases the damage from oil and gas drilling because it allows the development of areas that were previously uneconomical to develop, and allows continued production from wells that might otherwise be retired.[70] The scale of this threat should not be underestimated: California's Monterey Shale, which extends offshore, holds an estimated 15.4 billion barrels of shale oil, or 64 percent of the nation's total shale oil resources, according to the U.S. Energy Information Administration.[71] At a time when most of the Pacific Outer Continental Shelf is under a moratorium for new oil and gas leasing, fracking makes it likely that those areas under leases will be more intensively developed with associated environmental impacts.

Negative impacts are also likely to arise from the stress on aging infrastructure. Longer lifetimes for old wells and high pressures from fracking increase the risk of failures of pipelines, well control, or other equipment that may result in risks to human and environmental safety. For example, the Draft Environment Impact Review of Venoco's recommissioning project in Santa Barbara County details the successive infrastructure failures of the wells and the extensive repairs needed to mitigate the resulting environmental harm.[72] Thus, the threatened environmental damage from drilling on

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[59] National Research Council (2012) *Induced Seismicity Potential in Energy Technologies* ("NRC 2012") at 3.
[60] NRC 2012 at 28.
[61] van der Elst 2013.
[62] E&E News, USGS, Okla. warn of more drilling-related quakes in state, Mike Soraghan. October 25, 2013.
[63] *Id.*
[64] Ohio Department of Natural Resources (2012) *Executive Summary: Preliminary Report on the Northstar 1 Class II Injection Well and the Seismic Events in the Youngstown, Ohio, Area* ("Ohio DNR Northstar"); Fountain, Henry, Disposal halted at well after new quake in Ohio, *New York Times*, January 1.
[65] Keranen 2013; Holland, Austin, (2011) *Examination of possibly induced seismicity from hydraulic fracturing in the Eola Field, Garvin County, Oklahoma, Oklahoma Geological Survey Open-File Report* OF1-2011 ("Holland").
[66] Frohlich, Cliff, (2012) Two-year survey comparing earthquake activity and injection-well locations in the Barnett Shale, Texas. *Proceedings of the National Academy of Sciences.*
[67] *Supra* note 57.
[68] BC Oil 2012.
[69] *See* van der Elst (2013).
[70] *See, e.g.*, Citi Investment, Research and Analysis (2012) *Resurging North American Oil Production and the Death of the Peak Oil Hypothesis* at 9("CITI"); U.S. Energy Information Administration (2011) *Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays* at 4; Orszag, Peter (2011) *Fracking Boom Could Finally Cap Myth of Peak Oil.*
[71] U.S. Energy Information Administration(2011) *Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays* at 4.
[72] *See* Revised PRC Recommissioning Project Draft EIR, October 2013, 2-3, available at http://www.slc.ca.gov/Division_Pages/DEPM/DEPM_Programs_and_Reports/Venoco_PRC_421/PDF/2_PD.pdf

existing leases is greater today than previously understood at the time the leases, exploration, and development and production plans were approved. Offshore fracking and other unconventional production techniques have received no meaningful updated environmental analysis. Consequently, the impact of extending the life of aging oil and gas wells and likely increased interest in drilling offshore in the Pacific increases the safety and environmental risks of oil and gas development off California's coast.

Offshore fracking embraces a host of environmental issues that jeopardize the California coastal zone, an area rich in biological diversity and ecological significance, and "of vital and enduring interest to all the people." Cal. Pub. Res. Code § 30001(a). The Coastal Commission must use the full extent of its authority under the Coastal Act to protect "the ecological balance of the coastal zone and prevent its deterioration and destruction. *Id.* at § 30001(c).

3. **The Coastal Commission Has Authority to Regulate Fracking in State and Federal Waters Offshore California**

The Commission has a broad delegation of authority under the California Coastal Act to protect and preserve wildlife, marine fisheries, and the natural environment. Because fracking violates the central tenants of the Coastal Act, the Commission must assert its authority to regulate oil and gas development in the coastal zone and prohibit the practice for new and existing projects within state waters. In federal waters, the Coastal Commission must demand that fracking operations are receiving proper scrutiny under the CZMA and are consistent with the demands of the Coastal Act, including objecting to the practice until and unless all adverse impacts to coastal resources are fully mitigated.

a. The Coastal Act Provides the Commission with Broad Authority to Ensure the Health of the Coastal Environment.

The Commission is charged with protecting a precious resource; the California coastline. Growing public consciousness of the finite quantity and fragile nature of the coastal environment led to the 1972 passage of Proposition 20. It authorized an interim coastal commission to prepare a study summarizing the progress of planning in the coastal zone and delineating goals and recommendations for the future of California's shoreline for the guidance of the Legislature. The California Legislature used this study as a guide in the creation of the California Coastal Act in 1976, and passed the Act in order to "[p]rotect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment" and to "[a]ssure orderly, balanced utilization and conservation of coastal zone resources." Cal. Pub. Res. Code, § 30001.5. In so doing, the legislature recognized that the coastal zone is a "distinct and valuable recourse of vital and enduring interest to all the people and exists as a delicately balanced ecosystem." *Id.* "The permanent protection of the state's natural and scenic resources is a paramount concern to present and future residents of the state and nation." *Id.* As stated by the California Court of Appeals in *Gherini v. California Coastal Commission*, 204 Cal. App. 3d 699 (1988), "[t]he Legislature further found that in order to promote the public safety, health and welfare, protect public and private property, wildlife, marine fisheries, ocean resources and the natural environment, 'it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction.'"

These goals are interpreted broadly by the courts. *See La Fe Inc. v. County of Los Angeles*, 73 Cal. App. 4th 231, 235 (1999) ("The act is to be liberally construed to accomplish its purposes and objectives."). This broad interpretation "is consistent with the legislative policy of the Act found in section 30001.5 and the broad grant of power to the agency to adopt any regulations or take any action it deems reasonable and necessary to carry out its provisions." *Stanson v. San Diego Coast Reg'l Comm'n*, 101 Cal.App.3d 38, 47 (1980) (citing Cal. Pub. Res. Code, § 30333). When conflicts arise between the Act's policies, they must be resolved in a manner favoring the protection of the significant coastal resources. *See* Cal. Pub. Res. Code, § 30007.5; *see also Bolsa Chica Land Trust v. California Coastal Comm'n*, 71 Cal. App. 4th 493, 506 (1999) ("[t]he courts are enjoined to construe the statute liberally in light of its beneficient purposes. The highest priority must be given to environmental consideration in interpreting the statute.").

The Coastal Commission's goal of protecting California's coastal resources must be observed when the Commission considers permitting any new oil and gas facilities. While the existing moratoria on new oil and gas leases in state and federal waters implemented in response to the 1969 Santa Barbara oil spill contain some grandfathering provisions, the Coastal Commission is not required to permit new and dangerous activities like fracking. Any action taken by the Coastal Commission must conform to the strict mandates of the Coastal Act. The Commission must ensure that any regulatory action it takes, and any permits issued to a regulated entity, ensure that the health of the coastal ecosystem is protected and preserved.

b. The Coastal Commission Must Exercise Its Permitting Authority to Prohibit Fracking within the Coastal Zone

The Coastal Commission has direct permitting authority over offshore oil and gas development in state waters. Because fracking contravenes the directive of the Coastal Act to "protect the ecological balance of the coastal zone" the Commission has the authority and duty to immediately suspend all outstanding permits involving fracking and other unconventional oil production techniques. Cal Pub. Res. Code § 30001.

The Coastal Act created the California Coastal Commission for the protection and preservation of California's coastal resources, including the prevention of oil spills. Amicus Curiae Brief of Commission at *1, *People of the State of California v. Torch Operating Co.*, WL 32146821 (2002). This state agency was delegated authority to plan and permit development along the California Coast. *See* Cal. Pub. Res. Code, § 30600(a). Any person wishing to engage in development in the coastal zone must obtain a coastal development permit that is consistent with the Act. *Id.* at § 30600.

The act requires a coastal development permit for "any development" in the coastal zone. Cal. Pub. Res. Code, § 30600.) The Legislature established this permitting process as the mechanism through which the Coastal Commission and local governments review proposed projects to ensure that they will not have impacts inconsistent with the environmental protection policies of the Coastal Act. Development is defined in section 30106, which provides in relevant part:

> 'Development' means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of

> any materials; change in the density or intensity of use of land; . . . change in the intensity of use of water; . . . construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public or municipal utility. . . ."

The Act's expansive definition of the activities constituting development has been interpreted to include actions not commonly regarded as development of real property. *See Gualala Festivals Comm. v. California Coastal Comm'n*, 183 Cal. App. 4th 60, 67 (2010) (fireworks display is development); *Monterey Sand Co. v. California Coastal Comm'n*, 191 Cal. App. 3d. 169, 176 (1987) (offshore sand extraction is development). Relevant here, development also encompasses a "change in the intensity of use of water," and the disposal of any waste, factors that strongly point to the classification of fracking as "development."

While the Coastal Commission has delegated most permitting authority over coastal development to local governments through certified local coastal programs, the Coastal Act specifically requires any developments located on tidelands, submerged lands, public trust lands, or any development which constitutes a major public works project or major energy facility to obtain a coastal development permit directly through the Coastal Commission. Cal. Pub. Res. Code §§ 30519, 30601. In evaluating permits for coastal development, the Coastal Commission weighs the environmental impacts against the public benefit, and ensures that the proposed development is consistent with the goals of the Coastal Act. *Gherini v. California Coastal Comm'n*, 204 Cal. App 3d 699, 707 (1988). ("It is clear . . . that a determination of what will adversely affect the public welfare requires consideration of the preservation and protection of the state's natural resources and the ecological balance of the coastal zone as well as the need for a particular type of coastal-dependent development.").

Any proposed development inconsistent with the Coastal Act will be denied. *See* California Coastal Commission, Enforcement Program Overview, at http://www.coastal.ca.gov/enforcement/enforcement_program.pdf; *see also*, *Douda v. California Coastal Com.*, 159 Cal. App. 4th 1181 (2008) (affirming the denial of a coastal development permit, where the property contained a previously undesignated environmentally sensitive area, and where development would impair scenic and visual resources in violation of the Coastal Act).

i. <u>Fracking Constitutes "Development" and Operators Must Obtain a Coastal Development Permit</u>

Currently, individual well drilling plans are administratively approved by California's Division of Oil, Gas, and Geothermal Resources (DOGGR), which has not notified the Coastal Commission of any fracking activity. Because fracking and other well enhancement techniques constitute development under the Coastal Act, the Coastal Commission must require oil and gas operators to obtain a coastal development permit for any future fracking activity in state waters. For ongoing operations, the Coastal Commission must require operators to immediately halt operations pending an application for a coastal development permit.

Fracking falls squarely within the Coastal Act's broad definition of "development." § 30106. The practice, by its very nature, involves a high volume of "discharge or disposal of any . . . any

gaseous, liquid, solid, or thermal waste." *Id.* Fracking also involves "removing, dredging, mining, or extraction of [] materials," in the process of extracting oil. Finally, because fracking involves injecting a high volume of water into underground formations, and thereafter disposing of the produced wastewater, fracking "changes in the intensity of use of water." *Id.* In other states where fracking has occurred, operators reported using millions of gallons of water per well that has used fracking.[73]

The broad definition of "development" under the Coastal Act, and the expansive interpretation of the term by the courts, is consistent with the mandate that the Coastal Act is to be "liberally construed to accomplish its purposes and objectives." Cal. Pub. Res. Code § 30009. It thus has been held that "development" is not restricted to physical alteration of the coastal environment, and many diverse activities require coastal development permits. For example, in *Pacific Palisades Bowl Mobile Estates v. City of Los Angeles* (2012) Cal. 4th 783, the California Supreme Court found that converting a mobile home park from tenant occupancy to resident ownership required a coastal development permit. ("Public Resources Code section 30106, by using the word 'change,' signals that a project that would *decrease* intensity of use, such as by limiting public access to the coastline or reducing the number of lots available for residential purposes, is also a development."). *Id.* at 795 (emphasis in original). Other activities that have required coastal development permits include a commercial remodeling that increases automobile and pedestrian traffic, even though square footage in the building is unchanged, *Stanson v. San Diego Coast Regional Commission* (1980) 101 Cal. App. 3d 38, and a property owner's installment of gates and "no trespassing" signs. *LT-WR, L.L.C. v. California Coastal Comm'm* (2007) 151 Cal. App 4th 427. Certainly if the addition of pedestrian traffic or posting of signage constitutes "development," the transportation, injection, and disposal of highly toxic chemicals into the offshore environment must likewise be classified as such.

1. The Coastal Commission Can Deny Coastal Development Permits for Fracking Operations.

The Coastal Commission must not only require that any fracking operation obtain a coastal development permit, but consider very carefully whether any fracking operation can fulfill the Act's demanding statutory requirements. A coastal development permit may be issued only upon a finding that the proposed development is in conformity with chapter three of the Act. Cal. Pub. Res. Code § 30200 *et seq*.; *Sierra Club v. California Coastal Com*., 35 Cal. 4th 839 (Cal. 2005). Chapter three, in turn, requires that the "biological productivity and the quality of coastal waters . . . shall be maintained, and where feasible, restored through, among other means, *minimizing adverse effects of waste water discharges*." Cal. Pub. Res. Code § 30231. It further requires that

> marine resources shall be maintained, enhanced, and where feasible, restored. . . . Uses of the marine environment shall be carried out in a manner that will *sustain the biological productivity of coastal waters and that will maintain healthy populations of all species* of marine organisms adequate for long term commercial, recreation, scientific, and educational purposes.

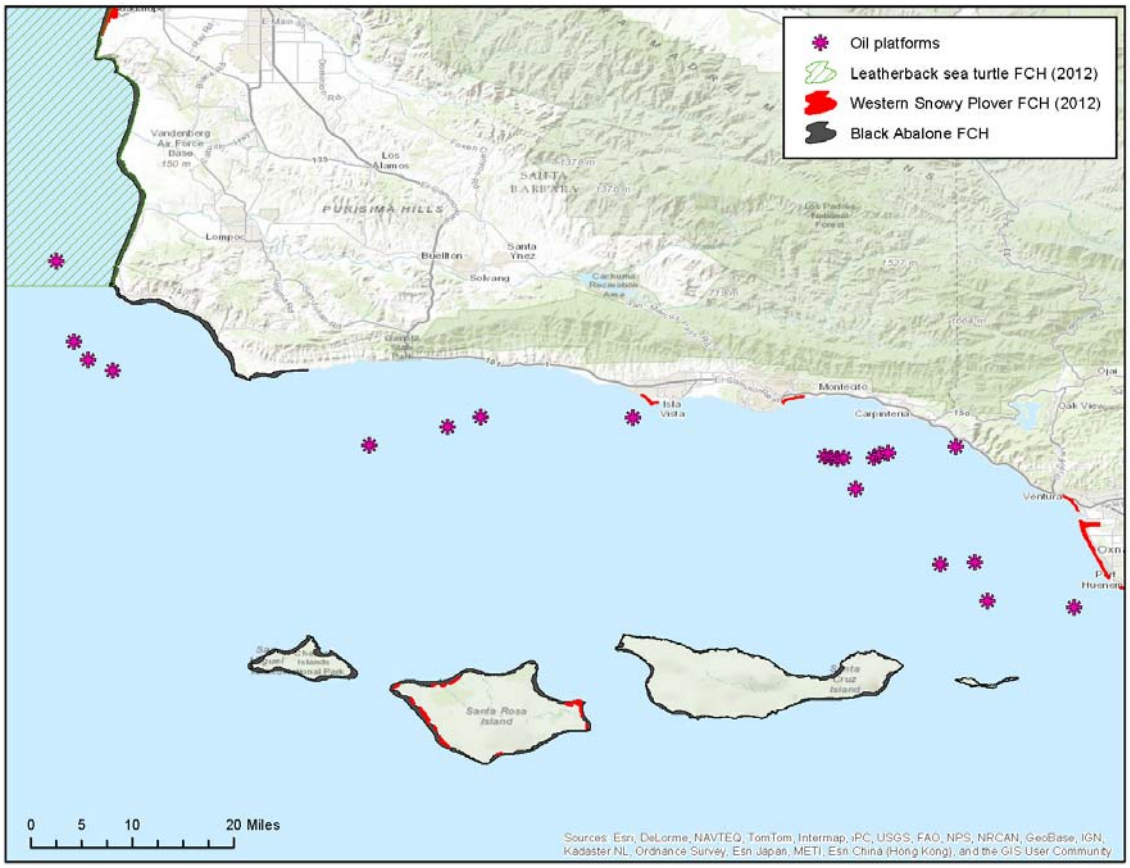
[73] United States Environmental Protection Agency Office of Research and Development, Hydraulic Fracturing Research Study, United States Environmental Protection Agency (2010), *available at* http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf.

Id. at § 30230. Any operation using fracking technology therefore must not only guarantee that biological productivity and water quality is maintained, but enhanced. Offshore fracking, simply put, cannot measure up to the demanding requirements of the Coastal Act and must not be permitted in the coastal zone.

As laid out in the prior section, fracking causes a suite of risks to the coastal environment, including, but not limited to: hazardous wastewater dumping; vessel traffic and light pollution; navigation risks from the increased number of platforms, exploratory rigs, and support vessel activity; production of drill muds and cuttings dumping, and the impact of this dumping on the water column and bottom communities in the vicinity of the drilling platform. All of these impacts could prove injurious to the biological productivity and integrity of coastal waters. *Id.* at §§ 30230-30231. Further effects that may impact marine resources and biological productivity include degraded air quality from exploration, production, and transportation activities, as well as oil spills from a variety of oil exploration, production, or transportation operations.

The Coastal Act also mandates that all new development will "neither create nor contribute significantly to . . . geologic instability." *Id.* at § 30252. Evidence from many states where fracking is occurring indicates that fracking and other unconventional production techniques have contributed to seismic activity, both directly through fracking and via wastewater injection. In California, oil and gas extraction has in the past likely induced strong earthquakes, including two over 6.0 in magnitude. Based upon the available evidence, fracking in the coastal environment risks "geologic instability" and may lead to future seismic events in California.

In addition, the Coastal Act requires that "[d]evelopment in areas adjacent to environmentally sensitive habitat areas . . . shall be sited and designed to prevent impact which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas." Cal. Pub. Res. Code § 30240. Environmentally sensitive habitat areas are defined as those areas in which "plant or animal life or their habitat are either rare or especially valuable." *Id.* at § 30107.5. The state waters where we understand fracking to be occurring, namely, off the coast of Seal Beach, Huntington Beach and Long Beach, are adjacent to areas of ecological significance which provide habitat for a number of endangered species. Blue, fin, sei, humpback, and sperm whales, as well as other marine mammals like sea otters, use southern California seawaters. Leatherback, loggerhead, green, and olive ridley sea turtles also occur in this area. Endangered white and black abalone are found in the intertidal zones. Protected fish, including the tidewater goby and southern California steelhead population, are in the area, and the endangered California clapper rail, endangered snowy plover, endangered California least tern, and the state endangered savannah sparrow all inhabit the beaches at issue. Fracking development and the resulting environmental harms, including the production of wastewater, will impair the use of these sensitive habitat areas and should be prohibited.



Furthermore, the cumulative impacts of offshore fracking for existing or future developments are poorly understood. These include impacts on air quality, commercial fisheries, scenic quality, marine resources, vessel traffic safety, and land resources from existing, approved, proposed, or projected developments. Neither the Coastal Commission nor any other state agency has a handle on the environmental impacts and risks associated with offshore fracking. There has never been an Environmental Impact Statement or Environmental Impact Report that fully analyzes the impacts of modern offshore fracking. In the onshore context, a federal district court recently found that the Bureau of Land Management violated the National Environmental Policy Act (NEPA) by failing to conduct an environmental impact study and to consider the impacts of fracking before granting new oil and gas leases in the Monterey Shale. Order Re Cross-Motions for Summary Judgment, Center for Biological Diversity v. Bureau of Land Management, No. 11-06174 (N.D. Cal. filed Dec. 8, 2011). However, what little we know of the environmental impacts leads to the conclusion that fracking is an inherently dangerous process that cannot be done without imposing unacceptable dangers and risks to the coastal environment, in violation of the Coastal Act. The Coastal Commission must ensure that fracking operators follow the letter of the law in applying for coastal development permits, but more importantly it must exercise its authority in denying any applications that fail to offer proof that fracking operations can take place without violating the strictures of the Coastal Act.

The Commission uses Cease and Desist Orders to halt ongoing violations, to order removal of unpermitted development, and to obtain compliance with requirements of the Coastal Act. Cal. Pub. Res. Code § 30810. Where action is taken and orders have been issued, they have been quite effective

in deterring, halting, and correction of illegal development activities in the coastal zone. The Commission should issue such orders to operators engaging in fracking activities without a coastal development permit, as the environmental effects of fracking are inconsistent with the requirements of the Coastal Act.[74]

ii. Senate Bill 4 Does Not Prohibit the Coastal Commission from Requiring Coastal Development Permits for Fracking Activities.

The newly enacted state law (commonly referred to as Senate Bill 4, or SB 4) that imposes minimal restrictions on the practice of fracking and other well stimulation treatments does not abrogate the Coastal Commission's responsibility over the coastal zone. The Coastal Commission must continue to ensure, regardless of what permitting schemes are in place at the state level, that any developments in state waters meet the strict environmental standards of the Coastal Act.

SB 4 falls short of protecting public health and the environment in several ways.[75] First, fracking and well stimulation will likely continue. The state must conduct a full scientific study that will evaluate the environmental impacts of fracking and other well stimulation techniques, but even if scientific studies reveal that fracking poses an unacceptable risk to human health and the environment, nothing in the bill mandates that the practice must be halted. Likewise, while DOGGR must adopt regulations that require operators to disclose the identities and concentration of the chemicals used during the well stimulation process, even if those chemicals are revealed to be used at concentrations and quantities that are hazardous to the environment or human health, the bill does not prohibit their use.

Starting in 2015, operators will be required to obtain a permit before conducting well stimulation; until then, fracking continues unabated if certain conditions are met. While regulations are being developed, operators need only report certain information to DOGGR before using well stimulation. Lastly, there will be delays in the required disclosure of the chemicals used in fracking operations, and where those operations are taking place. The requirement to post chemical information to a website does not take effect until January 1, 2016. Until then, citizens will likely have to file requests under the California Public Records Act to obtain any information.

SB 4 does not affect the Coastal Commission's duties and responsibilities toward protecting the coastal environment. The savings clause in SB 4 eliminates the possibility that DOGGR's environmental review and mitigation requirements for fracking could be interpreted to preempt the governor, local governments, or any other agency from requiring additional review or mitigation pursuant to other laws, regulations or orders. Cal. Pub. Res. Code § 3160(n) ("This article does not relieve the division or any other agency from complying with any other provision of existing laws, regulations, and orders."). Moreover, the savings clause ensures that interim permitting authority is just a floor and not a ceiling on additional regulation by other agencies, the governor, DOGGR, the courts, and/or local governments. The bill's author, Sen. Pavley, also stated that the law is "not intended to preempt exiting laws, regulations, and orders … including local government's authority over land use,

[74] The Executive Director of the Commission can also issue Cease and Desist Orders when someone has undertaken, or is threatening to undertake, development without a CDP or inconsistent with a CDP. Cal. Pub. Res. Code § 30809. These orders stay in effect for 90 days and are followed by Commission-issued orders if needed.
[75] Text of SB 4 *available at* http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB4.

… and the ability of any other state or local agencies … to exercise their authority within their respective jurisdictions…." The Coastal Commission must therefore continue to monitor and regulate the process of fracking in the offshore environment in order to ensure that the practice does not impair water quality, harm wildlife or marine fisheries, or impact public safety, health, and welfare.

iii. The Coastal Commission Should Encourage Local Coastal Plan Amendments that Limit Fracking

The Coastal Commission should issue guidance to local coastal authorities to encourage local coastal plan amendments that prohibit fracking. While the Coastal Commission retains exclusive authority to issue coastal development permits and regulate activities offshore, California Public Resource Code § 30601, local coastal programs can address fracking by amending their zoning codes to prohibit onshore facilities for offshore fracking from locating in the coastal zone. *See San Mateo County Coastal Landowners' Assn. v. County of San Mateo*, 38 Cal. App. 4th 523. The Coastal Commission should encourage local programs to enact such amendments and certify that they conform to the policies and standards of the Coastal Act.

Fracking in the offshore environment requires the support of extensive onshore facilities, including for the storage of toxic chemicals that are ultimately injected into wells. Chemicals that are being stored can be susceptible to accidental spills and leaks. Natural occurrences such as storms and earthquakes may cause accidents, as can negligent operator practices. Recent floods in Colorado have shown how weather events may result in uncontrolled chemical spills and leaks on a massive scale.[76] In addition to leaks and spills, surface water contamination may also occur from chemical and waste transport, chemical storage leaks, and breaches in pit liners. Contaminated surface water, in turn, can result in many adverse effects to wildlife, agriculture, and human health and safety, and may make waters unsafe for drinking, fishing, swimming and other activities.

Local governments should be encouraged to amend their Local Coastal Programs and land use plans to prohibit onshore facilities associated with offshore fracking from locating in the coastal zone. San Mateo County has prohibited onshore facilities[77] for offshore oil and gas from locating in the coastal zone, and other jurisdictions should be encouraged to follow suit.[78] Prohibiting facilities associated with offshore fracking from locating in the coastal zone will ensure that dangerous chemicals are not stored in close proximity to coastal resources, and will reduce the likelihood of spills and leaks that can affect public health and safety.

Under California law, local governments have broad authority to regulate within their jurisdictions to protect public health. The California Constitution declares that "[a] county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." Cal. Const. Art. XI § 7. This police power "is as broad as the police power exercisable by the Legislature itself, '" granting counties and cities "plenary authority to

[76] Trowbridge, A. "Colorado Floods Spur Fracking Concerns" CBS News, available at http://www.cbsnews.com/8301-201_162-57603336/colorado-floods-spur-fracking-concerns/ (accessed Oct. 2, 2013.)

[77] Onshore facilities for offshore oil are defined in the local coastal program as "temporary or permanent service bases, including but not limited to warehouses, open storage areas or stockpiling areas, offices, communication centers, harbor or wharf development or improvement, parking and helipad areas, processing plants and oil storage tanks."

[78] County of San Mateo, Local Coastal Program Policies, June 2013, at 4.23. *Available at* http://www.co.sanmateo.ca.us/Attachments/planning/PDFs/LCP/SMC_Midcoast_LCP_2013.pdf

govern" within their territories, subject only to the limitation that the local government exercise its power in accordance with state law. *Candid Enterprises, Inc. v. Grossmont Union High School Dist*., 39 Cal. 3d 878, 885 (Cal. 1985). In fact, when it comes to public health, a city or county *must* act to provide protection. *People ex rel. Deukejian v. County of Mendocino*, 36 Cal. 3d 476, 484 (Cal. 1984). In particular, Section 450 of California's Health and Safety Code states that "[t]he board of supervisors of each county shall take such measures as may be necessary to preserve and protect the public health . . . including, if indicated, the adoption of ordinances, regulations and orders not in conflict with general laws . . . ." Cal. Health & Saf. Code § 450.

California case law illustrates how the police power grants local authorities expansive abilities to regulate oil and gas operations. Indeed the cases show a long history of such regulation. Recently, a California court ruled that a City had the authority via its zoning powers to condition or refuse to grant new drilling permits. *Plains Exploration & Production v. City of Culver City*, BS 122799 at 12-13 (L.A. Co. Super. Ct. Mar 26, 2010). The court found that the City's regulatory authority was broad, stating that "[t]he City's right to regulate an existing use of land for oil production may reasonably include regulation of the number, location, and manner of drilling new wells." *Id.* at 12. Also, much older California cases show the long tradition in California of local governments regulating oil and gas operations. They describe the ability of local governments to deny drilling permits if granting them would materially affect health or safety, or if there are concerns regarding the environmental consequences of the covered actions. *Trans-Oceanic Oil Corporation v. City of Santa Barbara*, 85 Cal. App. 2d 776, 779 (Cal. 2d App. Dist. 1948), *No Oil, Inc v. Los Angeles*, 13 Cal. 3d 68, 71 (Cal. 1974).

California state oil and gas law does not preempt the power of local authorities to regulate fracking operations. While it is true that in certain situations state law can preempt local regulations, these limitations are not implicated a local LCP amendment. Generally, an ordinance cannot duplicate or contradict state law, or enter an area fully occupied by state law. *Candid Enterprises*, 39 Cal. 3d at 885. Local legislation duplicates state law "when it is coextensive therewith," and it contradicts state law "when it is inimical thereto." *Sherwin-Williams Co. v. City of Los Angeles*, 4 Cal. 4th 893, 897-898 (Cal. 1993). The state can fully occupy an area of law either by expressly manifesting its intent to do so, or by implication. *Candid Enterprises*, 29 Cal. 3d at 886.

Nevertheless, courts are often reluctant to rule in favor of the preemption of an ordinance, and this is no less true in the context of oil and gas regulations. For instance, the California Supreme Court has indicated that California's interest in the conservation of oil and gas does not trump local interests in the protection of public health. *Beverly Oil Co. v. City of Los Angeles*, 40 Cal. 2d 552, 558 (1953). Further, the complexity of state law alone cannot overcome this judicial reluctance to find preemption. The California Supreme Court has rejected the idea that the "detailed and structured procedures" established by state law alone are a sufficient basis on which to find implied preemption. *Western Oil and Gas Assoc. v. Monterey Bay Unified Air Pollution Control Dist*., 49 Cal. 3d 408, 423 (Cal. 1989)

Here, the Coastal Act creates a shared responsibility between local governments and the Coastal Commission for the planning of coastal development. Local governments are required to develop Local Coastal Programs that consist of policies and plans for coastal development within the coastal areas of their jurisdiction. *See McAllister v. California Coastal Com.* (2008) 169 Cal.App.4th 912. A local coastal program includes a land use plan, which functions as the general plan for property in the coastal zone; and a local implementation plan, which includes the zoning, zoning maps, and

other implementing actions for the coastal zone. §§ 30108.5, 30108.6. After a local government prepares its local coastal program, the Commission reviews it. If satisfied that it conforms to the policies and standards of the Act, the Commission certifies it. §§ 30512(c), 30513.

The Coastal Act is a floor, not a ceiling, in terms of coastal protection and the potential restrictions that can be enacted by local governments. As explained in *San Mateo County Coastal Landowners' Assn. v. County of San Mateo*, 38 Cal. App. 4th 523 (1995),

> The wording of [the ordinance at issue] and other sections do not suggest preemption of local planning by the state, rather they point to local discretion and autonomy in planning subject to review for conformity to statewide standards. As was noted in *City of Chula Vista v. Superior Court* (1982) 133 Cal. App. 3d 472, 488 . . ., 'the Commission in approving or disapproving an LCP does not create or originate any land use rules and regulations. It can approve or disapprove but it cannot itself draft any part of the coastal plan.' . . . Under the act, local governments, therefore, have discretion to zone one piece of land to fit any of the acceptable uses under the policies of the act, but they also have the discretion to be more restrictive than the act. The Coastal Act sets minimum standards and policies with which local governments within the coastal zone must comply; it does not mandate the action to be taken by a local government in implementing local land use controls. The Commission performs a judicial function when it reviews a local government's LCP--it determines whether the LCP meets the minimum standards of the act, but once an LCP has been approved by the Commission, a local government has discretion to choose what action to take to implement its LCP: *it can decide to be more restrictive with respect to any parcel of land*, provided such restrictions do not conflict with the act.

(Emphasis added)(citations omitted). As explained by the California Supreme Court, the Coastal Act "does not explicitly claim to preempt local planning authority." *Yost v. Thomas*, 36 Cal. 3d 561, 571 (Cal. 1984). Examination of the general provisions of the Coastal Act led the court to conclude that the local government retained wide discretion to determine both the contents of its land use plans and how to implement them. *Id.* at pp. 571-573.

Finally, SB 4 likely does not preempt a local government's ability to use its zoning and land use authority. The language of SB 4 contemplates some local control as well as a "savings clause" that preserves the authority of existing local ordinances. California courts recognize zoning as "one of the most essential powers of the government, one that is the least limitable," (*Beverly Oil Co. v. City of Los Angeles* (1953) 40 Cal.2d 552, 557), and local governments retain their authority to pass local bans and moratoriums.

Should local governments decide to amend its Local Coastal Program to prohibit onshore facilities for fracking projects, the Coastal Commission should certify those amendments as conforming to the requirements of the Coastal Act.

c. Fracking in Federal Waters Requires Compliance with the Coastal Zone Management Act

The Coastal Commission should use the full authority available to it to prohibit fracking and other unconventional oil extraction in federal waters off the coast of California because it threatens coastal resources. All oil and gas drilling operations in federal waters must comply with the mandates of the Coastal Zone Management Act (CZMA) and its regulations. Pursuant to the CZMA, federally permitted activities that have reasonably foreseeable effects on land use, water use, or natural resources in the coastal zone must be fully consistent with the state's Coastal Management Plan. 16 U.S.C. §§ 1456(c)(3) & 1456(d). Specifically,

> any applicant for a required Federal license or permit to conduct an activity, in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state's approved program and that such activity will be conducted in a manner consistent with the program. At the same time, the applicant shall furnish to the state or its designated agency a copy of the certification, with all necessary information and data.

16 U.S.C. § 1456(c)(3)(A). In addition, any plan for the exploration, development, or production from any land leased under the Outer Continental Shelf Lands Act (43 U.S.C. §§ 1331 *et seq*.) must attach to such plan a "certification that each activity which is described in detail in such plan complies with the enforceable policies of such state's approved management program and will be carried out in a manner consistent with such program." 16 U.S.C. § 1456(c)(3)(B).

By statute, the Coastal Commission is the California agency responsible for CZMA review, and the Coastal Act is part of California's federally approved "coastal zone management program." Cal. Pub. Res. Code § 30008; *see also American Petroleum Institute v. Knecht* (C.D.Cal. 1978) 456 F. Supp. 889, 895.) Any federally permitted activity which affects the coastal zone must therefore be consistent with the goals of the Coastal Act. If an activity does not "protect the ecological balance of the coastal zone and prevents its deterioration and destruction," the Coastal Commission must object exercise its authority under the CZMA and deny certification. If the Commission objects to a consistency certification, the federal permitting agency cannot issue the license or permit unless the objection is overturned by the Secretary of Commerce on appeal. 16 U.S.C. § 1456(c)(3)(A); 15 C.F.R. § 930.64.

The Coastal Commission has included in the California Coastal Management Plan a list of federal license and permit activities that reasonably can be expected to affect the coastal zone. This list includes oil and gas development activities. This list has also been provided to federal agencies that must, in turn, make the information available to applicants. *See Federal Consistency in a Nutshell,* A Guide Concerning the Operation of the Federal Consistency Provisions of the Coastal Zone Management Act of 1972 As Amended (2001). However, this list is not exhaustive; the Coastal Commission is also required to monitor unlisted federal license and permit activities and notify the relevant federal agency of those activities requiring state review. 15 C.F.R. § 930.54(a)(1). These unlisted activities are subject to federal consistency review if NOAA's Office of Ocean and Coastal Resource Management (OCRM) determines they are reasonably likely to affect coastal uses or resources. *Id.*

In sum, federally permitted projects occurring in federal waters that have reasonably foreseeable coastal effects must be fully consistent with California's Coastal Act. In order for an activity to be subject to CZMA consistency review, the activity must either be an OCS exploration, development, and production plan, or must be on a list that the State provides federal agencies, which describes the type of federal permit and license applications the State wishes to review. 15 C.F.R. § 930.53, § 930.76. Applicants must provide in the application to the federal licensing or permitting agency a certification that the proposed activity complies with and will be conducted in a manner consistent with California's coastal management program. 15 C.F.R. § 930.57(b), (d). The Coastal Commission then performs a review of the consistency certification, and either concurs with the certification, or objects if the activity is inconsistent with the Coastal Act. 15 C.F.R. § 930.63, § 930.78(c). In addition, the Coastal Commission can request federal agencies for consistency review for unlisted activities affecting any coastal use or resource. 15 C.F.R. § 930.54.

There are a host of approaches the Coastal Commission can take to ensure that fracking activity is disclosed and properly permitted in accordance with federal and state law. Because fracking affects the coastal zone and its valuable natural resources, all federal permits relating to the practice must be fully vetted by the Coastal Commission to ensure they are fully consistent with the Coastal Act.

i. Demand Consistency Reviews for Applications for Permits to Drill

First, the Coastal Commission must demand consistency review of applications for permits to drill and/or permits to modify using fracking pursuant to 16 U.S.C. § 1456(c)(3)(A), and 15 C.F.R. 930.50 *et seq.*

Permits to drill are not currently on the list of federal licenses and permits subject to certification for consistency, but the Coastal Commission can request, pursuant to 15 C.F.R. § 930.54(a)(1), that BSEE provide consistency certifications for all permits utilizing offshore fracking technology. ("State agencies shall notify Federal agencies, applicants, and the Director of unlisted activities affecting any coastal use or resource which require State agency review."). Prior to August, the Coastal Commission had not been alerted by federal agencies as to the presence of fracking in federal waters in order to determine whether coastal resources may have been affected by fracking, a fact that points to serious doubts as to whether the Coastal Zone Management Act's requirements are being met. *See* 15 C.F.R. 930.54(a)(2) (providing federal agency's notice to states "shall contain sufficient information for the State agency to learn of the activity, determine the activity's geographic location, and determine whether coastal effects are reasonably foreseeable.") However, now that the Coastal Commission is aware that the practice is occurring, it must exercise its authority and demand consistency review for permits to drill.

When providing notice to BSEE that applications for permits to drill for offshore fracking require consistency review, the Coastal Commission must include a request to the Office of Ocean and Coastal Resource Management (OCRM) to review the unlisted activity (offshore fracking), and must contain an analysis that supports the assertion that coastal effects are reasonably foreseeable from fracking activities. 15 C.F.R. § 930.54(b). The federal agency (BSEE) and the applicant will then have the opportunity to provide comments to the OCRM regarding the Coastal Commission's request. The sole basis for OCRM's approval or disapproval of the Coastal Commission's request to review the applications for permits to drill for offshore fracking will relate to whether the proposed activity's

coastal effects are reasonably foreseeable. *Id.* at § 930.54(c). Alternatively, after discussing coastal effects and consistency with the Coastal Commission, an applicant may choose to voluntarily subject itself to the consistency certification process and avoid delays associated with OCRM's approval of the Commission's request to review offshore fracking. *Id.* § 930.54(c).

Fracking activities are reasonably certain to cause coastal effects, as detailed in previous sections, and a request to review applications for permits to drill should be approved by the OCRM. 15 C.F.R. § 930.54(b). While regulations require the Coastal Commission to alert the OCRM within 30 days of receiving notice of the federal permit application, or it waives its right to review the unlisted activity, the Coastal Commission in this case did not receive actual notice of offshore fracking activities and cannot be deemed to have waived its right to review fracking permits. 15 C.F.R. § 930.54(a). *See Southern Pacific Transp. Co. v. California Coastal Com.*, 520 F. Supp. 800 (N.D. Cal. 1981) (actual notice must be required in order to trigger the thirty day period; constructive notice by publication in the Federal Register was deemed insufficient).

Once the Coastal Commission begins consistency reviews for applications for permits to drill in fracking operations, the Commission must consider very seriously whether these permits comport with the requirements of the Coastal Act. As detailed above, fracking is an inherently dangerous process with a host of known environment impacts that would be very difficult to show are in comportment with the strict requirements of the Coastal Act. Not only must the applications for permit to drill demonstrate that the project assures geologic stability, the permits must demonstrate that marine resources, biological productivity, and the quality of coastal waters would be maintained and restored. Cal. Pub. Res. Code §§ 30230, 30231, 30253.

ii. Object to Exploration, Development, and Production Plans that Include Fracking

The Coastal Commission currently reviews OCS plans, including exploration, development, and production plans, for consistency with the Coastal Act. 15 C.F.R. § 930.73. The Coastal Commission must begin to assert its authority to object to OCS plans that include fracking activities.

The consistency review process for OCS plans is fairly straightforward. Any person submitting to the Secretary of the Interior an OCS plan affecting the California coastal zone must include with the plan a consistency certification supported by a detailed description of the proposed activity, its associated facilities, the coastal effects, and any other information relied upon by the applicant to make its certification that the plan is in compliance with the Coastal Act. 15 C.F.R. § 930.58(a), § 930.76(a). The Commission, in turn, reviews the plan and supporting information to determine whether the activities described are consistent with the Coastal Act. *Id.* at § 930.77. If the Commission is not satisfied that the submitted plan will protect coastal resources to the extent required by law, the Commission can object to the consistency certification. *Id.* at § 930.78(c). The applicant may appeal the Commission's objection to the Secretary of Commerce, who can only override the Commission objection if he determines that the activities are consistent with the objectives of the CZMA or that the activities are necessary in the interest of the national security. *Id.* at § 930.121.

Ultimately, the environmental effects of fracking are inconsistent with the goals of the Coastal Act and the Coastal Commission should object to fracking included in any exploration, development or production plan reviewed for consistency pursuant to 16 U.S.C. § 1456(c)(3)(B) and 15 C.F.R. 930.70

et seq. As you know, the California Coastal Act mandates that "[m]arine resources shall be *maintained, enhanced, and where feasible, restored*." Cal. Pub. Res. Code § 30230 (emphasis added). Under the Act, "[s]pecial protection shall be given to areas and species of special biological or economic significance, and "[u]ses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes." *Id*. at §§ 30230-20231. Simply put, fracking is not consistent these standards.

Fracking involves blasting millions of gallons of water, combined with sand and toxic chemicals, into the earth under high pressure in order to break up rock formations and allow oil and gas extraction. As detailed above, fracking has been shown on land to pollute local air and water and endanger wildlife and human health. In the offshore environment, the environmental effects are not even yet fully understood because there has been no environmental review. What we do know, however, is incompatible with the directives of the Coastal Act. For example, oil and gas operators are known to dispose of their wastewater directly to the ocean.[79] In a well that is hydraulically fractured, this produced wastewater contains a host of hazardous and carcinogenic chemicals, which would not only impair the well-being of the marine ecosystem, but may also have implications for human health. The Santa Barbara channel is home to an incredibly biologically diverse marine environment and the release of any fracking chemicals with known endocrine-disrupting and carcinogenic properties could harm sensitive populations and habitat. Such release would certainly not "sustain the biological productivity of coastal waters and [] maintain healthy populations of all species of marine organisms." Cal. Pub. Res. Code § 30231. Other environmental impacts, described above, demonstrate how water, air, and light pollution, coupled with increased vessel traffic, seismic activity, and extended well lifespan will have negative consequences for the ecological balance of the coastal zone.

Furthermore, because the environmental effects of offshore fracking are not yet fully understood, the Coastal Commission has no basis for determining whether a fracking operation is able to comport with the strict environmental requirements of the Coastal Act. In other consistency reviews, the Coastal Commission has determined that the proffered consistency certification "lacks sufficient information to enable it to determine consistency with the marine resource policy."[80] The Coastal Commission must make a similar finding for any exploration, development, or production plan that involves fracking. Until available information affirmatively demonstrates that fracking will not lead to the deterioration and destruction of the coastal zone, the Coastal Commission cannot rest of assertions from the oil and gas industry that the technology is safe. The absence of any environmental analysis on offshore fracking prevents any consistency certification from offering affirmative evidence that the directives of the Coastal Act will be upheld.

The Coastal Commission has objected to consistency certifications in the offshore oil and gas context several times. In the 1980s and early 1990s, the Secretary sustained two Commission objections to exploratory drilling in the Santa Barbara channel. In the first instance, in 1984, the Coastal Commission found that exploratory drilling would interfere with commercial fishing for

[79] *See* California Coastal Commission, Consistency Determination, General NPDES permit from discharges of offshore oil and gas platforms (June 2013) *available at* http://documents.coastal.ca.gov/reports/2013/6/W13a-6-2013.pdf
[80] California Coastal Commission, Consistency Determination Objection, California portion of Hawaii - Southern California Training and Testing Program (March 2013), *available at* http://documents.coastal.ca.gov/reports/2013/4/W13a-4-2013.pdf

thresher shark and would adversely affect coastal resources and the commercial fishing facilities and activities in the coastal zone.[81] In the second case, the Coastal Commission objected to a plan of exploration based upon cumulative air quality impacts.[82] While the Coastal Commission in this instance would not be objecting to a consistency certification based upon a conflict with a commercial fishery, conflicts with other provisions of the Coastal Act, such as marine resources, biological productivity, and water quality (§§ 30230-30231), are equally applicable. Like the Chevron objection, cumulative impacts to air quality would be observed with the approval of fracking plans, as would the addition of geologic instability, increased vessel traffic, and potential for oil and hazardous substance spills. §§ 30232, 30253.

iii. Require Consistency Certifications for Plan Revisions that Include Fracking

While the Coastal Commission has clear authority to address fracking and other unconventional production techniques in future consistency reviews, there are also steps to be taken for already-occurring fracking activities. Thus far, the federal Bureau of Safety and Environmental Enforcement (BSEE) has been approving well completion plans without alerting the Coastal Commission. According to Deputy Director Alison Dettmer's staff report at the August meeting of the Coastal Commission, BSEE has approved well completion plans which include fracking activity as "minor amendments," negating the need for consistency review by the Coastal Commission. 15 C.F.R. 930.51 (only major amendments considered a 'federal license or permit' and subject to consistency review). However, the plain terms of the CZMA regulations disprove of any attempt to categorize BSEE's characterization of fracking approvals as "minor.'

The CZMA regulations state that a 'major amendment' of a federal license or permit activity means "any subsequent federal approval that the applicant is required to obtain for modification to the previously reviewed and approved activity and where the activity permitted by issuance of the subsequent approval will affect any coastal use or resource, or . . . *affect any coastal use or resource in a way that is substantially different than the description or understanding of effects at the time of the original activity*." 15 CFR 930.51(c) (emphasis added); *Norton v. California*, 311 F.3d 1162 (9th Cir. 2002) ("section (c)(3) review will be available to California at the appropriate time for specific individual new and revised plans as they arise"); *see also* CCC Director Report, Feb, 2013, http://documents.coastal.ca.gov/reports/2013/3/F6a-3-2013.pdf (Report on Revision of Development and Production Plan (DPP) for Platform Hidalgo, finding the DPP revision constituted a major amendment). In determining whether a revised plan causes "substantially different" coastal effects triggering (c)(3) review, "the opinion of the State agency shall be accorded deference and the term[] . . . 'substantially different' shall be construed broadly to ensure that the State agency has the opportunity to review activities and coastal effects not previously reviewed." 15 C.F.R. § 930.51(e).

Plans that include the addition of fracking must be considered major amendments. Adding fracking to a plan substantively alters the environmental effects of the permitted activity, primarily in the form of additional discharge of polluted wastewater, but also by extending the life of the well, increasing vessel traffic, increasing air pollutants, and increasing seismic risks.

[81] *See* Decisions and Findings in the Consistency Appeal of Exxon, 1984, *available at* http://www.coastal.ca.gov/fedcd/soc/Exxon_Thresher_Shark.pdf.
[82] *See* Decisions and Finding in the Consistency Appeal of Chevron, 1990, *available at* http://www.coastal.ca.gov/fedcd/soc/Chevron_USA.pdf.

Fracking involves technologies that stray from those used in traditional offshore drilling, and carries with it a host of additional environmental impacts. These impacts have different effects on coastal resources and must be analyzed anew in an updated consistency certification. Exploring the differences between minor and major revisions, in *Weaver's Cove Energy, LLC v. R.I. Coastal Resources Management Council*, a court found that changes increasing marine traffic without increasing the dredging itself--the activity subject to consistency review-- did not constitute a major amendment under the CZMA. 583 F. Supp. 2d 259, 278 (D.R.I. 2008). In contrast, here, the activity subject to consistency review is an OCS plan, which lays out the means by which an oil and gas company will extract explore, develop, and produce fossil fuel resources in the affected region. If the means by which the companies carry out these activities changes, and the environmental impacts and effects of marine and coastal resources are likewise altered, an updated consistency review is required in order to ensure that the activity is consistent with the requirements of the Coastal Act. The addition of fracking operations to an OCS plan affects coastal and marine environments in a "manner not consistent with the approved management program," and the Coastal Commission must therefore demand an updated consistency certification for all OCS plan revisions.

iv. Require Updates to Existing Development Plans for Inclusion of Fracking

The Coastal Commission also has authority to submit a claim to the Department of Interior specifying that fracking in ongoing drilling operations fails to comply with existing development plans and that such activities are inconsistent with the coastal management plan. 15 C.F.R § 930.85. The federal regulation requires that

> (b) If a State agency claims that a person is failing to substantially comply with an approved OCS plan . . . *and such failure allegedly involves the conduct of activities affecting any coastal use or resource in a manner that is not consistent with the approved management program*, the State agency shall transmit its claim to the [Department of Interior] region involved.
>
> (c) If a person fails to substantially comply with an approved OCS plan . . . the person shall come into compliance with the approved plan or shall submit an amendment to such plan or a new plan to [Department of Interior]. . . . [T]he *Secretary of the Interior or designee shall furnish the State agency with a copy of the amended OCS plan (excluding proprietary information), necessary data and information and consistency certification*. Sections 930.82 through 930.84 shall apply to further State agency review of the consistency certification for the amended or new plan

(emphasis added).

The OCS development plans presumably do not include the use of fracking techniques, because if they did the Coastal Commission would have been aware that the practice was occurring in federal waters. The Coastal Commission must revisit existing OCS plans and request that the permittees come into compliance with the approved plan. If they refuse to do so, any amended plan must include a full disclosure of the extraction techniques to be used and their accompanying environmental impacts. The Coastal Commission will then be able to assess whether these plans comport with the requirements of

the Coastal Act. Ultimately, as detailed above, because fracking is an inherently dangerous process with a host of threats to California's delicate coastal ecosystem, the Coastal Commission must object to the consistency certification of any OCS plan that includes the practice.

v. Require Updates to General NPDES Permit for Offshore Oil and Gas Waste Discharges in Southern California

Lastly, the Coastal Commission must consider whether it is appropriate to submit a demand to the Environmental Protection Agency to review the general NPDES permit for offshore oil and gas exploration, development and production facilities located in federal waters offshore California (General NPDES Permit No. CAG280000), in light of new information regarding offshore fracking. Consistency Determination staff report available at http://documents.coastal.ca.gov/reports/2013/6/W13a-6-2013.pdf. According to the Coastal Commission, the key concern with regards to the permit's impacts on the coastal zone is the discharge into ocean waters of produced water, drilling fluids ("muds") and cuttings. These "discharges can contain hydrocarbons and other organic compounds (i.e., benzene, toluene, etc.), dissolved salts, and metals which can adversely impact marine resources and water quality." *Id.* at 2. This permit fails to take into account the discharges associated with unconventional extraction techniques, and in particular the hazardous chemicals involved in fracking, and therefore does not fully analyze the environmental impacts associated with oil and gas activities in federal waters.

The Coastal Commission has already approved the general NPDES permit, which has limitations very similar to those included in the previous general NPDES permit, approved in 2000. While the consistency determination acknowledges the offshore disposal of produced water, it makes no mention of unconventional extraction techniques and the accompanying toxic wastewater. The staff report that "to be consistent with the marine resource and water quality policies of the Coastal Act, discharges authorized by the proposed permit cannot be found to inhibit biological productivity or cause harm to populations of marine organisms in OCS waters." However, the report ultimately recommended adoption of the consistency determination because there have been no "conclusive" research that shows that impacts from discharges translate into significant effects. The consistency determination clearly does not envision the use of fracking and therefore must be revisited to ensure that the permit takes into account the latest knowledge of the extent and impact of offshore fracking.

Conclusion

The Center appreciates the concern voiced by the Coastal Commission over offshore fracking at the August 2013 meeting and welcomes the Commission's investigation of the process in state and federal waters. We hope that this letter gives the Coastal Commission a better understanding of its authority protect the ecological balance of the coastal zone and a primer on how it may prohibit or regulate the practice of fracking. We trust the Coastal Commission will exercise its authority to the extent allowed under law in order to ensure the future health of our beloved coastline.

I would welcome the opportunity to give a presentation on this matter at the December meeting in San Francisco. Please do not hesitate to contact me at (415) 632-5309 or ejeffers@biologicaldiversity.org should you have any questions or concerns.

Sincerely,

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