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Ms. Astrid Puentes Riaño

UN Special Rapporteur on the human right to a healthy environment

RE: Inputs for HRC March Session Thematic Report.

Human Rights Impacts of Offshore Oil and Gas Activities.

Dear Ms. Puentes Riaño,

We respectfully submit the following brief in the name of the *Earthjustice* International Program in response to the call for inputs on oceans and human rights in preparation of a thematic report to be presented to the 58th session of the UN Human Rights Council.

This brief summarizes the main threats to human rights caused by offshore activities related to the exploration and production of fossil oil and gas. Concretely, we identify four categories of impacts that offshore oil and gas activities pose to human rights: (1) oil spills threaten health and livelihoods; (2) produced water and drilling fluid discharges degrade water quality and ecosystem health; (3) underwater noise pollution harms culturally and economically important species; and (4) inadequate consultation and participation processes with interested communities. This information is relevant for the fourth (main challenges) and fifth (safeguards and frameworks) key questions identified in the call for inputs.

Earthjustice is a nonprofit, non-governmental, public interest environmental law organization based in the United States. We wield the power of law and the strength of partnership to protect people's health, to preserve magnificent places and wildlife, to advance clean energy, and to combat climate change. Earthjustice works to promote the human right to a healthy environment and to fight for climate justice in countries all

over the world. We have extensive experience working with both national courts and international bodies, including the Inter-American Human Rights System, the United Nations human rights bodies, and the United Nations Framework Convention on Climate Change.

Sincerely,

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Human Rights Impacts of Offshore Oil and Gas Activities

I. Trends in global offshore oil and gas production.

States across the world continue to produce offshore oil and gas, with many countries expanding drilling into previously undeveloped seas. Globally, total offshore oil production has remained relatively stable with slight declines in total production.[1] The U.S. Energy Information Agency reported that in 2015, global offshore production accounted for nearly 30% of total oil production at 27 million barrels of oil per day.[2] The top five producers at that time were Saudi Arabia, Brazil, Mexico, Norway, and the United States.[3]

These totals do not show the complete picture, however, as production has declined in some countries while rapidly expanding in others. Brazil, for example, has grown offshore oil production by 58% from 2005 to 2015.[4] If this offshore expansion continues, Brazilian offshore drilling could account for the second-largest increase in oil production in the world by 2035.[5] The largest expansion would be from Guyana, where new offshore oil reserves counted for 7% of global crude discoveries between 2015 and 2023.[6] Much of this new production is moving into deeper waters which are more expensive and riskier to exploit.[7]

In contrast, global offshore gas developments are increasing in scale and number. Recent projections predict that global offshore gas production could increase 55% by

[1] The International Energy Association (IEA) estimates that global oil production has dropped slightly from 22.8 mb/d in 2010 to 21.6 mb/d in 2022. IEA, *The Oil and Gas Industry in Net Zero Transitions*, World Energy Outlook Special Report (Feb 2024), Table 1.2, p. 36 https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions.
[2] US Energy Information Agency (US EIA), *Offshore production nearly 30% of global crude oil output in 2015* (25 Oct. 2016) https://www.eia.gov/todayinenergy/detail.php?id=28492.
[3] *Id*.
[4] *Id*.
[5] IEA, *World Energy Outlook 2023*, 2023, p. 213 https://www.iea.org/reports/world-energy-outlook-2023.
[6] *Id*.
[7] US Energy Information Agency (US EIA), *Offshore production nearly 30% of global crude oil output in 2015* (25 Oct. 2016) https://www.eia.gov/todayinenergy/detail.php?id=28492.

2050, faster than the expected growth in onshore production.[8] This new boom in offshore gas is centered in Africa, where the share of offshore production may rise from 28% (2022) to 73% (2050) and in Latin America, where the share is expected to rise from 35% (2022) to 49% (2050).[9]

The continued reliance on offshore drilling threatens to undue commitments to fight the climate crisis. The Intergovernmental Panel on Climate Change (IPPC) makes clear that meeting the +1.5°C target of the Paris Agreement requires rapid and steep reductions in GHG emissions only possible through the phase-out of fossil fuels.[10] Similarly, in 2021, the International Energy Agency (IEA) declared that "there is no need for investment in new fossil fuel supply" in its scenario for achieving net zero emissions by 2050[11]—a finding it reiterated again in 2023.[12] In regards to offshore oil, the IEA estimates that production should fall by over 24% by 2030 and over 75% by 2050 in order to match demand under a net-zero scenario.[13] Nonetheless, governments often approve offshore projects without giving due attention to their potential climate impacts.

It is important to note that up-to-date, reliable data on offshore oil and gas production is difficult to obtain.[14] Proprietary data owned by private companies or organizations such as the IEA often charge high access fees, making access difficult for communities or civil society organizations. Recent efforts by groups such as the Global Energy Monitor are making fossil fuel production more transparent.[15] However, these

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[8] Gas Exporting Countries Forum, *Global Gas Outlook 2050*, 8th edition (March 2024) p. 96 https://www.gecf.org/_resources/files/pages/global-gas-outlook-2050/gecf-global-gas-outlook-20231.pdf.
[9] *Id*.
[10] IPCC, Summary for Policymakers, *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, p. 20 (2023) https://www.ipcc.ch/report/ar6/syr/.
[11] IEA, *Net Zero by 2050: A Roadmap for the Global Energy Sector,* 2021, p. 21 https://www.iea.org/reports/net-zero-by-2050.
[12] IEA, *World Energy Outlook 2023*, *supra,* note 5, p. 135 & 139.
[13] These percentage reductions are compared to estimated levels of offshore oil production as of 2022. IEA, *The Oil and Gas Industry in Net Zero Transitions*, World Energy Outlook Special Report (Feb 2024), Table 1.2, p. 36 https://www.iea.org/reports/the-oil-and-gas-industry-in-net-zero-transitions.
[14] While some major producers such as Brazil, Mexico, Norway, and the United States have publicly available production data others such as Saudi Arabia, Indonesia, Kuwait, and the United Arab Emirates are not easily accessed or incomplete.
[15] Global Oil and Gas Extraction Tracker, Global Energy Monitor, March 2024 Release https://globalenergymonitor.org/projects/global-oil-gas-extraction-tracker/

organizations also rely on public information and cannot provide current data when States do not readily make it available.

II. Oil spills threaten rights to health and livelihoods.

Offshore oil and gas operations regularly experience accidents, spilling oil that causes significant environmental harm and undermines livelihoods.[16] Each year, up to 800 million liters of oil enters the marine environment from the extraction, transportation, and consumption of crude oil and the products refined from it.[17] Oil spills range from relatively rare, catastrophic spills that can result from vessel collisions, operating errors, well blowouts, and bad weather, to smaller spills caused by leaks, maintenance activities, refueling, and minor accidents. At least 711 offshore blowouts and/or well releases have occurred world-wide since 1955, many of which were during the exploratory drilling phase.[18] And these are only the reported spills—many more go unreported or undetected. These spills and accidents are not easy to control. Once an accident occurs, it can release oil and other fluids into the environment for months, or even decades. For example, the longest running oil spill in history, the Taylor Energy oil spill, has leaked 249-697 barrels of oil a day into the ocean for over 20 years.[19]

Oil spills cause wide-scale harm to fisheries, wetlands, marine wildlife, and the communities that depend on these marine resources. Oil is toxic to marine wildlife and can lead to a range of lethal and non-lethal impacts, including behavioral alteration, suppressed growth, reduced immunity to disease and parasites, and histopathological

[16] While crude oil spills are especially harmful, spills of natural gas condensate also release oil and toxic compounds into the marine environment and pose similar threats to marine species. Additionally, natural gas resources often occur within the same formations as crude oil, creating the risk of crude oil spills even for operations targeting natural gas. For this reason, this submission discusses the oil spill risks of both oil and gas operations. *See* U.S. Bureau of Ocean Energy Management (BOEM), Oil Spill Effects Literature Study of Spills of 500-20,000 Barrels of Crude Oil, Condensate, or Diesel (2021), https://espis.boem.gov/final%20reports/BOEM_2021-048.pdf (discussing the characteristics of crude oil and condensate spills); *How Natural Gas is Formed*, Union of Concerned Scientists (May 9, 2023), https://www.ucsusa.org/resources/how-natural-gas-formed ("Conventional gas deposits are commonly found in association with oil reservoirs, with the gas either mixed with the oil or buoyantly floating on top").

[17] National Research Council, Oil in the Sea III: Inputs, Fates, and Effects 212 (2003).

[18] SINTEF Offshore Blowout Database, SINTEF (2021), https://www.sintef.no/en/projects/2021/sintef-offshore-blowout-database/.

[19] Expert Report of Oscar Pineda-Garcia, Ph.D. at 87, Taylor Energy Company LLC v. United States, No. 16-12C (Fed. Cl. Sept. 14, 2018).

lesions.[20] In addition, the long-term effects of oil spills, such as impaired reproduction, can impact wildlife species and ecosystems for decades.[21]

These impacts on wildlife have cascading ecological effects, affecting fisheries, recreation, tourism, and other important activities for coastal communities. For example, the 2010 *Deepwater Horizon* accident in the Gulf of Mexico was the largest accidental oil spill in human history and caused immense, long-term impacts. The spill released 3.19 million barrels of oil into the ocean,[22] killing two to five trillion larval fish and four to eight billion harvestable oysters.[23] In the aftermath of the spill, over 37% of U.S. waters were closed to fishing, with some fisheries remaining closed for over a year.[24] Concerns about seafood contamination can last even longer than fisheries closures, prolonging economic hardship for fishers and coastal communities.[25] Some studies following the Deepwater Horizon oil spill found that fishing households and others dependent upon natural resources were more susceptible to mental health symptoms even six years after the spill.[26]

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[20] S.F. Moore & R.L. Dwyer, *Effects of Oil on Marine Organisms: A Critical Assessment of Published Data*, 8 Water Research 819 (1974), https://doi.org/10.1016/0043-1354(74)90028-1; J.M. Neff & J.W. Anderson, Response of Marine Animals to Petroleum and Specific Petroleum Hydrocarbons (1981); Douglas A. Holdway, *The Acute and Chronic Effects of Wastes Associated with Offshore Oil and Gas Production on Temperate and Tropical Marine Ecological Processes*, 44 Marine Pollution Bulletin 185 (2002), https://doi.org/10.1016/S0025-326X(01)00197-7; Joseph R. Geraci & David J. St. Aubin, Sea Mammals and Oil: Confronting the Risks (2012); Rodrigo Almeda et. al, *Toxicity of Dispersant Corexit 9500A and Crude Oil to Marine Microzooplankton*, 106 Ecotoxicology & Environmental Safety 76 (2014), https://doi.org/10.1016/j.ecoenv.2014.04.028.

[21] Charles H. Peterson et al., *Long-term Ecosystem Response to the Exxon Valdez Oil Spill*, 302 Science 2082 (2003), https://doi.org/10.1126/science.1084282; Charles H. Peterson et al., *A Tale Of Two Spills: Novel Science and Policy Implications of an Emerging New Oil Spill Model*, 62 Bioscience 461 (2012), https://doi.org/10.1525/bio.2012.62.5.7; Thomas R. Loughlin (ed.), Marine Mammals and the Exxon Valdez (2013); Colin H. Walker & David R. Livingstone (eds.), Persistent Pollutants in Marine Ecosystems (2013).

[22] *Deepwater Horizon 10 Years Later: 10 Questions*, NOAA Fisheries (Apr. 13, 2020), https://fisheries.noaa.gov/news/deepwater-horizon-10-years-later-10-questions.

[23] *Assessing the Impacts from Deepwater Horizon*, NOAA Office of Response and Restoration (Apr. 4, 2020), https://blog.response.restoration.noaa.gov/assessing-impacts-deepwater-horizon.

[24] Paul A. Sandifer et al., *Human Health and Socioeconomic Effects of the Deepwater Horizon Oil Spill in the Gulf of Mexico,* 34 Oceanography 174, 181 (2021), https://doi.org/10.5670/oceanog.2021.125.

[25] *See id.* at 174 ("Consumer concerns about the safety and marketability of seafood persisted well after data demonstrated very low risk").

[26] *See* Ruth L. Eklund et al., *Oil Spills and Human Health: Contributions of the Gulf of Mexico Research Initiative*, 3 GeoHealth 391, 397-99 (2019), https://doi.org/10.1029/2019GH000217 (Summarizing findings of psychosocial studies conducted after Deepwater Horizon Spill); *See also* Sandifer et al., *supra* note 25, at 178 (Noting that while "[e]vidence for mental health distress associated with the DWH oil spill is mixed … results across a range of other, more targeted studies indicate increased reports from individuals of symptoms consistent with depression, anxiety, and post-traumatic stress").

Oil spills are also toxic to humans. Studies show that oil spill exposure is associated with an increased risk of nonfatal heart attacks,[27] acute respiratory symptoms,[28] neurological symptoms,[29] skin issues, and gastrointestinal symptoms.[30] Crude oil contains toxic volatile organic compounds (VOCs) that are released into the atmosphere when oil is spilled. When inhaled, VOCs can cause irritation, difficulty breathing, nausea, nervous system damage, and cancer.[31] The chemical dispersants used in spill response may also have toxic effects, including endocrine disruption,[32] putting coastal communities and the people involved in clean-up operations at risk if used incorrectly.

Companies are increasingly drilling in deeper waters. The risk of accidental oil spills is higher for operations in deeper waters due to higher bottom water pressure as well as higher pressure within the oil and gas pockets, among other factors. One study estimated that the probability of an incident (such as blowouts, injuries, and oil spills) increases by roughly 8.5% for every 30 meters of added depth.[33]

The best way to mitigate the risk of oil spills is to avoid offshore drilling entirely. For example, Belize and Costa Rica have enacted moratoriums on offshore drilling, and neither country has ever experienced a major oil spill within its waters.[34] Where offshore drilling is permitted, governments should at a minimum require detailed and effective oil spill contingency plans developed with public input, which outline concrete

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[27] Jean Strelitz et al., *Self-reported Myocardial Infarction and Fatal Coronary Heart Disease Among Oil Spill Workers and Community Members 5 Years After Deepwater Horizon*, 168 Environmental Research 70 (2019), https://doi.org/10.1016/j.envres.2018.09.026.
[28] Melannie Alexander et al., *The Deepwater Horizon Oil Spill Coast Guard Cohort Study: A Cross-Sectional Study of Acute Respiratory Health Symptoms*, 162 Environmental Research 196 (2018), https://doi.org/10.1016/j.envres.2017.11.044.
[29] Jayasree Krishnamurthy et al., *Neurological Symptoms Associated with Oil Spill Response Exposures: Results from the Deepwater Horizon Oil Spill Coast Guard Cohort Study*, 131 Environment International 104963 (2019), https://doi.org/10.1016/j.envint.2019.104963.
[30] Jennifer Rusiecki et al., *The Deepwater Horizon Oil Spill Coast Guard Cohort Study*, 75 Occupational Environmental Medicine 165 (2018), https://doi.org/10.1136/oemed-2017-104343.
[31] *Volatile Organic Compounds*, American Lung Association (Oct. 21, 2024), https://www.lung.org/clean-air/indoor-air/indoor-air-pollutants/volatile-organic-compounds.
[32] Isaac A. Adedara et al., *Nigerian Bonny Light Crude Oil Induces Endocrine Disruption in Male Rats*, 37 Drug & Chemical Toxicology 198 (2014), https://doi.org/10.3109/01480545.2013.834359.
[33] Lucija Muehlenbachs et al., *The Impact of Water Depth on Safety and Environmental Performance in Offshore Oil and Gas Production*, 55 Energy Policy 699 (2013), https://doi.org/10.1016/j.enpol.2012.12.074.
[34] *Belize*, ITOPF (last visited Oct. 29, 2024), https://www.itopf.org/knowledge-resources/countries-territories-regions/belize/; *Costa Rica*, ITOPF (last visited Oct. 29, 2024), https://www.itopf.org/knowledge-resources/countries-territories-regions/costa-rica/.

steps for responding to unplanned incidents. Governments should also consider limiting offshore drilling in particularly sensitive or risky areas, including in deeper waters, in the vicinity of marine protected areas, or near coastal communities.

III. Produced water and drilling fluid discharges degrade water quality and ecosystem health.

While catastrophic oil spills are relatively rare, offshore oil and gas operations pollute the marine environment daily through the release of toxic produced water and drilling fluids. These discharges gradually erode water quality and can cause long-term harm to marine ecosystems and the populations that depend on them.

The offshore oil extraction process involves injecting water into reservoir rock.[35] This injected water mixes with hydrocarbons and flows back out of the well, turning into polluted "produced water."[36] The offshore oil and gas industry produces over 300 million cubic meters of produced water on an annual basis,[37] making it the industry's largest waste stream.[38] Produced water contains compounds that are even more toxic and harmful to the environment and human health than crude oil, including salts, inorganic ions, toxic organic compounds, metals, and naturally occurring radioactive materials.[39] In offshore drilling, produced water is typically discharged into the marine environment. After release, toxic compounds in produced water can be absorbed in the sediment, collect into "sheens" of oil on the ocean's surface, or spread throughout the water column.[40] Some toxic substances can bioaccumulate in marine animals that inhabit near discharges,[41] resulting in risks to human health when the animals are caught and consumed.

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[35] Almat Kabyl et al., *A Risk-based Approach to Produced Water Management in Offshore Oil and Gas Operations*, 139 Process Safety and Environmental Protection 341 (2020), https://doi.org/10.1016/j.psep.2020.04.021.
[36] Fakhru'l-Razi Ahmadun et al., *Review of Technologies for Oil and Gas Produced Water Treatment*, 170 Journal of Hazardous Materials 530 (2009), https://doi.org/10.1016/j.jhazmat.2009.05.044.
[37] OSPAR Commission, *Produced Water Discharges from Offshore Oil and Gas Installations 2009-2019*, OSPAR'S Offshore Industry Committee: Fact Sheet 2022, OSPAR publication 906/2022, available at https://www.ospar.org/documents?v=48861.
[38] Jerry Neff, Kenneth Lee, & Elisabeth M. DeBlois, *Produced Water: Overview of Composition, Fates, and Effects*, *in* Produced Water (2011).
[39] Kabyl et al., *supra* note 36.
[40] OSPAR Commission, *Assessment of the Impacts of the Offshore Oil and Gas Industry on the Marine Environment*, OSPAR Quality Status Report 2023 (2022) at p. 30.
[41] Jerry Neff, Kenneth Lee, & Elisabeth M. DeBlois, *supra* note 39.

In addition to produced water, offshore drilling also requires significant quantities of drilling fluids and "muds" for maintaining the drill bit and removing drill cuttings. These drilling fluids are often discharged into the marine environment at the seafloor near the well site, potentially causing the smothering of benthic (bottom-dwelling) organisms and triggering broader ecosystem impacts.[42] Like produced water, spent drilling fluids have been found to contain toxic heavy metals and carcinogenic components,[43] leading to both environmental and human health concerns.[44]

Some countries have regulated the discharge of produced water and drilling fluids. For example, the OSPAR Commission has adopted a standard of 30 mg/L of oil content in produced water discharged into the marine environment, and requires annual reporting on compliance with this standard by parties to the OSPAR Convention.[45] Argentina and Venezuela impose an even stricter limit of 15 mg/L on the oil content of produced water.[46] The OSPAR Commission and U.S. Environmental Protection Agency also limit the use and discharge of drilling fluids to only those that meet certain toxicity and biodegradation criteria.[47] These standards are essential for ensuring that produced water and drilling fluids are at least minimally treated before they are released into the marine environment.

IV. Underwater noise pollution harms culturally and economically important species.

[42] *See* Hilde C. Trannum et al., *Effects of Sedimentation from Water-Based Drill Cuttings and Natural Sediment on Benthic Macrofaunal Community Structure and Ecosystem Processes*, 383 Journal of Experimental Marine Biology and Ecology 111 (2010), https://doi.org/10.1016/j.jembe.2009.12.004 ("Offshore drilling activities discharge large amounts of drill cuttings … and cause increased sedimentation around oil and gas installations. These discharges may affect benthic fauna not only through sedimentation (burial), but also through changed grain size and particle shape, toxic effects and oxygen depletion").
[43] Mfoniso Antia et al., *Environmental and Public Health Effects of Spent Drilling Fluid: An Updated Systematic Review*, 7 Journal of Hazardous Materials Advances 100120 (2022), https://doi.org/10.1016/j.hazadv.2022.100120.
[44] *Id.*; E. Broni-Bediako & R. Amorin, *Effects of Drilling Fluid Exposure to Oil and Gas Workers Presented with major Areas of Exposure and Exposure Indicators*, 2 Research Journal of Applied Sciences, Engineering, and Technology 710 (2010), https://maxwellsci.com/print/rjaset/v2-710-719.pdf.
[45] OSPAR Recommendation 2001/1.
[46] Yiqian Liu et al., *A Review of Treatment Technologies for Produced Water in Offshore Oil and Gas Fields*, 775 Science of the Total Environment 145485 (2021), https://doi.org/10.1016/j.scitotenv.2021.145485.
[47] International Association of Oil & Gas Producers, Environmental Effects and Regulation of Offshore Drill Cuttings and Discharges at p. 27 (May, 2021), https://www.iogp.org/bookstore/product/environmental-effects-and-regulation-of-offshore-drill-cuttings-discharges/.

Exploration and preparatory activities for offshore developments also create underwater noise pollution. In the initial phases of exploration, operators conduct seismic surveys to locate oil and gas reserves under the seabed. These surveys shoot loud blasts from powerful air guns at 10-second intervals, 24 hours a day, seven days a week, for months on end. This noise is louder than that of a rocket launch and in some cases, can be audible nearly 4,000 km from the source.[48] Exploratory drilling also generates noise pollution, through the use explosives to create holes to find minerals and drill test wells.[49]

The noise from air guns and drilling is loud enough to cause hearing loss in nearby marine organisms that are sensitive to sound, such as whales, seals, sea turtles, and certain fish.[50] Even miles away from the source, noise levels are loud enough to trigger behavioral changes, such as shifts in communication, migratory paths, swimming speed, and feeding.[51] Additionally, offshore production increases vessel traffic, which contributes to elevated noise levels and can lead to chronic stress and other harmful effects in marine organisms.[52] Greater ship traffic also increases the risk of vessel strikes which can kill endangered sea turtles and large marine mammals.[53]

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[48] *See* Sharon L. Nieukirk et al., *Sounds from Airguns and Fin Whales Recorded in the Mid-Atlantic Ocean, 1999-2009,* 131 Journal of the Acoustical Society of America 1102 (2012), https://doi.org/10.1121/1.3672648 ("In some cases, airgun sounds were recorded almost 4000 km from the survey vessel").

[49] Oil and Petroleum Products Explained, U.S. Energy Info. Admin., https://www.eia.gov/energyexplained/oil-and-petroleum-products/oil-and-the-environment.php (last visited Mar 11, 2021); Craig Freudenrich & Jonathan Strickland, How Oil Drilling Works, Locating Oil, HOWSTUFFWORKS, https://science.howstuffworks.com/environmental/energy/oil-drilling2.htm (last visited Mar. 12, 2021).

[50] *See, e.g.,* Jonathan Gordon et al., *A Review of the Effects of Seismic Surveys on Marine Mammals*, 37 Marine Technology Society Journal 16 (2003), https://doi.org/10.4031/002533203787536998; Arthur N. Popper et al., *Effects of Exposure to Seismic Airgun Use on Hearing of Three Fish Species*, 117 Journal of the Acoustical Society of America 3958 (2005), https://doi.org/10.1121/1.1904386.

[51] *See, e.g.,* Jonathan Gordon et al., *A Review of the Effects of Seismic Surveys on Marine Mammals*, 37 Marine Technology Society Journal 16 (2003), https://doi.org/10.4031/002533203787536998; Clara Monaco et al., *Cetacean Behavioral Responses to Noise Exposure Generated by Seismic Surveys: How to Mitigate Better?*, 59 Annals of Geophysics 1593 (2016), https://doi.org/10.4401/ag-7089.

[52] Anrew J. Wright et al., *Concerns Related to Chronic Stress in Marine Mammals* (2009), available at https://www.researchgate.net/profile/Andrew-Wright-42/publication/239782299_Concerns_related_to_chronic_stress_in_marine_mammals/links/64b8427e8de7ed28baad9378/Concerns-related-to-chronic-stress-in-marine-mammals.pdf; Rosalind M. Rolland et al., *Evidence that Ship Noise Increases Stress in Right Whales*, 279 Proceedings of the Royal Society B (2012), https://doi.org/10.1098/rspb.2011.2429.

[53] Julia Hazel & Emma Gyuris, *Vessel-related mortality of sea turtles in Queensland, Australia*, 33 Wildlife Rsch. 149 (2006), https://doi.org/10.1071/WR04097; Kristen M. Hart et al., *Marine threats overlap key foraging habitat for two imperiled sea turtle species in the Gulf of Mexico*, 5 Front. Mar. Sci. 336 (2018),

The same species that are particularly vulnerable to noise pollution and ship strikes are often spiritually and culturally important to coastal communities. For example, the First Nations Gunditjmara People in southern Australia have passionately rallied against seismic blasting in nearby coastal waters due to predicted impacts on culturally and ecologically important whale and sea turtle species.[54] The community noted that "[T]he whales need to hear and reconnect with our song rather than this seismic blasting that's pushing them away from these sacred places that their grandmother lines of their kin have come to for thousands of years."[55]

Like oil spills, noise pollution and ship strikes can trigger cascading ecosystem impacts. For instance, seismic surveys have been found to kill a significant proportion of zooplankton in the water column,[56] reducing a key food source for many culturally and economically important fisheries.

Noise pollution and vessel strikes are an inevitable consequence of offshore oil and gas production. These impacts should be mitigated as much as possible; for example, through requiring visual and acoustic monitoring for marine species throughout the duration of surveys and designing the timing and location activities to avoid overlap with important biological seasons and habitats.[57] Governments should also require comprehensive environmental impact assessments that are prepared by independent experts, quantitatively model noise impacts, and consider indirect and cumulative ecosystem-level consequences. Impacts to fisheries, communities, and cultural heritage should also be well-understood before a project is permitted to proceed.

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https://doi.org/10.3389/fmars.2018.00336; Renée P. Schoeman et al., *A Global Review of Vessel Collisions with Marine Animals*, 7 Front. Mar. Sci. (2020), https://doi.org/10.3389/fmars.2020.00292.

[54] David Prestipino, *Southern Blast: Locals Step Up Fight Against Seismic Blasting*, National Indigenous Times (Oct. 14, 2023), https://nit.com.au/14-10-2023/8133/southern-blast-locals-step-up-fight-against-seismic-blasting.

[55] *Whale Dreaming: SOPEC, Birthing Trees, and the Resistance of Healing Country: An Interview with Yaraan Couzens-Bundle*, Friends of the Earth Australia (Sep. 13, 2023), https://www.foe.org.au/cr_whale_dreaming

[56] Robert D. McCauley et al., *Widely Used Marine Seismic Survey Air Gun Operations Negatively Impact Zooplankton*, 1 Nature Ecology & Evolution 0195 (2017), https://doi.org/10.1038/s41559-017-0195.

[57] Douglas P. Nowacek et al., *Responsible Practices for Minimizing and Monitoring Environmental Impacts of Marine Seismic Surveys with an Emphasis on Marine Mammals*, 39 Aquatic Mammals 356 (2013), https://ocr.org/pdfs/papers/Nowacek_et_al_2013%20final_in_AM_Sakalin.pdf.

V. Inadequate consultation and public participation processes with interested communities.

Communities affected by offshore developments face greater challenges when exercising their rights to consultation and public participation as compared to onshore projects. Offshore drilling is often less visible. Wells can be located far from shores, and initial exploration through seismic surveys take place on unobtrusive ships without the need for large infrastructure. In addition, collective property rights, where recognized, are more clearly defined and effectively enforced over land than over seas, even though these waters are equally important for traditional cultural and economic practices of coastal communities. Public participation for offshore developments also suffers from many similar problems as for onshore projects, including poorly conducted impact assessments, lack of access to information, and failure to respect local decision-making practices.

However, some States have shown advances in enforcing consultation and participation rights regarding offshore drilling. South African courts recently ruled that offshore oil and gas exploration near South Africa's Wild Coast region was unlawful for failing to consult traditional communities and for ignoring impacts to their rights to food, livelihood, and culture.[58] The lower court found that the offshore drilling companies, Shell and Impact Africa, failed to consult communities with customary fishing rights, never conducted an environmental impact assessment, and gave no notice to communities in their local language.[59] South Africa's Supreme Court of Appeals, upholding the lower court's finding, noted that the consultation process "which was more illusory than real, was thus manifestly inadequate."[60]

Another positive example of courts upholding indigenous peoples' consultation rights in offshore drilling comes from the Tiwi Islands off Australia's northern coast. In

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[58] *Minister of Mineral Resources and Energy and Others v Sustaining the Wild Coast NPC and Others v Minister of Mineral Resources and Energy and Others* (Case no 3491/2021) High Court of South Africa (Eastern Cape Division, Makhanda) (1 Sept. 2022) https://www.saflii.org/za/cases/ZAECMKHC/2022/55.html.
[59] *Id.* ¶ 31.
[60] *Minister of Mineral Resources and Energy and Others v Sustaining the Wild Coast NPC and Others* (Case no 58/2023; 71/2023; 351/2023) [2024] ZASCA 84 (3 June 2024), ¶ 24 https://www.saflii.org/za/cases/ZASCA/2024/84.pdf.

2022, members of the Munupi clan challenged offshore gas drilling in the Barossa gas field, a $USD 3.6 billion offshore project developed by Santos.[61] Given their longstanding spiritual connections to the ocean and traditional activities in the waters affected by the project, a representative of the Munupi clan asserted that Santos failed to consult them and did not properly inform them of the project's impacts. Before ruling, the federal court took the exceptional measure of accepting the clan's invitation to hold hearings on the clan's traditional territory to receive direct testimony from members. At the hearings, clan members expressed their concerns about risks to sea animals and spirits, and one stated "[w]hen someone drills underground or in the sea and it's close to the proximity of your land, or your boundary in whitefella way — in our way, spiritually, they are drilling a hole in our body."[62] Later that year, the court agreed with the Munupi clan and revoked the project's environmental permit, ruling that Santos had failed to consult with traditional rights holders.[63]

States must ensure that all interested communities have an adequate opportunity to exercise their rights to public participation and consultation in offshore developments. If drilling affects the traditional territory of indigenous or tribal peoples, including any seas important for traditional activities, then States must also guarantee that these peoples are adequately consulted and that their free, prior, and informed consent be obtained.

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[61] Bardon, Jane, *Tiwi traditional owners launch Federal Court action to try to stop Santos Barossa gas field,* ABC News (6 June 2022) https://www.abc.net.au/news/2022-06-07/nt-tiwi-islands-launch-court-action-santos-barossa-consultation/101128926.

[62] Breen, Jacqueline, *Legal challenge by Aboriginal traditional owners to Santos' Barossa gas project hears evidence on Tiwi Islands,* ABC News (22 Aug. 2022) https://www.abc.net.au/news/2022-08-23/nt-santas-barossa-gas-tiwi-islands-court-hearing/101357588.

[63] The full federal court later upheld the decision on appeal. *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (2 Dec. 2022) https://www.judgments.fedcourt.gov.au/judgments/Judgments/fca/full/2022/2022fcafc0193.