K&L GATES

BLUE ECONOMY

October 2020

KEY CONTACTS

ANKUR K. TOHAN

Partner
Seattle
+1.206.370.7658
ankur.tohan@klgates.com

ROBERT M. SMITH

Partner
Seattle
+1.206.370.5743
robert.smith@klgates.com

J. TIMOTHY HOBBS

Partner
Seattle and Washington, D.C.
Seattle: +1.206.370.7664
Washington, D.C.: +1.202.661.3755
tim.hobbs@klgates.com

ALYSSA A. MOIR

Partner
Seattle
+1.206.370.7965
alyssa.moir@klgates.com

MATTHEW P. CLARK

Associate
Seattle
+1.206.370.7857
matt.clark@klgates.com

NATALIE J. REID

Associate
Seattle
+1.206.370.6557
natalie.reid@klgates.com

INTRODUCTION

The Blue Economy refers to that broad category of economic sectors and industries that seek to make sustainable and beneficial use of offshore marine resources on and above the Outer Continental Shelf (OCS). The Blue Economy includes many traditional economic sectors, such as shipping, fishing, coastal tourism, and telecommunications, in addition to new sectors such as renewable energy, seabed mining, and offshore carbon storage. In this brief overview, we will highlight three of the largest sectors within the burgeoning area known as the Blue Economy: fisheries, aquaculture, and offshore wind.

As land-based resources become increasingly scarce, some industries are turning their focus to the development of marine-based resources for food, energy, and economic production. While there is a long history of marine-based natural resource development, globalization of markets and improvements in technology are driving the rapid expansion of a "Blue Economy." Countries like Norway and Sweden are international leaders in many Blue Economy industries. The United States is poised to capitalize on its unique opportunities, given its vast OCS and Exclusive Economic Zone (EEZ), to develop a significant Blue Economy of its own. However, there are several challenges that must be overcome if the United States is to become a global leader in sustainable marine industries.

CONTENTS

FISHERIES

The Earth's oceans have long been a key resource for food production. As global populations and standards of living increase, demand for sustainable and renewable sources of dietary proteins is also increasing.[1] Well-managed fisheries can help supply these demands. The waters offshore of the United States offer unique opportunities for investment in this growing sector, but those opportunities are not without challenges. Outlined within this guide are key opportunities, as well as potential conflicts, regulatory challenges, resource management issues, and environmental concerns associated with this sector of the Blue Economy.

Opportunities

The long-term trend in global wild-capture fisheries has been relatively stable for approximately 30 years, with catches generally fluctuating between 86 and 93 million tons per year.[2] In 2018, total global capture fisheries production reached a record level of 96.4 million tons.[3] This production has attempted to keep up with rising global seafood consumption. In fact, global seafood consumption has increased at a rate significantly above that of world population growth, with the annual growth rate of seafood consumption averaging 3.1 percent in the period of 1961-2017, almost twice the 1.6 percent annual population growth rate.[4]

Commercial fisheries offer the potential for a sustainable and renewable source of food for much of the worlds' population and opportunities exist to expand fishery operations in the United States.

Regulatory Challenges

United States fisheries face a variety of regulatory challenges, with the most pressing being fisheries exclusion zones, the evolving requirements of the Endangered Species Act (ESA), changing regulations governing catch limits and fishing gear, and the need for observers on commercial fishing vessels.

Fisheries Exclusion Zones

A significant challenge facing commercial fishing is the introduction of fisheries exclusion zones or Marine Protected Areas (MPA). Generally, these are marine areas where fishing may be prohibited or restricted due to state or federal laws that establish conservation priorities. These protected areas exist in a variety of forms and are established and managed by all levels of government.[5] Approximately 26 percent of U.S. marine waters are protected by some form of MPA.[6] While 85 percent of U.S. MPAs are multiple use, commercial fishing is still prohibited in 80 percent of these multiple use areas.[7]

Examples of MPAs include those off the coast of California, described as Marine Protection Areas and Marine Managed Areas under California law.[8] California currently has 124 MPAs.[9] Fishing in these areas is either prohibited or restricted to certain species and particular types of fishing gear.[10] While the largest MPA is located near U.S. Pacific islands,[11] other large MPAs exist along the eastern seaboard in areas frequently used by commercial fishing operations. One recent example that has generated some controversy is the Northeast Canyons and Seamounts Marine National Monument, which was declared a marine sanctuary in 2016 by President Obama.[12] The sanctuary covers an area of 4,913 square miles approximately 130 miles east-southeast of Cape Cod.[13] The proclamation establishing the sanctuary prohibited commercial fishing, and a collection of commercial fishing interests brought a

lawsuit challenging that prohibition.[14] While that lawsuit was unsuccessful, President Trump recently issued a proclamation revoking the ban on commercial fishing in the sanctuary.[15] President Trump's proclamation is currently being challenged in court,[16] but the episode serves to illustrate the tensions between MPAs and commercial fishing interests.

Endangered Species Act

The ESA provides a broad mandate to protect specific species as well as their critical habitat. For example, commercial fisheries have faced challenges over the use of certain types of fishing gear that might harm or kill the endangered North Atlantic right whale.[17] Under pressure from environmental groups, the National Oceanic and Atmospheric Administration (NOAA) has modified fishing gear regulations and made use of seasonal fishery closures to help protect the whales, but these changes have not fully resolved the controversy and environmental groups continue to advocate for further restrictions to protect ESA-listed species.[18]

Similarly, a recent successful lawsuit brought under the ESA has resulted in the cancellation of commercial longline fishing permits in federal waters off the coast of California due to threats to the endangered Pacific leatherback turtle.[19] A court also recently invalidated an environmental assessment prepared by the National Marine Fisheries Service (NMFS) establishing regulations for the American lobster fishery on the basis that it failed to take account of the impacts to the right whale.[20]

These developments highlight the need for the industry to work with regulators to continue to monitor and evaluate the impact of fisheries on ESA-listed species and develop technological solutions that minimize the impact on ESA species while limiting the significant economic impact to fisheries that can result from early seasonal closures or overly restrictive catch limits.

Catch Limits

Following 2007 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the United States has made great progress in ensuring that scientifically based catch limits are set and adhered to prevent overfishing and rebuild overfished stocks. Challenges remain in obtaining necessary scientific and sampling data to set sustainable catch limits, and ensuring that catch limits are adhered to so that stocks can continue to produce maximum sustainable yields over the long term.

NMFS and the Regional Fisheries Management Councils have the responsibility for managing marine fisheries resources in the waters of the United States. Under the MSA, NMFS must manage fisheries to maintain optimum yield on a continuing basis while preventing overfishing.[21] In 2007,[22] the MSA was reauthorized and amended to require annual catch limits for every species of fish managed by NMFS. NMFS accomplishes this by conducting population assessments of U.S. fisheries to evaluate and report the status of managed fisheries. These stock assessments project the amount of fish that may be caught every year while preventing overfishing, protecting the marine ecosystem, and, if necessary, rebuilding overfished stocks.[23] These limits are then incorporated into fishery management plans (FMPs), the content and standards of which are governed by the MSA. If catch of a stock approaches or exceeds its annual catch limit, NMFS managers use accountability measures to ensure the limit is not exceeded or to correct for any overage.[24] Accountability measures are usually some combination of size limits, trip limits, gear restrictions, and seasonal closures.

Fish stocks naturally fluctuate in size and determining their capacity to produce sustainable yields necessarily depends upon adequate data collection and many assumptions and estimates. It is critical that industry members and trade associations participate in the preparation of FMPs by Regional Fisheries Management Councils, employing science and statistical analysis where possible to support estimates of sustainable catch limits and to ensure that appropriate accountability measures are in place for all sectors to ensure catch limits are followed. Ultimately, protecting the resource from overfishing ensures a long-term sustainable supply.

One effective management strategy employed in commercial fisheries is individual fishing quota or "catch share" programs, whereby long-term harvest privileges are allocated among participants in the fishery. Now referred to as "limited access privilege programs" in the MSA,[25] several of these programs are in place in every region of the country, including for some of the most valuable U.S. fisheries (e.g., Alaska pollock and crab). These programs work by aligning economic incentives of those engaged in the fishery with long-term conservation objectives. With a durable privilege to harvest a fixed percentage of the stock over the long-term, participants benefit from ensuring the stock does not become overfished and is able to produce maximum yields. These programs generally require every pound of fish to be accounted for, often in near real-time, and thus effectively guarantee that catch limits will not be exceeded. Catch share programs have demonstrated significant biological, economic, and safety benefits that are superior to other methods of managing fisheries. All of these benefits improve stability and predictability, and thus foster investment and innovation in these fisheries.

Even where catch share programs are in place for the commercial fishing sector, however, challenges have arisen where another sector in a fishery is not accountable to its catch limit and thus overharvests the resource to the detriment of all users.[26] Engaging in the management process is critical to ensure that catch limits are adhered to across all sectors of a fishery.

The challenges in setting appropriate catch limits are exacerbated by climate change. Warming waters have caused changes in fish migration patterns, which has forced hundreds of ocean fish species, including some of the most economically important species to the United States, to move northward towards cooler waters.[27] This climate-change induced fish migration has led to disruption of fisheries in the United States and Canada and has

impacted the quantity of fish available to commercial fishing operations. Warming sea temperatures and fish migration patterns have also created issues with regional catch limits, which are required to go through an extensive regulatory process that may be slow to account for significant changes in the geographic distribution of certain fisheries. See also ***Scientific Uncertainty and Environmental Issues*** below.

Fishery Monitoring and Observers

Commercial fishing operations are also required to permit fishery observers to monitor their operations and catches.[28] NOAA manages an observer program that places professionally trained biological scientists on commercial fishing ships to gather first-hand data on what is caught and thrown back by U.S. commercial fishermen. Not every vessel requires an observer for each trip and some observers are stationed at docks or processing facilities. The number of vessels with observer coverage varies with each fishery.

Some commercial fishing operations object to carrying observers due to their high cost. Opponents also contend that observers are burdensome, and more are deployed than are necessary to collect relevant data.[29] Concerns have also been raised about the potential for liability if an observer were to be injured onboard a fishing vessel. In the wake of the COVID-19 pandemic, concerns have also been raised that the observers, who move from ship-to-ship and often live in shared housing with other observers, could serve as a vector for spreading COVID-19. While NOAA temporarily waived the observer requirements at the start of the pandemic,[30] it has since resumed the program despite protests from many commercial fishing interests.[31]

Recently, some commercial fishing and environmental groups have been advocating for the use of electronic monitoring as an effective replacement for on-board observers. Electronic monitoring may use a combination of video cameras to record gear hauling and fish sorting, vessel monitoring systems to track the vessel's route and pinpoint fishing times and locations, and other sensors to monitor gear usage and fishing activity.[32] Electronic monitoring could prove as successful as on-board monitoring of catches but at less cost and with fewer problems.

Gear Restrictions

Gear restrictions also pose a challenge to commercial fishing. NOAA has implemented a variety of restrictions on what types of fishing gear may be used in different fisheries.[33] For instance, fishing with large mesh gillnets is prohibited in certain areas off the coast of Virginia and North Carolina during certain months,[34] and a similar prohibition on the use of drift gillnets exists for fisheries off the coasts of Oregon and California.[35] Other restrictions require the use of in-net devices. These gear restrictions are intended to reduce bycatch (unintentional catch) of sea turtles, marine mammals, sea birds, and non-target fish. Gear restrictions may change from year to year, which also introduces a level of uncertainty for commercial fishing operations.

User Conflicts

As the Blue Economy develops, conflicts among entities seeking to develop or manage natural resources in the OCS may arise among different industries. Commercial wild-caught fisheries make use of large areas of the open ocean and as such may come into conflict with other industries located in these areas. Commercial fisheries may come to overlap with other offshore developments, such as oil and gas, telecommunications, governmental projects, aquaculture, and offshore wind energy.[36]

User conflicts between commercial fishers and offshore wind development offer an example of both these conflicts and potential solutions. Currently, the United States has developed Wind Energy Lease Areas in the Atlantic OCS. These areas overlap with fisheries locations and have the potential to lead to space-use conflicts. However, the Bureau of Ocean Energy Management (BOEM) has incorporated communication and outreach between commercial fisheries and wind development into the permitting process for offshore wind projects. Similarly, the U.S. Coast Guard (USCG) conducts Port Access Route Studies (PARS) to facilitate the separation of fixed offshore structures and commercial vessel operations. The steps taken by BOEM to create Best Management Practices and the USCG's PARS seek to facilitate early stakeholder involvement, mitigate user conflicts between fisheries and offshore wind development, and seek to provide a framework for navigating future conflicts. The BOEM Best Management Practices are closely modeled on the agency's strategy for mitigating the same conflicts with offshore oil and gas development.

The Best Management Practices developed by BOEM incorporate the following strategies to address conflicts with fisheries:

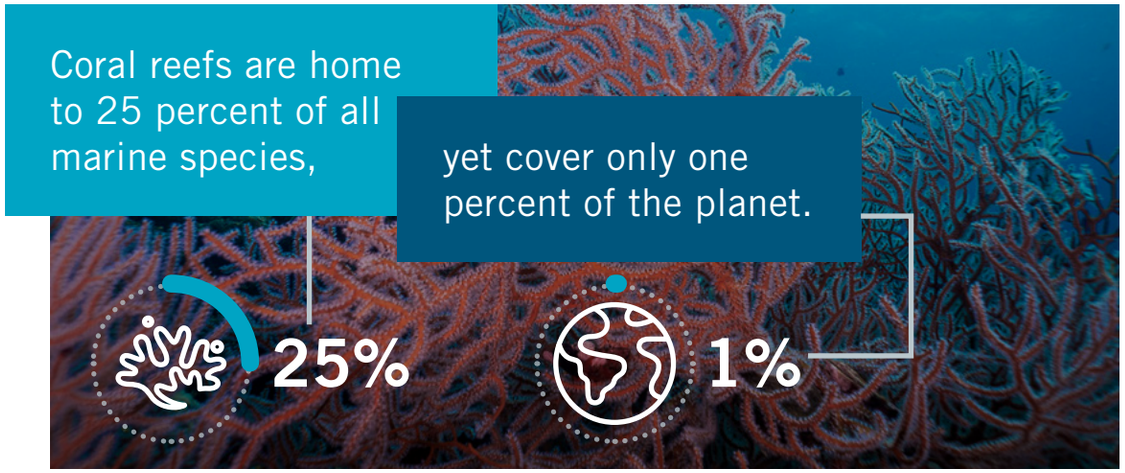
- Avoid locating energy facilities and cables near known sensitive fish habitats and within known high-use fishing areas

- Require lessees to review planned activities with potentially affected fishing organizations and port authorities to prevent unreasonable fishing gear conflicts
- When possible, conduct noise-generating activities during closed fishing periods or seasons
- Consider the addition of lights and/or radar reflectors to increase the ability of vessel captains to see energy structures; use practices and follow operating procedures that reduce the likelihood of vessel accidents and fuel spills
- Where possible, bury cables to prevent conflicts with fishing gear[37]

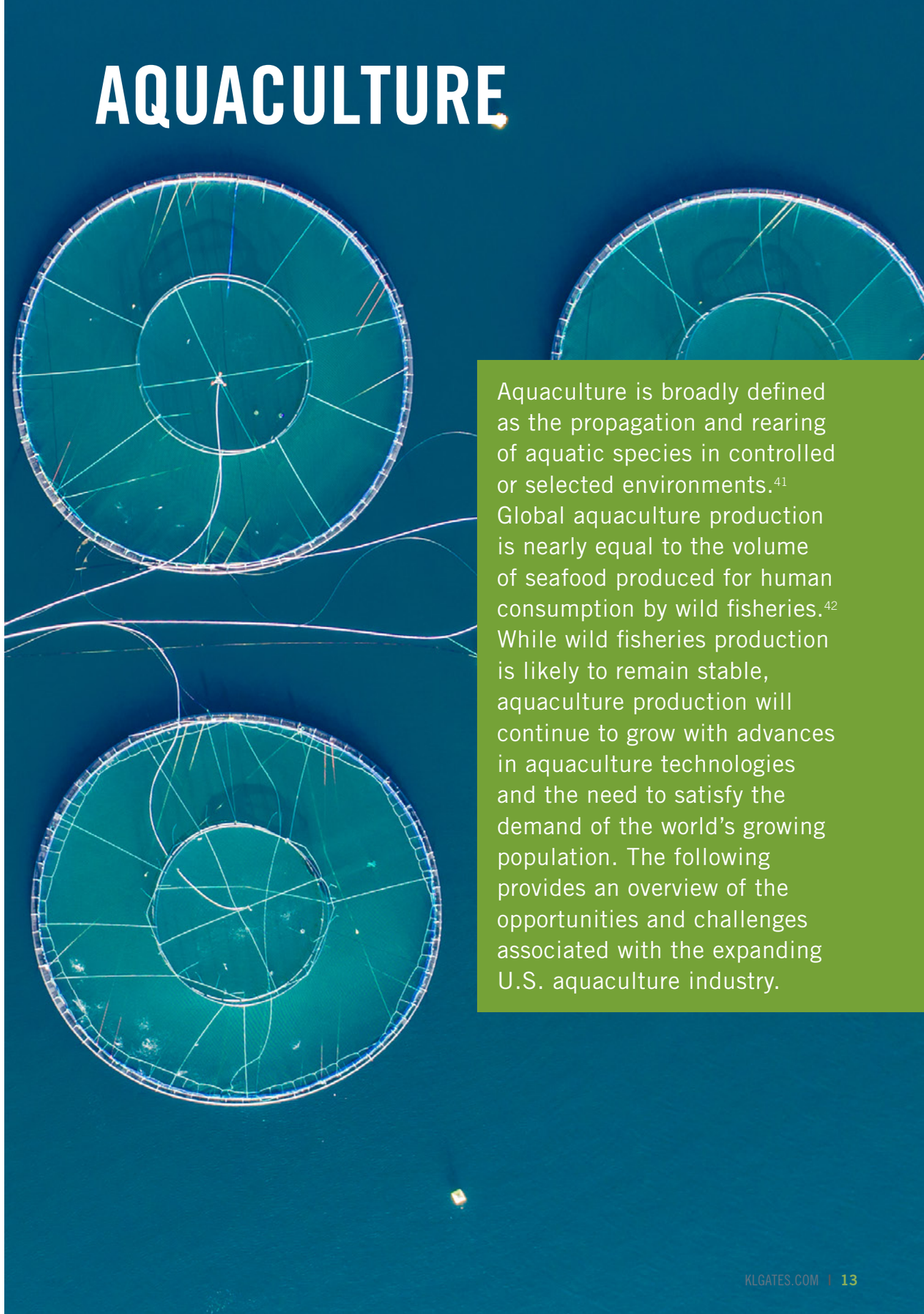
Careful planning and early engagement with resource agencies and other industries will help reduce the likelihood that user conflicts limit the expansion of the fisheries industry.

Scientific Uncertainty and Environmental Issues

An emerging issue for fisheries is the impact of rising ocean temperatures on the migratory patterns of fish.[38] Particularly in colder regions like New England and Alaska, warming temperatures are pushing fish northwards in search of cooler temperatures.[39] Changes in the distribution and location of fish have affected where, when, and what fishers catch. Currently, scientific uncertainty exists as to how rising ocean temperatures will affect fish migration in the future and how migratory changes will impact the commercial fishing economy. Economies in the southern states are also affected by changing ocean temperatures.[40] Rising sea levels overtake coastal wetland areas that serve as essential nursery areas for shrimp, oysters, crabs, and other commercially important seafood species. In the Pacific and Caribbean regions, warming seas are associated with the destruction of coral reef environments. Coral reefs are home to 25 percent of all marine species, yet cover only one percent of the planet. Rising temperatures and changing ocean environments are a significant source of uncertainty in the commercial fishing industry.



AQUACULTURE



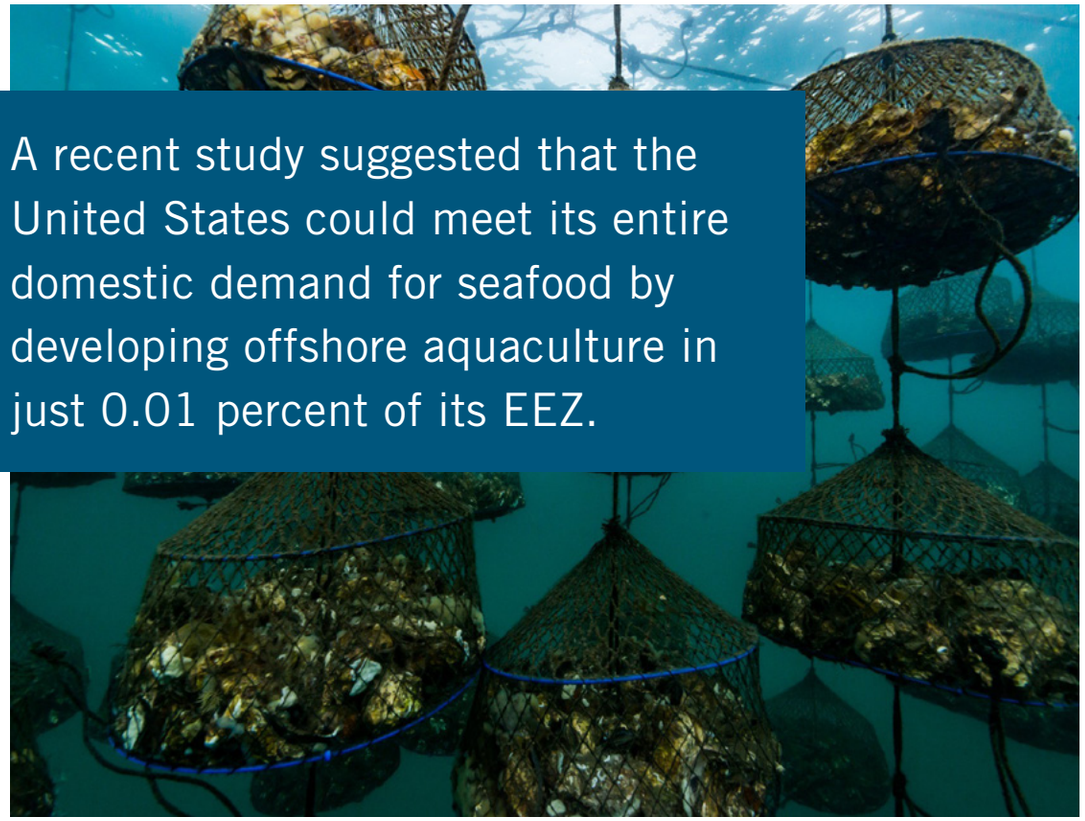
Aquaculture is broadly defined as the propagation and rearing of aquatic species in controlled or selected environments.[41] Global aquaculture production is nearly equal to the volume of seafood produced for human consumption by wild fisheries.[42] While wild fisheries production is likely to remain stable, aquaculture production will continue to grow with advances in aquaculture technologies and the need to satisfy the demand of the world's growing population. The following provides an overview of the opportunities and challenges associated with the expanding U.S. aquaculture industry.

Opportunities

The United States has the world's second largest EEZ, which spans 3.5 million square miles and is 20 percent larger than the area of all U.S. lands combined.[43] Not all of this area is suitable for offshore aquaculture, but the United States still has considerably more space to develop than many other countries.

A recent study suggested that the United States could meet its entire domestic demand for seafood by developing offshore aquaculture in just 0.01 percent of its EEZ.[44] Furthermore, the United States has a "seafood deficit"; the country imports between 60 and 90 percent of its seafood (by value) and half of that comes from aquaculture.[45] Given the vast marine resources of the United States and the as-yet unmet demand for U.S. grown seafood, there exists a large potential for growth in this area.

Currently, marine aquaculture facilities are located in nearshore state waters; no commercial facilities operate in U.S. federal waters. One of the main barriers to offshore aquaculture operations has been the complex patchwork of permitting and regulation governing this sector.[46] The recent Executive Order on Promoting American Seafood Competitiveness and Economic Growth (Executive Order 13921) has instructed several federal agencies to take action to reduce unnecessary regulatory barriers restricting American aquaculture producers.[47] In response, the U.S. Army Corps of Engineers (Corps) has proposed changes to the Nationwide Permit (NWP) program to include two new permits for finfish and seaweed aquaculture in addition to revising the current NWP 48 that authorizes shellfish aquaculture along the U.S. coast including the OCS.[48] Also in response to the Executive Order, NOAA has begun the process of identifying and evaluating Aquaculture Opportunity Areas (AOA) that will be suitable for offshore aquaculture, including designating the first two general AOAs in Southern California and the Gulf of Mexico, where it will further define smaller geographic areas suitable for the development of offshore aquaculture.[49] These recent developments promise to expand the range of opportunities to develop offshore aquaculture projects in the federal and coastal waters of the United States.



A recent study suggested that the United States could meet its entire domestic demand for seafood by developing offshore aquaculture in just 0.01 percent of its EEZ.

User Conflicts

As with fisheries, offshore aquaculture may conflict with other uses of the open oceans. The main conflicts to avoid when identifying potential aquaculture sites include existing shipping and transit lanes, oil platforms, oil pipelines, offshore wind development, military zones, and areas that are important to commercial fisheries. In addition, certain ocean users have particular conflicts with certain types of aquaculture.[50] In particular, recreational and commercial fishermen and related industries have voiced concerns regarding shellfish, finfish, and seaweed aquaculture, and the potential for such projects to occupy areas utilized for wild-caught fishing. These conflicts can be best addressed by careful review and early planning and outreach in the development phase of the project prior to the submission of project applications.

Conflicts exist between finfish aquaculture and some commercial angler groups that see aquaculture as a threat to the market for wild-caught fish. This conflict arises mainly from concerns that the supply of farmed fish will directly compete with wild-caught fish.[51] However, this concern is likely unfounded, as demand for fish in the United States is currently much higher than what the national market can provide.[52] Additionally, there continues to exist a demand for wild-caught fish, and commercial fishers are likely able to capitalize on existing markets that place a premium on wild-caught over farmed fish.[53]

Access to public boat launches can also present a user conflict for the aquaculture industry. Many public boat launches are constructed with federal funds for the primary purpose of supporting recreational use for the public. To preserve this public recreational use, some states limit or prohibit the use of public boat launches for commercial purposes. In the absence of other accessible boat launches, growers in some areas may have difficultly accessing their farms on a daily basis.

Environmental Issues

Some environmental groups and commercial fishing interests have sought to portray finfish aquaculture in a negative light and as a threat to the environment. Environmental nongovernmental organizations (NGOs) have raised a number of concerns, primarily associated with finfish aquaculture projects, including the food and antibiotics used to feed aquaculture stock and associated impacts to sediment and water quality, the cultivation of non-native species, potential for escapement,

spatial competition, and other ecological risks.[54] Some of these issues have motivated NGOs to challenge regulatory approvals of finfish projects through litigation.[55] Yet, sustainable aquaculture practices can serve as an effective counter to such opposition.[56] The best defense to such claims is for applicants to work with relevant regulatory agencies to prepare a robust environmental analysis that considers these issues and incorporates appropriate siting, best management practices, mitigation measures, and monitoring as necessary. Given that many of these issues, while common in other countries, have not been evaluated in the United States, monitoring and adaptive management is an effective tool to address concerns raised by regulators and environmental NGOs.

Regulatory Challenges

Regulatory challenges continue to act as the main barrier to the expansion of aquaculture in the United States. The United States does not have a clear framework for permitting offshore aquaculture and no federal agency has specific legislative authority authorizing it to regulate offshore aquaculture activities, although several agencies may have implicit authority under several enacted statutes.

For example, offshore aquaculture projects may need to apply for a Section 10 Rivers and Harbors Act permit and/or a Clean Water Act Section 404 permit from the Corps; a Clean Water Act (CWA) National Pollution Discharge Elimination System (NPDES) permit from the U.S. Environmental Protection Agency (EPA) and/or state authorizing agency; and consistency certification from the state coastal agency designated under the Coastal Zone Management Act (CZMA). The Corps and EPA must engage in consultation with NMFS and the U.S. Fish & Wildlife Service pursuant to ESA requirements and the MSA Essential Fish Habitat requirements. Furthermore, federal authorization from the USCG is usually required for use of private buoys. Project proponents must sometimes engage with the BOEM if the project is located near oil pipelines or platforms and others who may be using ocean space to secure permissions when necessary. Finfish and shellfish aquaculture projects will also require approval from the U.S. Food & Drug Administration (FDA) to harvest and sell product for human consumption. FDA approval is also required for any antibiotics or other supplements used to raise finfish.

Environmental Review

National Environmental Policy Act (NEPA) compliance is also required for actions in federal waters. NEPA compliance requires the federal lead agency to conduct a review of the potential environmental impacts of the project and seek public input. If the offshore project is located in state waters (usually within three miles from the shoreline), additional permits and environmental review may be required from a number of state agencies that have corresponding authority in state waters.

Health Regulation

A final regulatory challenge faced by domestic producers for molluscan shellfish in federal waters is compliance with the National Shellfish Sanitation Program (NSSP).[57] The NSSP is a federal-state cooperative program tasked with ensuring the safety of molluscan shellfish for human consumption. The NSSP is focused on the assessment of pollution sources, water quality standards for the classification of growing areas, and shipping and handling of molluscan shellfish through a Model Ordinance. In 2019, several significant changes were proposed to health regulations for offshore shellfish aquaculture that are waiting for final approval from the FDA. For prospective shellfish growers interested in operating in the EEZ, it is important to understand the NSSP requirements in the context of operating in the federal waters of the EEZ and the activities regulated by federal agencies, like the FDA, and state health authorities.

Altogether, the process of securing the necessary permits, authorizations, and consultations to operate an aquaculture facility is costly and can take years. Applicants can expedite this process through early coordination with applicable local, state, and federal regulatory agencies, coordinating a concurrent review process, developing a siting analysis that is well informed by public and stakeholder outreach, and utilizing consultants familiar with potential environmental issues to proactively analyze and address potential environmental issues of concern.

Recent Developments to Reduce Regulatory Challenges

The tides appear to be turning when it comes to easing some of the regulatory burdens on aquaculture. This year, President Trump issued Executive Order 13921[58] with a sweeping mandate to increase seafood production by streamlining the aquaculture regulatory permitting process in federal waters. In response to the Executive Order, the Corps has proposed changes to NWP 48, Commercial Shellfish Aquaculture, to address legal challenges to the prior version of NWP 48 adopted in 2017, which led to its invalidation in the State of Washington.[59] The Corps has also proposed two new aquaculture-specific NWPs for seaweed and finfish aquaculture in federal waters. If approved, these new NWPs may significantly simplify the process for obtaining seaweed and finfish aquaculture permits, through reducing NEPA requirements, simplifying the permit review process, and establishing standard terms and conditions that, upon incorporation, could reduce environmental impacts associated with such projects. The Executive Order also established NOAA as the lead agency for any aquaculture project that requires two or more agencies to proceed, requires preparation of an environmental impact statement (EIS) under NEPA, and is located outside of the waters of any state or territory and within the EEZ.

Executive Order 13921 also instructed NOAA to identify ten AOAs that represent offshore areas with a high potential for aquaculture development. The AOAs are expected to support three to five aquaculture sites of varying types including finfish, shellfish, macroalgae, or some combination thereof. The Executive Order also directs NOAA to prepare a Programmatic Environmental Impact Statement (PEIS) for each AOA

pursuant to NEPA that considers the environmental effects of the proposed AOAs. The PEIS may identify suitable species for aquaculture in the region, suitable gear for aquaculture in such locations, and suitable reporting requirements for owners and operators of aquaculture facilities in such locations. NMFS recently identified regions well suited for aquaculture based on existing spatial analysis data and current industry interest in developing sustainable aquaculture operations in those regions. These AOAs will be located off the coast of Southern California and in the Gulf of Mexico. NOAA is starting outreach to further refine where the specific AOAs will be located within these general areas and then will prepare a PEIS for each region. Aquaculture companies seeking to establish farms in these locations are urged to be in close contact with NOAA during this process to help ensure that the locations selected meet the operational and logistical requirements for their proposed project, that their proposed operation is considered during the AOA process, and that the terms and conditions associated with development within the AOA are reasonable and cost-effective.

Similarly, legislation called the Advancing the Quality and Understanding of American Aquaculture (AQUAA) Act has been introduced in the Senate, with a companion bill in the House, to provide NOAA authority to act as the primary permitting agency for offshore aquaculture. While the AQAA Act and the execution of Executive Order 13921 are still under development, if successful, they would provide clarification regarding the authority to regulate offshore aquaculture, simplify the current regulatory process, and resolve challenges the NMFS has faced over its authority to assert regulatory jurisdiction over aquaculture in the Gulf of Mexico.[60] The most recent version of the AQUAA Act was introduced in the Senate in 2020.[61]

Additional Regulatory Schemes

These developments at the federal level bode well for the future of aquaculture because they may lessen the regulatory challenges that have historically hindered efforts to develop offshore aquaculture. However, these permitting and regulatory changes are just now being implemented and may be challenged in court. Additionally, project proponents may still face regulatory hurdles at the state level, including requirements imposed by state environmental departments, CZMA consistency certification, and possibly state water quality certification under Section 401 of the CWA.

Resource Management

Responsible management of natural resources will be an important component of any aquaculture project. Site selection is critical to the success of offshore aquaculture operations. The farm site must meet logistical and operational criteria, such as depth, temperature, distance from shore or processing facilities, salinity, and distance from potential nearshore pollution sources. Site selection is also typically the most important factor in avoiding or minimizing user

conflicts or environmental impacts. Prior to submission of an application, it is advisable to conduct outreach to regulatory agencies, and commercial and recreational fishing interests to determine areas that should be avoided or if there are areas that meet operational criteria that would be preferred. Early engagement and stakeholder outreach can go a long way towards reduction or avoidance of environmental issues, project opposition, and development of well-informed site selection. For example, project applicants should seek to avoid sensitive or important habitat areas (such as seagrass or kelp beds and hard-bottom habitat or coral reefs), shipping and transit channels, oil pipelines and platforms, and important recreational and commercial fishing areas.

Scientific Uncertainty and Environmental Concerns

Given the paucity of offshore aquaculture projects in the United States, there is some uncertainty regarding environmental impacts associated with such operations. These uncertainties and lack of empirical data have contributed to a more difficult regulatory approval process as compared to projects in nearshore waters, where applicants in many areas can cite to decades of data and research to establish that properly managed and well-sited projects do not result in significant environmental impacts.

These issues pertain broadly to concerns regarding escape of cultured organisms, introduction of disease and invasive species, pollution in areas adjacent to net pens, habitat loss, and potential interaction with marine mammals. However, overall, many proponents of offshore aquaculture assert that offshore aquaculture can avoid many of the sensitive habitats, user conflicts, and species interactions present in nearshore bays and estuaries. In the short term, it is likely that these scientific uncertainties will be addressed through monitoring and reporting requirements until more empirical data is collected concerning the environmental impacts associated with offshore aquaculture projects.

OFFSHORE WIND

The United States' first offshore wind project began generating power in 2016 off the coast of Rhode Island.[62] The untapped potential of offshore wind energy is estimated to provide possibly more than 2,000 gigawatts (GW) of electricity, nearly double the total installed land-based wind power in the United States. With the potential growth in the industry comes opportunity for tremendous job market growth in the offshore sector. As the U.S. energy market continues to pivot away from fossil fuels, offshore wind generation is one of the highest trending solutions to offset the loss of generation capacity from retired coal facilities. Offshore development of wind power presents unique challenges—such as the public permitting process for federal and state permits, and combatting negative public sentiment from existing OCS users and shoreline property owners that object based upon aesthetic concerns.[63]

Opportunities

Although the concept of offshore wind has been prevalent in energy conversations, development nationwide is still in the early stages. As of April 2020, the United States has a total offshore wind capacity of over 26,000 megawatts (MW) in federal lease areas on the OCS. BOEM has issued 15 active commercial wind leases and is identifying and leasing OCS areas off the coasts of California, Hawai'i, New York, and California in 2020.[64] Yet, given the expansive reach of the U.S. OCS, there is room for significant expansion of this industry.[65]

As the clean energy economy continues to grow in the United States and the cost of renewable energy decreases, offshore wind energy presents a unique opportunity for additional generation capacity.[66] The American Wind Energy Association (AWEA) estimates that a total of 20,000 to 30,000 MW in offshore wind capacity could be developed by 2030 on the East Coast alone, resulting in up to US$25.4 billion per year in new jobs and revenue.[67] In addition to the market potential for renewable energy producers, potential growth in the offshore wind sector generates opportunities for oil and gas producers to diversify generation capabilities and transition to renewable energy. All incentives for land-based wind projects also apply to offshore wind, including both the Renewable Electricity Production Tax Credit (PTC) and the Business Energy Investment Tax Credit (ITC).[68]

User Conflicts

With the growth of Blue Economy potential comes the potential for conflict in two primary areas: (1) other potential industries wanting to capitalize on the OCS, and (2) land-based property owners. Various stakeholders that already operate in the OCS have voiced concerns about the expansion of offshore wind. All lands in the OCS to be developed for offshore wind must be leased by the federal government through BOEM. BOEM and the USCG continue to serve as mediators to reduce potential user conflicts and recognize that stakeholder outreach is essential to facilitate the development of offshore wind energy.[69] In addition to BOEM's efforts to minimize conflicts with fisheries, BOEM hosted an offshore wind and maritime industry knowledge exchange to discuss measures to minimize risk to safety and disruptions in maritime transportation operations, while supporting the development of domestic renewable energy.[70] The OCS is a dynamic and evolving environment, and an efficient use of the area will require communication and cooperation among multiple industries.

Regulatory Challenges

As the offshore wind economy grows, it will likely continue to face regulatory challenges, most notably NEPA compliance and approval. In 2007, the Minerals Management Service (MMS) that was reorganized into BOEM published an Alternative Energy PEIS for offshore wind-energy generation projects. The PEIS focuses on various alternative energy projects that may exist within the OCS, including offshore wind, wave, and ocean current energy capture technologies. The geographic scope

of the PEIS covers the OCS at various depths, excluding areas surrounding Hawai'i and Alaska. Despite the issuance of the PEIS, challenges to the permitting and approval process have encumbered the development of multiple offshore wind projects.

Well-funded shoreline property owners express strong opposition to the construction of offshore wind turbines, primarily motivated by aesthetic concerns.[71] Such challenges have delayed development timelines and spurred litigation regarding the permitting and licensing process.[72] For example, the first major offshore wind project in North America, Vineyard Wind, has faced resistance from municipalities for various reasons, including a denied permit from a Massachusetts municipality to run a transmission cable along the ocean floor and a challenged Environmental Assessment, warranting the development of a supplemental EIS to adhere to NEPA regulations.[73] These actions delayed the anticipated Record of Decision issuance by BOEM from August 2019 to March 2021.[74]

In addition, the PTC (26 U.S.C. § 45) expires at the end of 2020. While the tax credit has been extended in recent years, the confluence of a presidential election year and potential of an administration change may result in the amendment of, or change in, legislation to extend the PTC. While some uncertainty exists, it remains very unlikely that a change in the executive branch will result in the elimination of the tax credit and it could increase the probability of an extension. Also, offshore wind projects in some areas may benefit from state requirements for renewable power generation imposed on electric power suppliers.

Resource Management

As the lessor for offshore wind sites, BOEM is primarily responsible for ensuring that offshore wind is developed in a manner that is sustainable and protective of natural resources. Governed by 30 CFR §§ 585 et seq., BOEM is responsible for managing development of the nation's offshore resources on the OCS in an environmentally and economically responsible way. BOEM carries out this mandate through development of offshore wind leases, which incorporate various terms and conditions, NEPA environmental review (including the 2007 PEIS referenced above and supplemental EIS), national and regional guidelines for renewable energy activities, and programmatic oversight of offshore wind projects.

Scientific Uncertainty

Similar to offshore aquaculture, the limited number of examples of offshore wind projects in the United States means that there is some scientific uncertainty and environmental issues that remain to be further studied. Also similar to aquaculture, while wind projects can cite data and studies from nearshore/on land counterparts, these studies only partially address environmental issues in an offshore environment. For example, while interactions with birds have been frequently studied for wind farms on land, the particular species and environmental concerns may be different in an offshore environment.

BOEM established Intergovernmental Renewable Energy Task Forces (Task Forces) in states that have expressed interest in the development of offshore renewable energy.[75] The agency has engaged and will continue to engage the Task Forces, in addition to other agencies, universities, and stakeholders, in identifying critical data gaps concerning a variety of environmental issues.[76]

In addition to the continued development of scientific information, BOEM has identified several potential areas of environmental impacts that must be considered for offshore wind projects. Anchoring of the turbines to the OCS seafloor will disrupt wave turbulence, which may have an impact on ocean currents.[77] Securing the turbines will require drilling into the seafloor, which may involve the use of drilling fluids. The escape of such fluids could prove hazardous to the environment if not carefully monitored. Operation of turbines may use hazardous materials, like oil, that must be closely monitored and maintained to avoid spills or release.

Environmental Concerns

Offshore wind projects will also have to navigate various federal environmental statutes like the ESA and the Migratory Bird Treaty Act (MBTA). Under the MBTA, it is unlawful to take, kill, or attempt to take or kill any migratory bird.[78] The location and regular operation of offshore wind projects can affect migratory routes and habitat of marine and coastal species, some of which may be endangered or threatened. Any listed species under the ESA will require further analysis under NEPA, and if it is determined to take from a listed species or habitat, additional permits may be required. In general, the only marine mammals that may be affected would be in the immediate vicinity of the turbines. Impacts to fish (associated with underwater noise construction and operation) and benthic organisms on the seafloor should be considered in the environmental analysis and minimized or mitigated as necessary.[79] Migratory bird impacts are also an important consideration, and mitigation measures should be incorporated into the project design to minimize impacts and potential collisions with bird flight patterns. Construction of offshore wind turbines will require consultation to prevent the potential for any violation of the MBTA.

COMPREHENSIVE REPRESENTATION OF BLUE ECONOMY INDUSTRIES

Financing and Transactional

Our firm has a strong presence in the finance and transactional sector. We advise lenders and borrowers on the full spectrum of secured and unsecured commercial lending transactions and we have a broad-based understanding of current market terms for complex financing transactions. Our Corporate, Mergers and Acquisitions, and asset-based Finance practices have a global network of lawyers in offices across Asia, Australia, Europe, the Middle East, and the United States working on a wide array of financing transactions.

We frequently counsel clients on acquisitions and divestitures of fishing industry vessels and related assets, vessel-owning entities, and fishing quotas, including compliance with U.S. citizenship ownership and USCG documentation requirements. Our lawyers guide clients through complex transactions, taxation issues, financing, and restructuring. In addition to acquisitions and divestitures, we advise clients on fishing and delivery agreements, custom processing arrangements, credit agreements, secured vessel financing, project financing, leveraged lease transactions, and international structured financial transactions. We also counsel clients on the formation and operation of fishery cooperatives and trade associations.

Policy

Our global Policy and Regulatory practice is unique in its focus across our fully integrated platform on the intersection of business and government. We recognize the real impacts that government action or inaction can have in achieving business objectives. Our lawyers and policy professionals from around the globe draw on their deep, collective experience working with and in government to help clients consider and address the legislative, regulatory, and judicial options available to them. With offices in 11 world capitals and several U.S. state capitals, as business issues increasingly involve multiple government authorities, our global reach allows us to develop and execute coordinated government engagement strategies in multiple locations.

We assist businesses with strategic participation in the process of enacting and amending environmental laws. Our lawyers have participated in the negotiation, drafting, and enactment of statutes, regulations, and executive orders and have testified before legislative and regulatory panels on leading-edge issues for our clients. Our success is based on continuous involvement with national and regional industry leaders, as well as with the U.S. Congress, federal land management agencies, Native American tribes, and state and local governments.

Environmental policy is in many instances developed through litigation, particularly challenges to formal regulatory authority rules and informal policies and guidance. We have successfully challenged a number of rules for our clients, and we monitor related litigation by others for opportunities to bring our clients' perspectives before the court in amicus curiae briefs.

The policy team has significant experience working with legislative and executive branch agencies at state and federal levels, and with international governmental bodies and officials. Our lawyers have robust experience with the relevant House and Senate committees, drafting legislation and successfully shepherding it through Congress and into law. We regularly present the views of companies, nongovernmental organizations, and coalitions to members of Congress and administrative agencies through written correspondence and personal visits.

We also have substantial experience representing aquaculture clients concerning regulatory changes or actions, including negotiations with the U.S. Department of Commerce, NOAA, and the FDA concerning proposed rulemaking.

We have extensive experience with fishery management issues before the regional fishery management councils and the NMFS. The team frequently drafts and delivers public testimony, and develops strategies for advancing or resisting various management proposals.

The team counsels clients on strategic policy and political issues affecting their interests, environmental matters, fisheries management and aquaculture issues, federal funding opportunities, customs and tariff issues, vessel operational and ownership issues, and multilateral treaties involving fisheries.

Permitting, Land Use, and Regulatory Compliance

We work to successfully navigate the maze of regulatory requirements and maintain good relations with regulatory agencies, elected officials, non-governmental organizations, Native American tribes, and the public. We help clients anticipate and avoid problems before they impede their objectives or result in needless, costly litigation. When necessary, we forcefully litigate problems that cannot otherwise be resolved.

We represent a wide range of U.S. and international fishing and aquaculture industry enterprises, as well as lenders and others involved with such industries.

The firm provides general counseling and assistance to resolve issues of fisheries and aquaculture policy before administrative and legislative bodies. We are one of the most experienced firms in the country representing clients in the fisheries and aquaculture sectors in the regulatory and permitting process, providing strategic counsel concerning environmental review, and addressing and eliminating public and agency opposition. This experience includes defending companies in litigation if project approvals are challenged.

In addition, we have comprehensive experience in vessel-related matters as well as trade issues affecting the fishing and aquaculture industries. Vessels operating in the U.S. fisheries are subject to U.S. build and U.S. citizen ownership requirements. Operation in the U.S. fisheries is very broadly defined to include processing, storing, transporting (except in foreign commerce), planning cultivating, taking or harvesting fish, marine animals, pearls, shells, or marine vegetation in the U.S. 200-mile EEZ. Such operation requires the vessel to be built in the United States and never rebuilt abroad. The firm has comprehensive experience with respect to these vessel-related matters. Our work ranges from advising vessel owners on the construction, documentation, permitting, and manning requirements to safety regulations, tax issues, coastwise and fisheries eligibility of vessels, and compliance with the 75 percent U.S. citizen ownership and control requirements in general, as well as those that are unique to the fishing industry.

Power Purchase Agreements

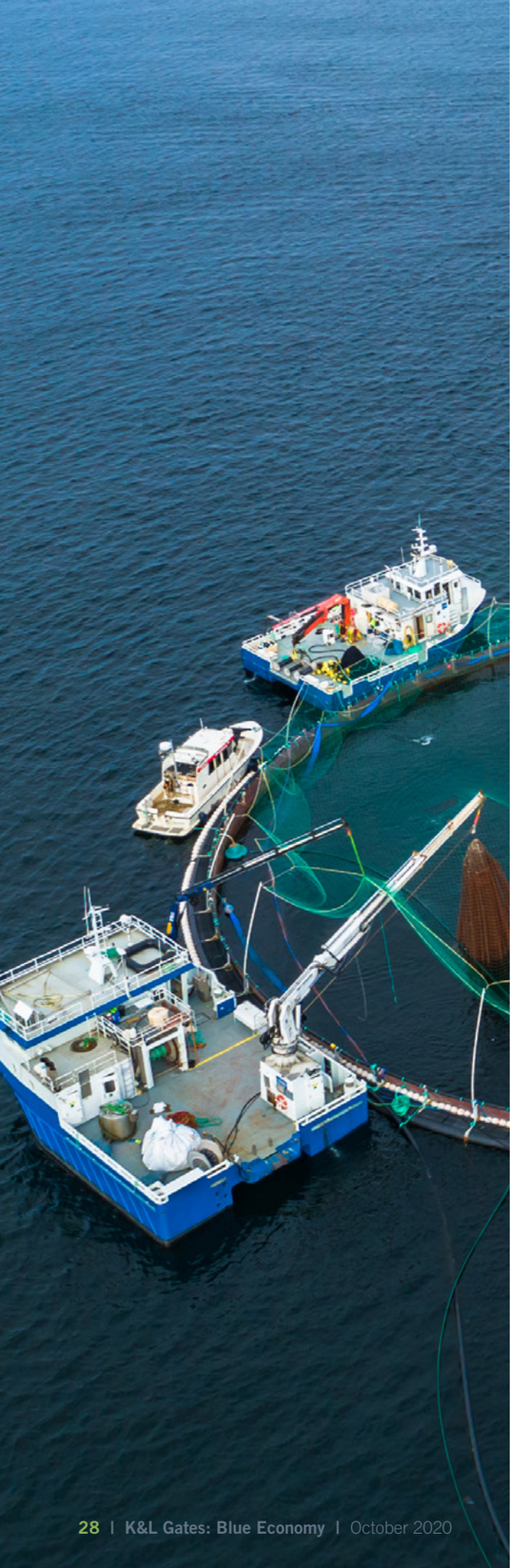
Our firm serves as a one-stop shop for the full range of energy project financing needs, from legal due diligence to preparation and negotiation of agreements for a wide variety of financing structures. We have represented lenders, developers, tax equity investors, independent power producers, investment funds, and utilities. Financing for electricity projects requires a deep understanding of how policy, regulation, and markets shape project economics. Our power finance team includes lawyers with deep experience in energy policy, power markets, Federal Energy Regulatory Commission (FERC), and state utility regulation. We also draw on our depth of experience in power and utility specific investment management and tax matters to support our financing work. We understand the issues in hedges, power purchase agreements (including synthetic and virtual PPAs), Engineering, Procurement, and Construction (EPC) agreements, environmental and land use permitting, real estate documents (for single site and linear infrastructure), and the interrelation of mineral title issues on projects and other key transaction documents that affect project economics and financing options. We have a deep, practical understanding of the issues that can impact future revenue—not just in the short term, but many years after the initial financing.

The strength of our energy finance team is based on combining our culture of multidisciplinary collaboration around the globe with our deep experience in and understanding of both energy and finance markets. We work with our clients to support all of their financing needs, from efficiently executing simple single-lender loans to complex project financing, to developing innovative strategies to solve the most sophisticated financing challenges in the market. Our team's diverse background, which includes former bankers, developers, and regulators, provides us with the practical experience to craft financing solutions that will succeed through changing markets and related disruptions.

In transactions spanning five continents, we have represented administrative agents, lenders, and borrowers in various debt facilities (senior secured syndicate groups, mezzanine, unitranche, second and third lien, specialty and distressed), equity sponsors (developers, independent power producers, energy funds, financial institutions), private equity, hedge funds, utilities, Original Equipment Manufacturers, EPC entities, infrastructure funds, and tax equity investors in virtually every type of energy finance transaction.

Equipment Supply/EPC

We negotiate, draft, and advise in connection with engineering, procurement, construction and installation contracts and similar agreements on behalf of clients, including project owners, contractors, subcontractors, and engineers. We have a long track record of assisting clients with offshore construction projects in the oil and gas sector and as our clients have moved into offshore wind, we have moved with them. Our familiarity with construction activities in a maritime



environment means we appreciate the issues which arise in connection with the construction of an offshore wind farm, including those related to the use of specialist vessels or other offshore equipment and whether above or below the waterline.

Long-Term Service Agreements

We work to assist clients on entity formation and negotiation of joint venture agreements; procurement compliance and strategy issues and preparation of responsive bid materials; the negotiation and preparation of operation and service agreements, subcontractor agreements, financing agreements, and license and other regulatory applications; and in connection with all other commercial and legal elements of energy infrastructure and service agreement transactions.

Litigation

Our lawyers have considerable experience litigating disputes between our clients and private parties, citizen groups, or government agencies. Using our extensive knowledge of environmental statutory and regulatory schemes, we work closely with our clients to develop and execute the appropriate litigation strategy to achieve the best possible result. Our lawyers also utilize alternative dispute resolution when it is in the client's best interest.

We represent clients before FERC, Commodity Futures Trading Commission, U.S. Department of Energy, state public utility commissions, and in state and federal courts. These representations can include the commencement or defense of commercial litigation, cost-of-service rate proceedings, defense of regulatory enforcement actions, defense of private lawsuits involving alleged violations of federal or state law (including class actions), and even defense during criminal investigations and prosecutions.

In addition, we have represented clients before various regulatory authorities and administrative tribunals to challenge permitting or other agency decisions, or to defend a client's permits and licenses when challenged by a third party. The proceedings before such administrative bodies are often distinct and particularized, so our experience is invaluable. In addition, our excellent working relationship with many government regulators facilitates the appeal process and achieves desired results for our clients. Several of our lawyers previously held high-level positions in government, having practiced with the EPA, Department of Justice, and state environmental agencies. This experience provides a keen insight into the administrative and regulatory process involved in appeals.

We also work with energy and utility clients on a full range of issues concerning facility operations and environmental compliance. We have represented public and private entities in connection with siting, licensing, development, and long-term operation of hydroelectric, thermal, wind, and waste-to-energy generation facilities, transmission facilities, and gas and oil pipeline and production facilities.

The firm has won a number of high-profile lawsuits involving fisheries and aquaculture issues over the past two decades. We have both successfully challenged and defended various regulatory proposals, particularly involving individual fishing quotas or "catch share" management.

We litigate cases arising under the MSA, American Fisheries Act, ESA, CWA, Marine Mammal Protection Act, Lacey Act, Administrative Procedure Act, NEPA, California Environmental Quality Act, and other environmental laws. We also defend clients facing enforcement actions by the NMFS, EPA, Corps, and other federal and state agencies.

Real Estate Transactions

Our lawyers bring to bear extensive experience in all types of leasing, subleasing, and brokerage transactions for both landlords and tenants. Our clients include industry leaders and Fortune 100 companies, as well as regional and local companies. We handle large, complex leasing transactions key to the corporate strategies of our clients. Our global leasing practice offers a seamless blend of U.S. and international coverage and local counsel relationships. We are well positioned to provide clients with continuity and ease of service in their leasing matters with global reach and bottom-line value.

Our lawyers are also knowledgeable, often active in business and local governmental affairs, and have the breadth of experience that enables them to coordinate each project in a manner best suited to the client's needs. We represent experienced developers, as well as those facing land use challenges for the first time.

Intellectual Property

Our global full-service Intellectual Property (IP) practice offers a one-of-a-kind solution providing IP services in Asia, Australia, Europe, the Middle East, and North America. Our global practice, with over half of our lawyers registered to practice before the U.S. Patent and Trademark Office (PTO), has the bandwidth to handle the registration and enforcement of all IP rights cost-effectively.

Our IP lawyers seamlessly work for our clients in protecting and enforcing patents, trademarks, copyrights, trade secrets, and other rights to protect their IP as valuable business assets.

We differentiate ourselves by maintaining a deep roster of PTO registered scientists, engineers, and doctors who cover 24 technical areas. We host a wealth of robust technical and legal experience that allows us to deliver all IP legal services efficiently for clients from day one. We manage global trademark and patent portfolios for sophisticated clients. We also work closely with clients and our lawyers globally to ensure that every action is consistent with your business goals and overall priorities.

Employment

We regularly counsel clients on a range of conventional employment matters as well as those that are unique to the fishing and aquaculture industries. Although crews on U.S. flag vessels are generally required to be U.S. citizens, there is a greater measure of flexibility for those involved in the fishing industry depending on the particular operations.

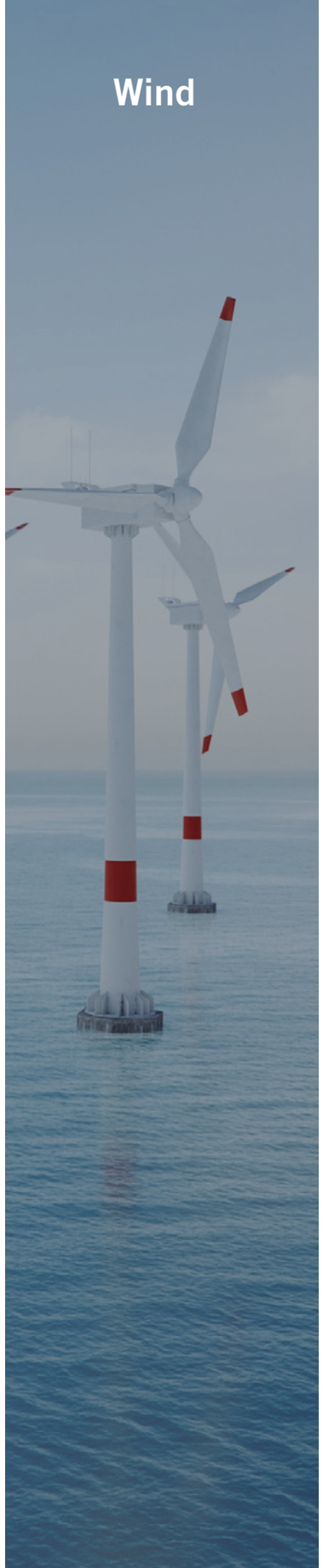
REPRESENTATIVE ENGAGEMENTS

Fisheries

- Assisted client in establishing a fishing "quota bank" to address bycatch issues and encourage new entrants into the fishery.
- Advised client in obtaining Fisheries Finance Program loan to acquire fishing quota.
- Represented a seafood processor in a significant and potentially company-ending enforcement action brought by the EPA, which was successfully terminated without interruption in client operations.
- Represented North Pacific fishing company in connection with major refinancing of catcher-processor fleet.
- Advised the seller of a major Washington state based fish harvesting and processing company and related restructuring of operations.
- Represented buyer of East Coast at-sea catcher processor fleet and related shore-based facilities.
- Advised buyer of major East Coast integrated fish harvesting and processing operation and the restructuring of vessel owning entities.
- Represented buyer of East Coast scallop fish harvesting operation in connection with regulatory compliance and approvals of the original acquisition and subsequent expansion of the fleet and fish processing facilities.
- Represented South African company in US$382 million acquisition of fishing and fish processing operation in Louisiana. Helped structure the transaction so that the regulated fishing assets would meet U.S. citizenship requirements.
- Won major lawsuit against U.S. Secretary of Commerce on behalf of fishing quota owners for allowing chronic overharvesting by a competing sector of the fishery.
- Won major lawsuit for commercial fishing interests against the U.S. Secretary of Commerce striking down a reallocation of fishing quota away from our clients.
- Successfully intervened in litigation on behalf of Alaska king crab harvesters and succeeded in upholding a regulatory program expected to save our clients US$50 million per year.
- Successfully intervened in challenge to allocations of fishing quota for Pacific whiting and succeeded in upholding our clients' allocations.
- Successfully intervened in several different cases challenging individual fishing quotas or catch share management programs and succeeded in upholding the programs against all challenges.
- Advised clients on changes to fishery management laws in Japan, China, Indonesia, and to the EU Common Fisheries Policy.
- Represented shellfish trade association in obtaining lifting of Chinese shellfish import ban.
- Advised client on importation of Patagonian toothfish under U.S. regulations implementing the Convention for the Conservation of Antarctic Marine Living Resources.
- Prepared testimony for tuna and billfish management issues before the International Commission for the Conservation of Atlantic Tunas.
- Advised seafood clients on various U.S. Customs import/export issues and obtained numerous Customs rulings on tariff classifications for seafood imports.
- Obtained legislative relief for a federally backed buyback loan to reduce fishing vessel overcapacity that saved our clients approximately US$11 million.
- Provided ongoing representation of numerous fishing industry trade associations on a range of legislative and policy issues affecting the fishing industry including with respect to the COVID-19 pandemic and particular impacts unique to the industry.
- Represented clients during legislative changes to Magnuson-Stevens Fishery Conservation and Management Act, as well as regulatory implementation of provision in the law at the regional council and federal agency levels.

Aquaculture

- Represented a shellfish client in an enforcement action brought by the U.S. Army Corps of Engineers, which resulted in approval of the operation.
- Provided ongoing representation of shellfish clients in developing the first NPDES permits issued for shellfish processors in the State of California.
- Providing advice and counsel to two California port districts to develop their aquaculture programs.
- Represented a shellfish trade association in negotiations with the U.S. Food and Drug Administration and state health agencies concerning proposed changes to shellfish health regulations.
- Successfully defended a shellfish client in an enforcement action brought by the California Coastal Commission, which ended in the Commission agreeing to an expansion of the client's shellfish farm.
- Represented trade association in negotiating a new aquaculture lease template to be used on all Washington state aquaculture leases.
- Negotiated a successful settlement on behalf of group of Washington shellfish growers, which ended 30 years of litigation and resulted in over 500-farmed parcels being exempt from Tribal treaty rights.
- Successfully defended a shellfish client in an enforcement action brought by the California Coastal Commission, which ended in the Commission agreeing to an expansion of the client's shellfish farm.
- Represented a shellfish client in an enforcement action brought by the U.S. Army Corps of Engineers, which resulted in approval of the operation.
- Provided ongoing representation of shellfish clients in developing the first NPDES permits issued for shellfish processors in the State of California.
- Represented a seafood processor in a significant and potentially company-ending enforcement action brought by the EPA, which was successfully terminated without interruption in client operations.



Wind

- Represented a leading U.S. offshore wind project developer in connection with turbine procurement, design and construction of offshore foundation systems, cable design, and installation and substation construction.
- Advised wind energy developers with ESA compliance.
- Advised clients on environmental due diligence for acquisition of wind, solar, and geothermal projects.
- Supported all phases of wind and solar project development (siting and environmental permitting under the ESA, Bald and Golden Eagle Protection Act, and Clean Water Act).
- Advised wind, oil, and gas energy developers and operators in compliance and permitting issues under the ESA.
- Defended wind energy developers in civil and criminal enforcement actions.
- Counseled wind energy developers in the development of Avian and Bat Protection Plans and environmental due diligence for the purchase of wind farms.
- Represented manufacturing company in the negotiation of a wind virtual power purchase agreement in ERCOT.
- Represented a wind energy developer in obtaining and defending against appeals of land use permits authorizing a multi-phase wind energy facility.
- Represented power producer in renegotiating and extending the terms of two wind power projects in California and negotiating options to acquire another wind power project and hydro-storage project.
- Advised publicly held energy producer on the acquisition of a wind energy developer and on all projects under development throughout North America.
- Advised Dublin-based Mainstream Renewable Power in the sale of the 106.5 MW Shady Oaks wind farm project in Illinois to Goldwind USA, the U.S. subsidiary of the world's fifth largest wind turbine manufacturer Xinjiang Goldwind Science & Technology Company.
- Advised client in making tax equity investment in 106 MW wind project.

ENDNOTES

[1] United Nations, State of the World Fisheries and Aquaculture 2020, at 65 (hereinafter "State of the World Fisheries 2020"); *see also The Blue Economy Challenge*, Challenge.gov, https://www.challenge.gov/challenge/the-blue-economy-challenge/.

[2] State of the World Fisheries 2020, at 191.

[3] State of the World Fisheries 2020, at 5.

[4] State of the World Fisheries 2020, at 65.

[5] NOAA, *What is a Marine Protected Area?*, https://oceanservice.noaa.gov/facts/mpa.html.

[6] NOAA, *Status of U.S. Marine Protected Areas*, https://marineprotectedareas.noaa.gov/aboutmpas/status-of-usa-mpas-2016.html.

[7] NOAA, *Status of U.S. Marine Protected Areas*, https://marineprotectedareas.noaa.gov/aboutmpas/status-of-usa-mpas-2016.html.

[8] *See* Cal. Code Regs. tit. 14, § 632.

[9] *See* Sea Grant, *Marine Protected Areas*, https://caseagrant.ucsd.edu/extension-outreach/facts-and-resources/marine-protected-areas#:~:text=California%20is%20home%20to%20a,protect%20our%20valuable%20ocean%20resources.

[10] Cal. Code Regs. tit. 14, § 632(b).

[11] NOAA, Marine Protected Areas 2020: Building Effective Conservation Networks 3 (2020), https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/docs/2020-mpa-building-effective-conservation-networks.pdf

[12] *See* Presidential Proclamation No. 9496, 81 Fed. Reg. 65,161 (Sept. 15, 2016).

[13] NOAA, *Northeast Canyons and Seamounts Marine National Monument*, https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/northeast-canyons-and-seamounts-marine-national.

[14] *Massachusetts Lobstermen's Ass'n v. Ross*, 349 F. Supp. 3d 48 (D.D.C. 2018), aff'd, 945 F.3d 535 (D.C. Cir. 2019).

[15] Presidential Proclamation No. 10049, 85 Fed. Reg.35,793 (June 5, 2020).

[16] *Conservation L. Found. v. Trump*, No. 1:20-cv-01589-JEB (D.D.C. filed June 17, 2020).

[17] *North Atlantic Right Whales and the Dangers of Vessel Strikes and Entanglement*, NOAA (Feb. 19, 2020), https://www.fisheries.noaa.gov/feature-story/north-atlantic-right-whales-and-dangers-vessel-strikes-and-entanglement.

[18] *See, e.g.,* NRDC, NOAA Urged to Protect Right Whales from Deadly Entanglements (Sept. 17, 2019), https://www.nrdc.org/experts/francine-kershaw/noaa-urged-protect-right-whales-deadly-entanglements.

[19] *See generally Ctr. for Biological Diversity v. Ross*, 4:19-CV-03135-KAW, 2019 WL 7020195 (N.D. Cal. Dec. 20, 2019).

[20] *Ctr. for Biological Diversity v. Ross*, CV 18-112 (JEB), 2020 WL 1809465 at *10___ (D.D.C. Apr. 9, 2020).

[21] *Ending Overfishing Through Annual Catch Limits*, NOAA, https://www.fisheries.noaa.gov/national/rules-and-regulations/ending-overfishing-through-annual-catch-limits

[22] *See* Pub. L. 109-479 (Jan. 12, 2007).

[23] NOAA, Population Assessments, https://www.fisheries.noaa.gov/topic/population-assessments#fish-stocks (last visited Sept. 2, 2020).

[24] NOAA, *Frequent Questions: Annual Catch Limit Monitoring in the Southeast Region*, https://www.fisheries.noaa.gov/southeast/sustainable-fisheries/frequent-questions-annual-catch-limit-monitoring

[25] *See* 16 U.S.C. § 1853a.

[26] *See, e.g., Guindon v. Pritzker*, 31 F. Supp. 3d 169 (D.D.C. 2014) (in a suit brought by the commercial sector of a fishery, the court held that NMFS violated multiple provisions of the Magnuson-Stevens Act by repeatedly failing to hold the recreational sector of that fishery accountable to its catch limit).

[27] *See* J. Morley et al., Projecting Shifts in Thermal Habitat for 686 Species on the North American Continental Shelf, PlosOne (May 16, 2018), available at: https://www.fisheries.noaa.gov/feature-story/new-study-climate-change-shift-many-fish-species-north.

[28] *Fishery Observers*, NOAA, https://www.fisheries.noaa.gov/topic/fishery-observers.

[29] *See, e.g.*, Jim Lovgren, A Hard Look at NOAA's Observer Program, National Fisherman (Feb. 20, 2018), https://www.nationalfisherman.com/viewpoints/northeast/a-hard-look-at-noaas-observer-program.

[30] NOAA, Notice of Waiver of Observer and Catch Monitor Coverage Requirements (Apr. 15, 2020).

[31] Mark Harrington, *Long Island Fishermen Concerned About Restart of Onboard Monitoring Program*, Newsday (Jun. 25, 2020), https://www.newsday.com/long-island/fish-1.46108380

[32] *See Electronic Monitoring: A Key Tool for Global Fisheries*, Pewtrusts.org (Sept. 20, 2019), https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/09/electronic-monitoring-a-key-tool-for-global-fisheries

[33] *See Fishing Gear and Risks to Protected Species*, NOAA, https://www.fisheries.noaa.gov/national/bycatch/fishing-gear-and-risks-protected-species

[34] Taking of Marine Mammals Incidental to Commercial Fishing Operations, 71 Fed. Reg. 24,775 (Apr. 26, 2006).

[35] Taking of Threatened or Endangered Species Incidental to Commercial Fishing Operations, 68 Fed. Reg. 69,962 (Dec. 16, 2003).

[36] *See generally* BOEM, Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Outer Continental Shelf BOEM 2014-654 (July 2014).

[37] BOEM, Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishermen on the Outer Continental Shelf BOEM 2014-654 at 5-1 (July 2014).

[38] *Understanding Our Changing Climate*, NOAA, https://www.fisheries.noaa.gov/insight/understanding-our-changing-climate.

[39] *See, e.g.*, Ben Goldfarb, *Feeling the Heat: How Fish are Migrating from Warming Waters* (Jun. 15, 2017), https://e360.yale.edu/features/feeling-the-heat-warming-oceans-drive-fish-into-cooler-waters.

[40] *Understanding Our Changing Climate*, NOAA, https://www.fisheries.noaa.gov/insight/understanding-our-changing-climate.

[41] *See* Aquaculture Act of 1980, 16 U.S.C. § 1802(1).

[42] Congressional Research Service, U.S. Offshore Aquaculture Regulation and Development at 2 (Oct. 10, 2019).

[43] NOAA, Offshore Aquaculture in the United States: Economic Considerations, Implications & Opportunities at 4 (July 2008), https://spo.nmfs.noaa.gov/sites/default/files/tm103.pdf.

[44] *Id.* at 5.

[45] Congressional Research Service, U.S. Offshore Aquaculture Regulation and Development at 33 (Oct. 10, 2019).

[46] Congressional Research Service, U.S. Offshore Aquaculture Regulation and Development at 1 (Oct. 10, 2019).

[47] *See* K&L Gates U.S. Environment, Land, and Natural Resources Alert, *COVID-19: Trump Administration Takes Action to Assist U.S. Aquaculture* (May 15, 2020), https://www.klgates.com/covid-19-trump-administration-takes-actions-to-assist-us-aquaculture-05-15-2020.

[48] *See* K&L Gates U.S. Environment, Land, and Natural Resources Alert, U.S. *Army Corps Proposes New Nationwide Permits for Seaweed and Finfish Aquaculture* (Aug. 21, 2020), https://www.klgates.com/US-Army-Corps-Proposes-New-Nationwide-Permits-for-Seaweed-and-Finfish-Aquaculture-in-Coastal-Waters-and-Updates-the-Existing-Nationwide-Permit-for-Shellfish-Aquaculture-8-21-2020.

[49] *See* K&L Gates U.S. Environment, Land, and Natural Resources Alert, *NOAA Identifies First Two Aquaculture Opportunity Areas to Facilitate Expansion of Aquaculture in Federal Waters* (Aug. 28, 2020), https://www.klgates.com/NOAA-Identifies-the-First-Two-Aquaculture-Opportunity-Areas-to-Facilitate-Expansion-of-Aquaculture-in-Federal-Waters-8-28-2020.

[50] For example, the concern associated with finfish culture amongst the fishing industry is associated with market competition, but also genetic crossbreeding or competition in the event of escapement, and marine spatial conflicts.

[51] *See* Kat Montgomery, *Capstone Project, Opportunities and Barriers Facing Offshore Finfish Aquaculture in the United States*, Scripts Institute of Oceanography 17 (2019).

[52] *See* U.S. Offshore Aquaculture Regulation and Development, *supra* note 5.

[53] *See, e.g.*, Loki Fish, *About Us*, https://www.lokifish.com/pages/about-us

[54] *See* Rosamund L. Naylor et al., *Salmon Aquaculture in the Pacific Northwest: A Global Industry*, 45 ENV'T 18, 27-31 (2003); *see also* Complaint at 13-14, Wild Fish Conservancy v. U.S. Envt'l Protection Agency, 331 F. Supp.3d 1210 (W.D. Wash. Nov. 4, 2015) (No. 15-CV-1731 BJR).

[55] *See* Gunnar Knapp & Michael C. Rubino, *The Political Economics of Marine Aquaculture in the U.S.*, 24 REV. IN FISHERIES SCI. & AQUACULTURE 213, 214-16 (2016).

[56] *See* Elan Lowenstein, *Regulating the Blue Revolution: A Sea of Change for the United States' Offshore Aquaculture Industry and a Missed Opportunity for Increased Sustainability,* 26 U. MIAMI INT'L & COMP. L. REV. 473, 480-83 (2019).

[57] *See generally* FDA, *National Shellfish Sanitation Program (NSSP)*, https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp

[58] Exec. Order 13921, 85 Fed. Reg. 28,471 (May 12, 2020).

[59] *Coal. to Protect Puget Sound Habitat v. U.S. Army Corps. of Engineers*, 417 F. Supp. 3d 1354, 1356 (W.D. Wash. 2019).

[60] *See* Gulf Fishermens Ass'n v. Nat'l Marine Fisheries Serv., N. 19-30006, 2020 WL 4433100, at *1 (5th Cir. 3 August 2020) (holding that NMFS does not have authority to regulate aquaculture under the Magnuson-Stevens Fishery Conservation and Management Act).

[61] Press Release, U.S. Senate Committee on Commerce, Science, and Transportation, Wicker, Schatz, Rubio Introduce AQUAA Act to Advance American Aquaculture (Sep. 25, 2020) (https://www.commerce.senate.gov/2020/9/wicker-schatz-rubio-introduce-aquaa-act-to-advance-american-aquaculture).

[62] Block Island Wind Farm, Ørsted, at https://us.orsted.com/wind-projects.

[63] State permits are not needed in the OSC, but with transmission lines running through state territorial waters, state permits are required to interconnect wind turbines with electric grids.

[64] AWEA, U.S. Offshore Wind Industry Status Update 1 (2020).

[65] AARON L. SHALOWITZ, U.S. DEP'T OF COMMERCE, SHORE AND SEA BOUNDARIES 181 (1962).

[66] DELOITTE., 2020 RENEWABLE ENERGY INDUSTRY OUTLOOK 3 (2019); see BOEM, Wind Energy Commercial Leasing Process Fact Sheet 1 (2017), https://www.boem.gov/sites/default/files/boem-newsroom/Wind-Energy-Comm-Leasing-Process-FS-01242017-%281%29.pdf.

[67] AWEA, U.S. Offshore Wind Power Economic Impact Assessment 9-11 (Mar. 2020), https://supportoffshorewind.org/wp-content/uploads/sites/6/2020/03/AWEA_Offshore-Wind-Economic-ImpactsV3.pdf.

[68] It is important to note that these programs have recently only been extended on a year-to-year basis. The PTC "allows owners and developers of wind energy facilities to claim a federal income tax credit on every kilowatt-hour of electricity generated for the power grid annually for a period of 10 years after a facility is placed into service." Dep't of Energy, Office of Energy Efficiency & Renewable Energy, Advancing the Growth of the U.S. Wind Industry: Federal Incentives, Funding, and Partnership Opportunities 1, DOE/GO-102020-5258 (Feb. 2020), https://www.energy.gov/sites/prod/files/2020/02/f71/weto-funding-factsheet-2020.pdf. The ITC "is a federal income tax credit for capital investments in renewable energy projects. Unlike the PTC, this one-time credit is based on the dollar amount of the investment and earned when the equipment is placed into service." *Id*.

[69] *See generally* Summary Report: Bureau of Ocean Energy Management's Offshore Wind and Maritime Industry Knowledge Exchange, BOEM (Mar. 5, 2018), https://www.boem.gov/sites/default/files/renewable-energy-program/BOEM-Maritime-Meeting-Summary-FINAL-%281%29.PDF.

[70] *Id.*

[71] *See* Krisztina Pjeczka et al., *Public estimates of support for offshore wind energy: False consensus, pluralistic ignorance, and partisan effects*, 112 Energy Policy 45-55 (2018).

[72] *See e.g., Town of Barnstable, Mass. v. Berwick*, 17 F. Supp. 3d 113 (D. Mass. 2014), *vacated and remanded sub nom. Town of Barnstable v. O'Connor*, 786 F.3d 130 (1st Cir. 2015).

[73] *See id.; see also generally* U.S. Dep't of Interior, BOEM, Vineyard Wind Supplement to the Draft Environmental Impact Statement (June 2020), https://www.boem.gov/sites/default/files/documents/renewable-energy/Vineyard-Wind-1-Supplement-to-EIS.pdf.

[74] *See Julia Gheorghiu*, Vineyard Wind faces unexpected permitting delays, pushing 2022 start date for 800 MW offshore project, Utility Dive (Feb.12, 2020), at https://www.utilitydive.com/news/vineyard-wind-faces-unexpected-permitting-delays-pushing-2022-start-date-f/572127/; *see also* Vineyard Wind Offshore Wind Facility One Federal Decision Permitting Timeline, BOEM (Feb. 27, 2020), at https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/Vineyard-Wind-SEIS-Permitting-Timetable.pdf.

[75] BOEM, *supra* n.34 at 1. BOEM currently has Task Forces in 14 states and two non-state regions (New York Bight and Gulf of Maine).

[76] *Id.* at 2.

[77] U.S. Dep't of Interior, MMS, Alternative Energy Final Programmatic EIS § 5-10 (Oct. 2007).

[78] 16 U.S.C. § 703.

[79] *Id.* at § 5-92.

GLOSSARY

AOA	Aquaculture Opportunity Areas
AQUAA Act	Advancing the Quality and Understanding of American Aquaculture Act
AWEA	American Wind Energy Association
BOEM	Bureau of Ocean Energy Management
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
EEZ	Exclusive Economic Zone
EIS	environmental impact statement
EPA	Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
ESA	Endangered Species Act
Executive Order 13921	Executive Order on Promoting American Seafood Competitiveness and Economic Growth
FDA	Food and Drug Administration
FERC	Federal Energy Regulatory Commission
FMPs	fishery management plans
GW	gigawatts
ITC	Investment Tax Credit
MBTA	Migratory Bird Treaty Act
MMS	Minerals Management Service
MPA	Marine Protected Areas
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MW	megawatts
NEPA	National Environmental Policy Act
NGOs	nongovernmental organizations
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NSSP	National Shellfish Sanitation Program
NWP	Nationwide Permit
OCS	Outer Continental Shelf
PARS	Port Access Route Studies
PEIS	Programmatic Environmental Impact Statement
PTC	Production Tax Credit
PTO	Patent and Trademark Office
Task Forces	Intergovernmental Renewable Energy Task Forces
USCG	U.S. Coast Guard

K&L GATES

K&L Gates is a fully integrated global law firm with lawyers located across five continents. The firm represents leading multinational corporations, growth and middle-market companies, capital markets participants, and entrepreneurs in every major industry group, as well as public sector entities, educational institutions, philanthropic organizations and individuals. For more information about K&L Gates or its locations, practices and registrations, visit klgates.com.

This publication is for informational purposes and does not contain or convey legal advice. The information herein should not be used or relied upon in regard to any particular facts or circumstances without first consulting a lawyer.

©2020 K&L Gates LLP. All Rights Reserved.

21698