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Beyond the beach: Tradeoffs in tourism and recreation at the first offshore wind farm in the United States

Tiffany Smythe[a,*], David Bidwell[b], Amelia Moore[b], Hollie Smith[c], Jennifer McCann[d]

[a] United States Coast Guard Academy, United States
[b] University of Rhode Island, United States
[c] University of Oregon, United States
[d] University of Rhode Island Coastal Resources Center, United States

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ABSTRACT

Despite the growth of offshore wind energy and concerns that projects will harm tourism and recreation, there is a lack of empirical research on the effects of operating wind farms on tourism and recreation. The existing literature tends to treat tourists and recreationists as a monolithic group, focused almost entirely on beachgoers. Further, research regarding offshore wind energy and tourism puts forth a narrow conception of tourists, concerned primarily with a natural seascape. The 30-MW Block Island Wind Farm, the first offshore wind farm in the United States, is located offshore an iconic tourism destination and provides a laboratory for understanding interactions between offshore wind energy and the tourism and recreation sectors. We conducted an exploratory qualitative study through which tourism and recreation professionals and participants met in focus groups to discuss experiences with and observations of this project. Analysis revealed diverse viewpoints and largely positive encounters; though, some negative impacts were identified, and participants weighed project costs and benefits. Perspectives were shaped, in part, by experiences with the planning process. Visual impacts were a major concern; however, most participants described the project's appearance in neutral or positive terms. Overall, the wind farm is functioning as an attractant, either as a novel sight or as a recreational fishing destination. Participants felt the wind farm should be promoted for tourism but cautioned that interest may be short-lived and there may be less support for larger offshore developments. Findings support tourism and recreation sector engagement throughout offshore wind project planning and operation.

1. Introduction

Interest in and demand for renewable energy has grown worldwide within the past decade. The International Energy Agency (IEA) predicts that the share of renewables used to meet global energy demand will grow by one-fifth, and provide almost 30 percent of power demand in the electricity sector, by 2023 [1]. An increasing portion of this demand is being met by offshore wind farms. Europe has historically led the development of offshore wind energy, and more recently, China has become an area of wind farm expansion [2]. The deployment of offshore wind farms is poised to expand in the United States as well. To date, there are only two operational projects, the 30-megawatt (MW) Block Island Wind Farm and the 12-MW Coastal Virginia Offshore Wind pilot project; however, at present there are 16 active federal offshore wind energy leases along the east coast of the U.S., encompassing over 1.7 million acres of the outer continental shelf, with projects totalling more than 21 GW (GW) of capacity in the planning and permitting process [3]. This may be only the beginning; according to the *National Offshore Wind Strategy*, U.S. offshore waters provide over 2,000 GW (GW) of offshore wind resource capacity, accessible using technology that already exists. This is enough to provide double the total electricity generated in the U.S. in 2015 [4].

Despite the increasing use of the ocean for this renewable energy transition, however, offshore wind farms continue to present challenges for coastal communities [5,6] and for marine governance more broadly [7–9]. Opponents have cited potential impacts to tourism and recreation among the reasons for their concern [10]. For example, in 2018 the coastal city of Ocean City, Maryland, U.S. cited the potential harm to tourism as justification for passing "A Resolution in Opposition to Permanent Offshore Wind Turbines Visible from Ocean City" [11]. While the literature on offshore wind energy identifies potential impacts to tourism and recreation as an area of concern, it frequently

* Corresponding author.
E-mail address: tiffany.c.smythe@uscga.edu (T. Smythe).

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presents a narrow picture of tourism and recreation concerns, focused almost exclusively on the visual effects of turbines on beachgoers. We argue that this leaves a gap in researchers' understanding of tourism and recreation impacts. The qualitative research reported here addresses this gap by using focus groups to explore the experiences of diverse tourism and recreation sectors at the first offshore wind energy project in the U.S.

As the first commercial offshore wind farm in the U.S., the Block Island Wind Farm (BIWF) provides a unique research laboratory for understanding how broader offshore wind development could influence tourism and recreation in U.S. coastal communities. The setting and characteristics of the BIWF also provide insights into the impacts of offshore wind energy on tourism-dependent communities in other nations. A five-turbine project sited approximately 5 km (3 mi) off Block Island, Rhode Island, U.S., an iconic tourism and recreation destination, the BIWF presents an opportunity to examine this issue and expand our understanding of tourism and recreation impacts. This paper presents a qualitative analysis, based on a series of focus groups with recreation and tourism professionals and participants. As one part of a larger mixed-methods assessment of the effects of the BIWF on recreation and tourism [12], the primary purpose of the research reported here was to explore how recreation and tourism sectors have experienced this offshore wind project in its initial years of operation.

Following an interdisciplinary literature review and description of study context, we present our methods and a discussion of focus group findings within the context of the setting and the literature to date. Overall, study participants expressed nuanced views of the impacts of the BIWF on recreation and tourism. Ultimately, viewpoints were largely neutral to positive concerning impacts on a varied and diverse recreation and tourism landscape; though, participants reported some negative impacts and actively weighed the costs and benefits of the project. We then discuss study limitations and use these to frame recommendations for future research, as well as recommendations for managers involved in planning and siting future offshore wind farms near tourism and recreation destinations.

2. Wind energy and tourism

Whereas much of the research to date on offshore wind energy, and renewable energy more broadly, has focused on the physical science and engineering dimensions of the problem, we argue that, consistent with other renewable technologies [13,14], the introduction of offshore wind energy facilities into the marine environment is as much a social problem as a technical one. In that regard, the research presented herein contributes to the growing body of interdisciplinary social science research on offshore wind energy. While this literature offers specific insights into the potential impacts of wind energy projects, on– and offshore, to tourism and recreation, we argue that it oversimplifies the interests and breadth of these activities, focusing almost exclusively on beachgoers and visual impacts. Our work broadens and strengthens perspectives on the interaction of tourism and recreation with offshore wind.

Work on the social aspects of renewable energy has largely focused on understanding opposition and support for specific onshore projects, and several good reviews of the literature exist [15–18]. While NIMBY (not-in-my-backyard) explanations have been largely dismissed [19,20], researchers have identified a number of factors that influence public support of wind energy and other renewables. These include both physical and institutional characteristics of the project and perceived impacts of projects on valued landscapes, as well as underlying values and beliefs of the public [21]. It is reasonable that these dynamics would apply not only to residents, but also to people who visit and recreate in the locations where wind energy and other renewable projects are sited. For example, frequent visitors may have a significant bond to the landscapes where they recreate and be alarmed by the disturbances created by energy development. Broekel and Alfkan [22] suggest this may explain reduced tourism demand in rural areas of Germany that host wind farms. However, Frantál and Kunc [23] conclude that, if sited appropriately, onshore wind farms can have minimal impact on tourism; people with an interest in technology may even be attracted to an area by wind turbines [24–26].

Although some people believe that moving renewables offshore mitigates factors that negatively influence social acceptance, there is little evidence that this is true [9]. In fact, the public may have specific additional concerns related to development in a marine environment [27,28], including impacts to aesthetics, commercial and recreational fishing, and wildlife and other ecological features [5,29–31]. Symbolic value of the seascape, as reflected in research on concepts such as place attachment, meanings, and fit [29,32,33], also explains some of public responses to offshore energy proposals and projects.

Impacts to tourism, particularly the notion that visual impacts of wind farms on the ocean horizon will deter visitation, has been one of the primary concerns expressed by communities and policy makers [10]. Research shows that the general public is also concerned about potential negative impacts on recreational activities such as fishing and boating [34]. The emerging body of social science on this topic primarily examines the potential visual impacts of a proposed wind farm on beachgoers' experiences, based largely on study participants' responses to simulations [35–37]. To date, relatively few empirical studies have been conducted analyzing the United States' experience with offshore wind farms given the recent introduction of offshore wind energy to its waters (exceptions include [29,32,38,39]), but there is an extensive literature on offshore wind energy development in Europe, drawing from several disciplines including economics and geography. Together, these studies have provided mixed results as to whether a wind farm would deter or attract visitors to a coastal tourism destination.

Some studies suggest that wind farms may deter visitors from coastal destinations [e.g. 40]. Others suggest that wind farms do not have substantial negative effects on tourism and recreation, and conversely may serve to attract visitors e.g. [36,40]. Researchers consistently document concerns about the visual impacts of offshore wind farms, which have primarily been found to decrease with a project's distance offshore [35–37,41–44]. For example, Westerberg et al. [36] concluded that offshore wind farms should be located no closer than 12 km (7.5 mi) to shore in the interest of the tourist industry, and should be cited closer only when connected with associated recreational activities. Similarly, Ladenburg and Dubgaard [45] found that coastal recreational users perceived negative visual impacts of wind farms, thus indicating that the recreational value of the coast is jeopardized by these projects. Some research suggests that regular visitors to a coastal tourist destination may be most concerned about potential offshore wind farms due to their interest in pristine or natural landscapes [35,42,46]. Other studies and policy guidance suggest that offshore wind farms can attract visitors or enhance tourism [40,47].

Rudolph [10], pp. 180–181 offers a broader framework through which to understand conflict between offshore wind farms and tourism. Rudolph notes the conflict between ongoing coastal community concern about tourism impacts of offshore wind farms coupled with a lack of empirical evidence to support these concerns, describing a dominant, unsubstantiated narrative in which visual impacts of wind farms lead to a decline in tourism visitation or economic activity. To explore the conflicts and rationalizations underlying this claim, the author uses case study research to elucidate five storylines characterizing the reasoning that shape these claims: visual impacts; disruption of local character and identities; "construction" of tourists and visitors; disturbance of recreational activities; and environmental impacts. "Construction" of tourists and visitors refers to the dominant view that tourists have narrowly-defined goals and expectations for visiting a destination - an experience of "otherness" - such that an offshore wind farm would interfere with these expectations and deter visitation. This storyline is premised upon a simplistic view of tourists' and visitors'

traits, motivations, and biases - these two-dimensional individuals seek to "commune with nature" and "reverse their everyday alienation from nature." This storyline, while deeply embedded, is socially constructed, lacking empirical evidence but nonetheless perpetuating opponents' fears of economic impacts on tourism.

In contrast to this "constructed" view of tourists, tourists and recreationists are not a homogeneous group. Research indicates that their attitudes toward wind farms are shaped by diverse factors including tourism and recreation motivations, beliefs about renewable energy and the environment, feelings about and experience with the place and the landscape itself, personal attributes, and other factors [22,35,43,48,49]. The distinction between tourism and recreation was once shaped by the focus of recreation on local, outdoor, non-commercial activities, but Hall and Page [50] note that integrated research on these activities is now needed in part because new forms of tourism, such as nature-based tourism and ecotourism, blur this distinction. Other types of tourism may include ethical, cultural, historical, environmental, and recreational [51] and draw attention to the diversity of factors shaping tourism. Similarly, coastal and marine recreation comprises a diverse and growing suite of uses, characterized by a continuum of passive versus active land- and water-based activities in environments ranging from pure wilderness to contrived settings [see e.g. [52]. Coastal and marine recreation activities are further characterized by a range of specializations in a given type of recreation [see e.g. [53] and are driven by diverse motivations. Motives may include health, relaxation, social interaction, escape from crowds, wildlife interests, or general environmental values, to name a few [e.g. [53,54]. Therefore, it is likely that visitors' responses to wind turbines located in tourism and recreation areas will be varied and nuanced, depending on their motivations, values, and backgrounds.

Whereas the research on wind energy and tourism discussed here is diverse, exploring a broad range of impacts and interactions, we argue that tourists and recreationists themselves are inadequately characterized in much of this work. Tourists and recreationists are neither monolithic nor two-dimensional; it cannot be assumed that an offshore wind farm will stop people from visiting a beach or recreating in a popular fishing spot, and studies of proposed projects which have considered this question have offered mixed results. Tourists and recreationists have diverse motives, experiences, and attitudes. Thus, using Rudolph's [10] storyline of the "construction" of tourists and visitors as our theoretical basis, we approach our study as an opportunity to move beyond the limitations of this paradigm. In our exploration of how the recreation and tourism sectors have experienced the BIWF, we seek to provide a more nuanced view of how tourists and recreationists interact with an offshore wind farm.

3. Research Context: Tourism and recreation and the Block Island wind farm

The BIWF is a five-turbine, 30-MW wind farm located approximately 30 km (16 nautical miles) off the mainland coast of the state of Rhode Island, U.S., and is the first offshore wind farm in the U.S. The project is located in state waters approximately 5 km (3 miles) off Block Island, an offshore island whose town, New Shoreham, is a Rhode Island municipality. The wind farm's location relatively close to the shore of an island, but distant from the mainland, makes it unique insofar as it can be considered both a nearshore and an offshore development. A submarine power cable connects the BIWF to the island, and project construction included the installation of a second submarine cable connecting Block Island's power grid to mainland Rhode Island. Through these cables, electricity generated by the turbines is provided both to the island and to the mainland (see Fig. 1). The turbines are now the primary source of power for the island, which had previously lacked a connection to the mainland grid, relying instead on diesel-powered generators.

The project became operational in December 2016 following an eight-year planning and permitting period. The BIWF is sited in a marine renewable energy zone identified through a state-led, participatory marine spatial planning process and was permitted by Rhode Island's coastal management authority in coordination with other state and federal permitting agencies [55]. This early participatory planning process, as well as frequent informal engagement of the public and interest groups during project permitting, may have contributed to a relatively high level of project support within Rhode Island [56–58]. Given the high profile of tourism and recreation in the region, it is surprising that the potential impacts of the project on tourism and recreation did not garner more attention during the planning period [59].

The Block Island Wind Farm is sited within a unique coastal and marine tourism and recreation context. These activities are economically, socially, and culturally important to Rhode Island. Rhode Island is well known within New England and the northeastern U.S. as a tourism destination, with its total traveler economy worth $6.5 billion in 2017 [60]. Coastal and marine tourism and recreation are major contributors to this economy, with numerous municipal and state-managed beaches along the coast, as well as scenic salt ponds. Communities along the coast are populated with seasonal homes and rental cottages, and feature little large-scale or industrial infrastructure. Rhode Island's famous coastal destinations include Newport, dubbed "the sailing capital of the world"; the iconic Newport Bridge, the most notable large-scale infrastructure visible from the BIWF area, is featured in local photography and artwork as a point of beauty. Other coastal destinations include Watch Hill, known for its desirable beaches and celebrity mansions.

Boat-based recreational activities, which are popular with both visitors and residents, generate economic impacts for the state in their own right, with dozens of marinas providing services and supplies to boaters and recreational anglers. In 2016, the state's marine trades industry, which supports recreational boating, generated $2.6 billion in annual sales and employed over 13,000 people [61]; and that same year, the recreational fishing industry generated $412 million in annual sales and supported over 4,000 jobs [62]. Recreational activities such as shore-based fishing and swimming are also culturally and socially important to local Rhode Islanders from diverse backgrounds, though not necessarily reflected in these economic reports.

Block Island is considered an important contributor to the state's coastal and marine recreation and tourism economy and culture (see Fig. 2). It is a 26 km2 (10 mi2) island located approximately 14.5 km (9 miles) south of the mainland and is accessible only by ferry, aircraft or private boat. Its year-round population of 1,000 swells to as many as 20,000 during the summer tourism season. Nearly half of Block Island is protected from development, causing The Nature Conservancy to designate the island one of the "Last Great Places" in the western hemisphere [63]; for this reason there is very little industrial infrastructure on the island. The island is known for its rich and complex history,[1] beaches, bluffs, lighthouses, and natural areas, and one tourism advertisement emphasizes sites that are "isolated and nearly untouched, providing breathtaking views and utmost tranquility" [64]. In part because of this conservation record and natural beauty, Block Island is sometimes marketed as a "green" tourism destination [e.g. [65]. Block Island's harbors and nearshore waters are also popular with boat-based recreationists. Recreational angling and charter fishing are long-standing popular activities around Block Island, and marinas located in Block Island's Old Harbor are full of transient boaters during the summer months. Several biennial yacht races are based on or take place near Block Island, such that numerous local events are named for the island. Research by Bidwell [29] has shown a high degree of support for the wind farm project among island visitors, though support is influenced by diverse factors including underlying values and beliefs about

[1] Block Island's history includes that of its indigenous people, often called the Manisseans, and its colonization. This history is of interest to tourists and continues to influence local perceptions of the island's present and future [89].

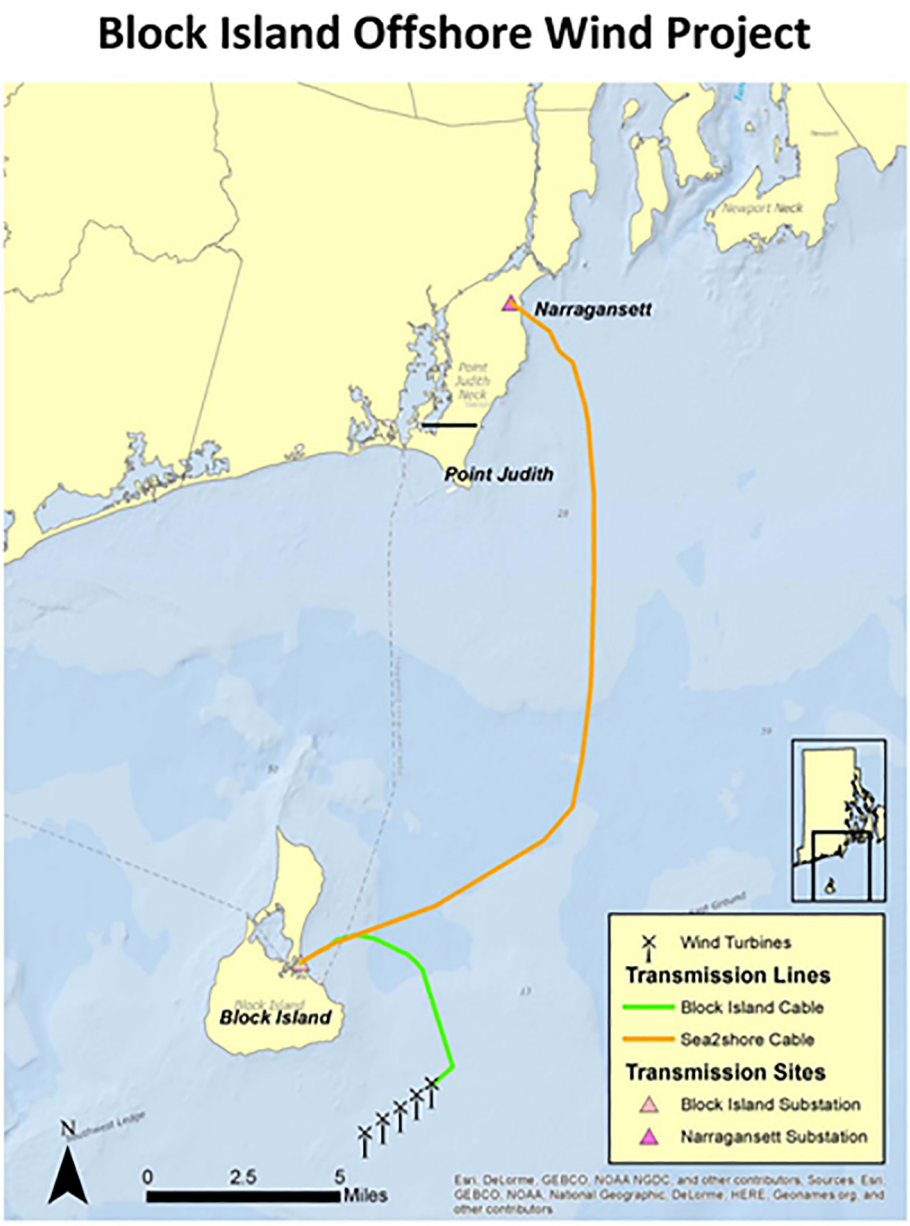

Fig. 1. The Block Island Wind Farm and associated undersea transmission cables (Firestone et al. 2018).

the ocean.

The Block Island Wind Farm is unique within the broader context of U.S. offshore wind farm development. The first of only two offshore wind farms operational in the United States to date, it is modest in size, at only 5 turbines and 30 MW, and is sited within U.S. state waters (5 km/3 nautical miles from shore). Further, it is the only U.S. offshore wind farm site which was identified through a state-driven marine spatial planning process. The 16 wind farm leases established to date (see Section 1) are all located further offshore in U.S. federal waters on sites identified by the federal government. Proposed projects for these lease areas are generally of a much larger scale; for example, the proposed Vineyard Wind project, located 22.5 km (12 nm) offshore, is an 800-MW facility expected to comprise 57–100 turbines.

4. Research methods

The purpose of our study was to explore how recreation and tourism sectors have experienced the BIWF. We chose an exploratory, qualitative approach for this study, utilizing focus groups, because of the newness and novelty of the BIWF and the relative lack of empirical research on the impacts of offshore wind farms on tourism and recreation, both within the U.S. and abroad. Focus groups provide a means of capturing multiple viewpoints as well as prioritizing respondents' language and concepts, and the importance attributed to these concepts, rather than those of the researcher [66]. Focus groups also allow participants' input to be generated in a social context through interaction among individuals [66,67]. This approach does, however, have some limitations: without effective facilitation, focus groups may be dominated by a few individuals; further, the group dynamic and lack of confidentiality may reduce the candor with which individuals voice their opinions [66,68,69]. Focus groups are an established means of understanding social aspects of energy transitions [67]; for examples see [33,70–75]. Our focus group participants were coastal and marine recreation and tourism professionals and participants who were able to represent their sectors due to their direct knowledge of and experience with the BIWF. We refer to these study participants as "key knowledgeables," due to their unique knowledge of these activities and willingness to share their insights [see [69].

Fig. 2. Block Island's Old Harbor (Photo: Block Island Tourism Council).

Research design comprised two rounds of focus group meetings conducted approximately six months apart, during the first 18 months of the wind farm's operation. The purpose of the first round was to explore focus group participants' experiences with and observations of the BIWF's effect on the tourism and recreation sectors during construction and its first year in operation. The second round was designed for the purpose of sharing draft results with the same participants and testing the validity of findings through ground-truthing. In these follow-up sessions, researchers solicited participants' feedback on and additions to draft findings.

In keeping with accepted focus group methods, researchers sought to bring together individuals with common concerns, as defined by tourism and recreation sector. Five sectors were included in this study: recreational boating and sailing, recreational fishing, charter excursions, Block Island tourism and recreation, and mainland Rhode Island coastal tourism and recreation (see Table 1).

Focus group participants were selected through a purposive sampling method designed to identify individuals and organizations publicly known to be engaged in each of the sectors. Researchers first assembled a database of relevant individuals and organizations, drawing upon researchers' prior knowledge of the study area, consultation with university extension specialists, and recommendations of a study Advisory Committee. This committee included 18 researchers, practitioners, and managers, including representatives of each of the tourism and recreation sectors, and tourism professionals from the mainland and Block Island. Its purpose was to provide the researchers with suggestions on methods, data sources, and strategies for ensuring the relevance of focus groups, and the larger mixed-methods assessment of which they were a part, to the community; for further discussion see [12]. The resultant database identified the sectors and sub-sectors each individual represented (e.g. members of the tourism and recreation sectors included representatives of hotels, chambers of commerce, and shoreside recreation businesses). As our goal was to ensure representation of each sector, we did not consider demographic factors in recruiting participants, other than to ensure they were age 18 or older. Participants were recruited using this database. Recruitment materials framed the study in a neutral manner as seeking individuals' wind farm experiences.

The first round of focus groups took place between October and December 2017. Six meetings were conducted, two on Block Island and the remainder on the mainland, with a total of 39 participants across the five sectors (see Table 1). While researchers actively worked with participants on scheduling to maximize participation, recruitment for some sectors proved challenging due to scheduling conflicts or cancellations. Recruitment for the mainland tourism and recreation sector presented a particular challenge, in that many potential participants

Table 1
Coastal and Marine Recreation and Tourism Sectors.

Sector	Description	Participants - Round 1*	Participants - Round 2*
Recreational Boating and Sailing	Recreational boaters, sailors, and yacht racing organizers. Includes day-trippers and cruisers as well as representatives of yacht races taking place in the area.	11	5
Recreational Fishing	Recreational fishermen (anglers) who fish from private boats, aboard charter boats, or from shore.	8	4
Charter Excursions	Captains and crew of for-hire passenger excursions taking place by sea or by air, such as fishing or sight-seeing charters or helicopter tours.	10	5
Block Island Tourism and Recreation	Representatives of businesses supporting Block Island tourism and recreation activities, such as accommodations, restaurants, shops and services.	6	3
Mainland Coastal Tourism and Recreation	Representatives of businesses supporting mainland tourism and recreation activities, such as attractions, activities, accommodations and services. Limited to activities and facilities potentially within view of the BIWF.	4	1

*Participants are coded by their primary sector, however it is important to note that many play multiple roles in their communities and were thus able to provide input reflecting multiple sectors.

Table 2
Select Quotations and Sector of Participant.

Theme	Quotation	Sector
Visual Dimensions	"The view out there was nice [before] - if there was a ship in it. The tanker ship was going by, that was a beautiful view…. If there were fishing boats out there, that was a beautiful view… [but] if there was nothing out there and it wasn't a sunset…you can get that a lot of places. I think that you go out there at night, those structures break the plane, there's something to look at, the light reflects beautifully off of them….. You go out there at twilight and it is stunning… because the sun's setting on the other side, but it's all purple and pink and blue and the light is shining off of those [blades]. It's beautiful."	Block Island Tourism and Recreation
Wind Farm as Attractant	"It is like a tourist item, an attraction. We fish, but we go to the wind farms to get close to them, to look at them. People are interested in them. It has enhanced my business, that part of my business."	Charter Excursions
Physical and Visual Access	"[At that meeting] I said, you're gonna need to make sure that recreational fishermen are allowed to fish around these things before anybody is going to say yes."	Recreational Fishing
Wind Farm Information and "Misinformation"	"People are suspicious when one is down. 'Look, they're broken already!' Even though it's probably just turned off, you know."	Block Island Tourism and Recreation
Public Process Matters	"Let's just be realistic about this - this started ten years ago, but it was a done deal before it even hit, the news came to this community… Whether or not we wanted it, it would have happened with or without us, and that's the reality of it….we have zero jurisdiction beyond 600 feet of our shores. So they could do whatever they want."	Block Island Tourism and Recreation
Tradeoffs: Weighing Costs and Benefits	"I'd just assume they weren't there. I spent a good bit of my life out on the ocean looking out at the horizon, and it's just a wonderful thing, looking out over the empty sea horizon. However, if it's a net benefit to the people of Block Island - it reduces their energy cost and provides their energy - then I think overall I'm in favor of them. And I think that's one of the main things. Aesthetically, I think it's a negative, but if it's a benefit to the people there, then it's good."	Recreational Boating and Sailing
Cautionary Note: The Future	"five years from now…it's just gonna fade into the background."	Charter Excursions

declined to participate, noting they had not experienced positive or negative wind farm impacts and did not feel their participation would be relevant (see Section 6 for further discussion).

The second round of focus groups was convened in the spring of 2018. For these meetings, researchers contacted first-round participants and invited them to attend one of multiple follow-up meetings. During these sessions the researchers combined previously separate sectors in meetings as an additional strategy for ground-truthing findings. Ultimately, three follow-up focus group meetings took place in April 2018 with a total of 18 participants representing the five sectors. Interactions within all of the focus groups were convivial and respectful, perhaps due to the homogenous composition of the sector-focused groups and the fact that many already knew one another and interact frequently in professional and public settings.

For the first round meetings, following introductions and a discussion of research objectives, discussion began with a simple prompt (*"Tell us about your experiences with the Block Island Wind Farm."*); follow-up prompts were used to continue the conversation and to ensure a balanced discussion open to all views. For the second round sessions, meetings began with a short explanation of draft study findings, in the form of a list of themes. Discussion then began with a simple prompt ("*What do you think*?"), and follow-up prompts (e.g. *"What did we miss?"* or *"How could we best capture that?"*) kept the conversation moving. These meetings provided a means of corroborating and refining findings from the first round.

Focus group meetings were recorded and transcribed for coding and analysis. Each transcript was coded with NVivo qualitative data analysis software using thematic analysis and following the analytical procedures outlined by Braun and Clarke [76]. Thematic analysis was chosen because it is a flexible method that produces results accessible to policymakers and the public, and is well-suited to participatory research involving stakeholders; further, it has been used to study the social dimensions of coastal tourism in other contexts [76–78]. The team's coding approach included both broad-brush coding, identifying overarching topics, and a more fine-grained "splitting" approach, identifying specific topics and themes [79]. First, broad-brush coding was conducted to identify content related to each sector. Second, content was coded to identify overarching topics or themes. As this was exploratory research, topics and themes were identified based both on their prevalence across most or all sectors' focus group discussions and the extent to which they addressed the primary research question; topic and theme codes were thus identified in an iterative way through the coding process [see [76]]. Last, where relevant, researchers coded text that explicitly illustrated the positive, negative, or neutral effects of the wind farm on recreation and tourism. To ensure coding quality, two lead researchers reviewed meeting transcripts multiple times. One lead researcher then coded all first-round meeting transcripts and reviewed draft findings with the team. The lead coder then supervised the coding of all second-round meeting transcripts, and independently coded the same transcripts to ensure consistency.

5. Findings and discussion

This section discusses study findings, identified through the thematic analysis described above, within the context of the case and the literature. Results present a synthesis of findings from both rounds of focus groups, as the second round was used to corroborate and refine results from the first round. As focus group participants discussed their own experiences as well as their observations of others' experiences within each sector, we present these results as an initial exploration of how the tourism and recreation sectors have been affected by the BIWF. Further, we propose that this synthesis provides the foundation for a nuanced understanding of the complex ways in which tourists and recreationists interact with an offshore wind farm. Most topics and themes regarding the impacts of the BIWF on recreation and tourism were raised by all of the five recreation and tourism sectors. Further, we found that some areas of difference emerged within, rather than between, some of the sectors. As such, the discussion that follows is organized by cross-cutting theme rather than by sector; where relevant, sector-specific findings are specified within themes. Table 2 below draws attention to the views of individual sectors by highlighting select quotations attributed to each sector.

5.1. Visual dimensions

The visual dimensions of the BIWF were arguably the most prominent point of discussion. Although this is consistent with assumptions that tourists and recreationists are concerned with the visual effects of offshore wind [10], our findings do not support the contention that these effects are primarily negative.

Participants used diverse terms to describe the sight of the wind farm and characterized the view from different vantage points on land and on water, in different weather conditions, during daytime and nighttime, and in relation to other surrounding features. Participants' responses to the visual aspects of the BIWF were predominantly either positive or neutral. Words and ideas used to describe the appearance of the turbines included the turbines' aesthetic dimensions (e.g. "*elegant*," "*beautiful*"); their impressiveness (e.g. "*amazing*," "*engineering marvel*," "*awesome*"); or the effect the sight had on the viewer (e.g. "*calming*"). Relatively few participants described the BIWF's appearance in negative terms, and in several cases those who did reported that they were sharing the views of others who were not present. Negative reactions focused on the turbines' interruption of the viewscape (e.g. an "*eyesore*," something that "*ruins*," "*disrupts*," or "*blocks*" the view).

A consistent thread throughout these discussions was the extent to which the BIWF fit with the landscape and the natural character of the surrounding area. For example, participants would discuss the BIWF's appearance in comparison to other developments or large-scale infrastructure (e.g. the Newport Bridge or other island development), describing it in context and in relative terms. The notion of fit within the landscape informed some participants' perceptions of visual aesthetics, for example:

> *"The view out there was nice [before] - if there was a ship in it. The tanker ship was going by, that was a beautiful view…. If there were fishing boats out there, that was a beautiful view… [but] if there was nothing out there and it wasn't a sunset…you can get that a lot of places. I think that you go out there at night, those structures break the plane, there's something to look at, the light reflects beautifully off of them….. You go out there at twilight and it is stunning… because the sun's setting on the other side, but it's all purple and pink and blue and the light is shining off of those [blades]. It's beautiful."*

Conversely, some described the sight of the BIWF as an impact to the visual aesthetics of the area. In particular, some noted the loss of a dark night sky. For example, one boating participant commented: *"I think we can all appreciate it, especially being boaters and sailors. We know what it's like to be out there on a black night with the stars just unbelievably blowing us away, and you get something like this out there…. It just sort of reduces that particular magic that we all love about the ocean."* Participants also reported the negative reaction of many of the island's seasonal residents - considered part of the island's tourism economy - to the visual aesthetics of the BIWF. Because our research design was focused on tourism representatives, no seasonal residents participated in focus groups; however, one tourism representative commented, *"I don't think I've ever had this conversation with someone who actually lives here; it's often people who are summer residents who have some of those really - the big houses that overlook the wind farm - who were very concerned about it ruining their viewshed."*

Participants' focus on visual dimensions and fit within the landscape is consistent with the emerging social science on wind energy, much of which points to visual impact as a primary consideration shaping the public's response to onshore and offshore wind [9,27,28,32]. Participants' emphasis on the positive visual impacts of the BIWF are consistent with the findings of Landry et al. [42], who found that about half the coastal recreationists surveyed believed an offshore wind farm would positively enhance coastal views. Our findings present a notable counterpoint to other studies which have found a negative visual impact on coastal user groups e.g. [37,45,74]. For example, whereas Ladenburg and Dubgaard [45] found that recreational boaters and anglers perceived negative visual impacts of offshore wind farms and preferred them to be located further offshore, boaters and anglers in our study offered primarily positive reactions to the BIWF's appearance.

These findings also contrast studies which have shown that some offshore wind projects near coastal tourism and recreation destinations are perceived to fit poorly within the landscape e.g. [27,33]. For example, Devine-Wright and Howes [33], p. 277 found that an "industrial" offshore wind farm was perceived as a threat to the "'natural' beauty" of a tourism destination. By contrast, participants in our study reacted positively to the fit of the "*beautiful*" BIWF within Block Island's and coastal Rhode Island's recreation and tourism landscape. This finding is supported by surveys of Block Island and coastal Rhode Island conducted by Firestone et al. [32]: a plurality of respondents agreed that the wind farm fit the landscape, and wind farm opponents were more likely to describe it as "industrial," while supporters agreed with descriptions like "impressive" and "beautiful."

Importantly, participants' positive reactions were accompanied by some negative ones, including the negative visual impacts of the BIWF at night, a concern which has been noted in other studies e.g. [10]. Indeed, participants' expression of loss of the "*particular magic*" of the "*black sky*" speaks to the findings of Devine-Wright and Howes [33] on the role of place attachment in influencing attitudes toward offshore wind farms [see also [80]. This range of reactions to the BIWF's appearance illustrates Wiersma and Devine-Wright's [28], p. 500 description of the "important but inconsistent role of visual impact" regarding offshore wind farms.

Overall, these findings oppose the dominant narrative around tourists detailed by Rudolph [10], in which tourists are primarily interested in a pristine, nonindustrialized seascape. While our focus group participants did express some concerns about the effects of the BIWF on the visual quality of the area, they more often expressed an appreciation of or interest in the appearance of the wind farm. Moreover, as seen in the following section, the experience of tourists and recreationists with the BIWF goes far beyond the visual. In contrast to the construction of tourists as only interested in coastal areas as a natural retreat, viewing the wind farm as a disruptive and repelling presence, we find that they interact with the wind farm in more complex ways.

5.2. Wind farm as attractant

Directly opposing the view that wind farms discourage tourism, participants reported that the BIWF has become an attractant, drawing people to the site in many ways. In context, it seems that the wind farm has augmented the existing attractions in the area - the island itself and the appeal of fishing and boating right off its shores. In the case of boat-based activities, participants described their own interest or that of their clients, friends and family, or other fishermen in seeing the BIWF, usually in positive terms. For example, participants from the charter excursions sector, whose businesses offered fishing or sightseeing boat and helicopter trips in the area, noted that tourist interest in the wind farm "*attraction*" provided additional business opportunities including wind farm-focused ferry and charter boat tours. In another example, fishing participants explained how the turbine foundations seemed to attract new marine life, thus enhancing the fishing experience and attracting more anglers to the area. Further, charter participants reported how the BIWF enhanced their existing services, as the turbines provided another point of interest during a trip and a possible destination in case the fishing is not good: "*It is like a tourist item, an attraction. We fish, but we go to the wind farms to get close to them, to look at them. People are interested in them. It has enhanced my business, that part of my business.*"

Other boat-based participants noted downsides to this, especially due to the increase in fishing and boating activity around the BIWF. Some raised concerns about increased fishing pressure in this area, noting that the turbines draw inexperienced anglers, who they perceived as an increased navigational risk. For others, this increase in activity reduced their enjoyment of fishing there: one charter captain commented, "*When I fish, I prefer to fish alone…. And that area now, you can't fish in that area and be alone*." A recreational fishing participant quipped, "*We have been fishing that area for years and years and years. Now they have put a big sign on it in the form of five wind turbines [reading] 'This is a good place to fish.'*"

The BIWF has served as an attractant on land, as well. Block Island participants described the BIWF as a new destination for some tourists,

with numerous inquiries at the island visitors' center and an historic lighthouse overlooking the turbines. One commented, "*We're starting to see some people who are specifically here to see the wind farm*," and described these visitors as "*the engineer type*" interested in "*green tourism*." Importantly, the BIWF's role as attractant did not fully extend to the mainland, where participants emphasized the wind farm's marginal relevance because of its limited, weather-dependent visibility from mainland destinations: "*We are far enough away that - most people don't really notice them if they are not pointed out to them.*"

Some participants noted that the wind farm's role as attractant should be used to promote coastal tourism and recreation. Participants described an apparent lack of marketing as a missed opportunity for the state, the BIWF developer, and the offshore wind industry. One connected the turbines' accessibility to the potential for tourism growth:

> *"If you have these big [wind farm] projects that people are reading about in the paper and they're seeing about on TV, and they are 30 miles out, or they are 50 miles out or they are a 100 miles out, they are never going to see them. But the Block Island Wind Farm is so totally accessible, you know - you can see them from the [island's] bluffs, you can hop in a boat if someone ran regular trips, and you can see it. Why doesn't Rhode Island position that as we are 'The Gateway to the Future'? In terms of energy, you know…make it a tourist destination because you can see the future right there… Something that is normally way, way out of sight, beyond the reach of most of us, you can experience firsthand. Turn it into a benefit."*

Participants' emphasis on the role of the BIWF in tourism and recreation marketing highlighted their belief that the wind farm is generating, or could generate, positive impacts for the region's recreation and tourism industries. This echoes the best practices recommended by Albrecht et al. [47], who note that offshore wind farms should be incorporated into tourism. These potential positive impacts, coupled with evidence of visitor and charter client interest, reflects the emerging notion of "energy tourism" and in particular the idea that wind turbines may draw tourists to tourism landscapes [23,25].

Some studies have documented the potential role of an offshore wind project as a tourism attraction e.g. [37,38,41]. In a survey of beach-going tourists which utilized photo simulations, Lilley et al. [40, p. 3] found that "the attractive effect appeared to be stronger than the avoidance effect." Wiersma and Devine-Wright [28] identified "attracting tourists" as an aspect of offshore renewable energy associated with positive public responses. Westerberg et al. [36] found that while an offshore wind farm may dissuade some from visiting a coastal destination, this may be offset by an increase in other visitors who would be attracted to the wind farm and associated recreational activities, such as boating, diving, and fishing, which the authors found could be enhanced by offshore wind development. However, we have not found any studies which reflect the extent or diversity of ways in which the BIWF was described as a positive attraction for land- and boat-based tourism and recreational users. Indeed, by contrast, Ladenburg and Dubgaard [45] found that coastal users, including recreational boaters and anglers, had a strong preference for reducing the visual disamenities of offshore wind farms by placing them further offshore. The role of the BIWF as an attractant may also be contextual, influenced by its small scale and proximity to the island, which render it more visible and accessible than other offshore wind farms.

5.3. Physical and visual access

Related to the idea of the wind farm as an attractant is that of physical and visual access to the wind farm. Participants spoke in largely positive terms about the BIWF in connection with the access they have to it - either physically, to its surrounding waters, or visually, due to its proximity to shore and nearby harbors. This counters the conventional wisdom that wind farms should be placed far offshore, inaccessible and out of sight, and that tourists and recreationists are not interested in interacting with industrial structures in the ocean.

Boat-based access includes being able to navigate or fish right around the turbine bases; this type of access is available to those aboard private or charter vessels. Charter, fishing, and boating sector participants argued that fishing access was central to positive attitudes toward the BIWF: "*As long as access is not shut off, [the wind farm] is only going to be a positive addition.*" Some noted that access was integral to their support of the wind farm dating back to initial planning meetings: "*[at that meeting] I said, you're gonna need to make sure that recreational fishermen are allowed to fish around these things before anybody is going to say yes.*" Boat-based participants also discussed the BIWF's distance to nearby harbors, noting the short travel time from the island itself. Fishing participants considered the BIWF accessible by boat from the mainland (30 km/16 nm), whereas charter participants described the distance from mainland harbors as cost-prohibitive for sightseeing trips. A final element of access is visual, i.e. the ease of viewing the BIWF from shore or by boat. Visual access is available by private or charter boat, by ferry, or from the island or mainland shore. Boating and fishing participants who described the visual aspects of the BIWF in positive terms noted their enjoyment at being able to view the wind farm by boat "*up close during the construction process*" or "*up close and personal.*"

Anglers' and charter captains' positive focus on fishing access was predictable given that access concerns have been documented in connection with the BIWF [e.g. [39,81] and in connection with offshore wind farms in Europe [e.g. [82,83]. Whereas exclusion zones limit commercial fishing activity during standard wind farm operations around offshore wind farms in various European locations [see e.g. [84,85], no such operational exclusions have been established to date in the U.S. The importance of accessibility to boaters and captains running sightseeing trips, however, is notable, as it counters the findings of other studies in which coastal recreationists prefer offshore wind farms to be placed offshore and inaccessible e.g. [45]. Further, participants' positive emphasis on visual accessibility, and potential associated tourism benefits, speaks to the potential role of offshore wind farms as tourist attractions. Such potential was documented by Lilley et al. [41], who found evidence of visitor attraction to wind farm sightseeing trips and to beaches with wind farm views. These findings illustrate the positive recreation and tourism benefits which may be associated with a nearshore wind farm, while underscoring how such benefits may diminish for offshore projects. While our findings must be understood in context - the BIWF is a small project, close to the shore of a unique regional destination - they counter the notion that siting wind farms far offshore is always necessary to mitigate tourism and recreation concerns.

5.4. Wind farm Information…and "Misinformation"

The theme of wind farm public information and its effects on tourism and recreation emerged as a dominant point of discussion. Participants commented repeatedly on the availability, accuracy, and demand for wind farm information as issues of particular concern for tourism. This is a novel finding of our research. Participants raised scientific, technical and financial questions about the BIWF, and expressed a desire for better outreach and educational materials, such as signs or pamphlets, in this regard. Block Island and charter participants reported a high demand for such information from island tourists and charter clients. While this demand for information was not expressed as either a positive or a negative impact, it clearly signified visitor interest in the wind farm.

Discussions of what one participant described as wind farm "*misinformation*" - explained as rumors, misunderstanding, factually incorrect information, "*fake news*," and in some cases the deliberate spread of falsehoods - took place in all of the groups and was a dominant theme within the Block Island sessions. Some described how misunderstanding fed the concerns of seasonal residents - who are part of the local tourism economy - and other critics. For example, some

pointed out how individuals are "*very quick to criticize*" when the turbines are stopped for regular maintenance: *"People are suspicious when one is down. 'Look, they're broken already!' Even though it's probably just turned off, you know*."

In another example, there was extensive discussion about the "*misinformation*" surrounding local whale mortality events that had taken place that year. Participants noted how these events were attributed to the BIWF despite the absence of evidence: "*Just this past summer, there were dead marine mammals washing up on Block Island… and there are, you know, people blaming the windmills for that.*" Island participants reported that tourists had asked about this issue in the visitor center and other venues, and expressed concern about the effects of this on island tourism.

Participants' emphasis on information and "*misinformation*" echoes the findings of Waldo [86], who found a gap between information desired by locals and presented by wind farm developers. What is novel about our finding is that participants were concerned about the impact of this information gap on tourism. Moreover, it reveals that many tourists and recreationists crave information about the wind energy projects, with learning about the BIWF framed as a part of their experience. While other studies have documented the problem of information and misinformation in wind farm planning and policy e.g. [15], we have identified no other studies in which this was identified as a potential tourism impact.

5.5. Public process Matters

Participants spoke at length about aspects of the public process through which the BIWF was planned, sited, and permitted. Throughout these discussions, participants made it clear that their views of the BIWF's effect on tourism and recreation were informed by their broader experiences living and working in the area. Further, in several cases, participants' views were shaped by the extent and nature of their participation in the decision-making process. For example, anglers spoke in positive terms about their involvement in the marine spatial planning process which identified the BIWF site [see e.g. [55]. By contrast, Block Island participants spoke negatively about the decision-making process as well as the work of their own town council in dealing with the project. One explained: "*Let's just be realistic about this - this started ten years ago, but it was a done deal before it even hit, the news came to this community… Whether or not we wanted it, it would have happened with or without us, and that's the reality of it.…we have zero jurisdiction beyond 600 feet of our shores. So they could do whatever they want.*" This comment underscores a unique aspect of this case - the BIWF is sited off an offshore island that is legally part of, but politically and socially distant from, the state of Rhode Island. Further, this illustrates issues of power imbalance, trust in government, and the involvement of locals in decision-making which have been identified as factors influencing perceived process fairness and public support of wind farm projects [56,87]. For example, in their study of the Block Island case, Firestone et al. [57] found trust in state government to be the primary factor influencing perceived process fairness and, in turn, project support.

Participants' focus on the public process was unexpected, given our study's focus on tourism and recreation - activities which largely did not dominate public discussion or media coverage during the planning and permitting process [59]. Whereas anglers were concerned about fishing impacts and thus very vocal during the process see e.g. [81], most other tourism and recreation issues were not raised as major concerns, perhaps because these issues were addressed through the participatory policy development phases of the marine spatial planning process see e.g. [55]. However, participants are both industry representatives and private citizens, and some struggled to separate their private views and experiences from their perceptions as representatives of the tourism and recreation sectors. Participants' emphasis on their own participation in the process - either positive or negative - parallels the findings of other studies on the importance of public engagement, and perceived fairness of process, in influencing public attitudes toward offshore wind farms [9,28,56,87,88].

Despite characterizations of tourists as having narrow interests, with their attitudes towards offshore wind energy being defined by those interests, this finding illustrates that, in the case of the BIWF, tourism and recreation sector representatives' attitudes towards the project are also shaped by their experience with the planning and decision-making process.

5.6. Tradeoffs: Weighing costs and benefits

Importantly, many participants revealed that they actively weigh these positive and negative impacts of the BIWF in what one described as his own "*cost-benefit analysis*." This was especially the case among BI participants, with costs being the negative reactions of some people including seasonal residents, and benefits being the positive reactions of tourists who are interested in the wind farm and paying for wind farm taxi or boat tours. Additionally, participants weighed costs and benefits in considering the BIWF's broader effect on the community and region - beyond tourism and recreation. For example, one boating participant commented, *"I'd just assume they weren't there. I spent a good bit of my life out on the ocean looking out at the horizon, and it's just a wonderful thing, looking out over the empty sea horizon. However, if it's a net benefit to the people of Block Island - it reduces their energy cost and provides their energy - then I think overall I'm in favor of them. And I think that's one of the main things. Aesthetically, I think it's a negative, but if it's a benefit to the people there, then it's good*." More than any other finding, this acknowledgement of positive and negative features of the project, and the willingness to look beyond narrow interests, reveals that the tourism and recreation sector is more complex than typically portrayed.

5.7. Cautionary Note: The future

While participants reported few negative impacts of the BIWF on tourism and recreation, many tempered their positive comments with cautionary notes about the future. The BIWF is the first offshore wind farm in the U.S., and, at the time of data collection, had only been operational for under two years. Participants spoke of its newness and uniqueness, and of the potential for other projects to be constructed in the region, including much larger-scale developments proposed in U.S. federal waters adjacent to Rhode Island and throughout the region. Many participants raised cautionary points about these future projects. For example, some cautioned that the BIWF's role as attractant may only be due to its "*novelty*" - a new "*first in the nation*" development for the U.S. - which may fade with time, thus limiting any long-term wind farm-related tourism benefits. Charter participants referenced competitors who have purchased boats to run BIWF tours, but expressed caution about making BIWF-related business investments: "*five years from now…it's just gonna fade into the background.*" Fishing and charter participants also expressed concerns about potential future loss of access around the BIWF or other future wind farms, should managers decide to implement permanent exclusion zones. Further, several participants noted that their evaluation of impacts would likely be different for a larger-scale wind farm.

5.8. Synthesis: The tourism and recreation experience

Our study demonstrates that tourist and recreationist experiences with and interest in offshore wind farms go far beyond the beach. Our participants interacted with this new wind energy development both from land and on the water, engaging in or representing activities that include sightseeing, boating and sailing, and fishing, as well as spending time on beaches. Whereas Rudolph's research revealed a "constructed" storyline [[10], pp. 180–181] suggesting that tourists and visitors seek "otherness" in the form of a "natural coastal landscape" in

order to "reverse their everyday alienation from nature," thus leading to the decline of tourism and recreation around an offshore wind farm, our findings provide a more nuanced view of tourist and visitor motivations and experiences. Consistent with much of the literature, we found that tourists and visitors do, indeed, notice the visual dimensions of the wind turbines - but our study suggests they were largely undeterred by the sight of them. In fact, many study participants noted the attraction of the turbines' newness and novelty; this suggests that rather than finding "otherness" in a pristine landscape, people may embrace the 'other' of "*amazing*" industrial infrastructure. In some cases, the wind farm even enhanced individuals' visitor experiences, such as through an enhanced fishing opportunity. Further, in cases where the wind farm diminished the experience of nature - such as the sailor reflecting on "*that particular magic*" of a dark night sky - visitors may consider the tradeoffs of what is lost, weighing those costs with the benefits provided by the facility, rather than choosing a different location for their recreation. These results confirm Rudolph's [10] point that such "constructed" storylines are based on unsubstantiated claims and grounded in uncertainty.

6. Study limitations

Study results must be interpreted with caution. Our data were collected in 2017 and 2018, less than two years following project construction. Findings represent a qualitative analysis based on focus group discussions with 39 participants. Because of our choice to focus on tourism and recreation "key knowledgeables," typical tourists - including day or overnight visitors, or seasonal island residents - were excluded from our sample. While representatives from the full range of BI and mainland coastal tourism businesses were invited to participate, our final sample excluded some businesses due to non-response or non-participation. Our sample of mainland tourism representatives was particularly sparse due to non-response or invitees' perception that the BIWF was not relevant to them. Moreover, we acknowledge that we did not specifically seek demographic diversity within our sample, which may have limited some perspectives. Last, it is possible that participants' choice to participate was influenced by their views of the BIWF, such that we heard more positive than negative comments. While researchers approached recruitment in a neutral manner and sought to eliminate bias in focus group discussions, as discussed in Section 4 above, it is possible that individuals dissatisfied with or disinterested in the wind farm chose not to participate, or that the group dynamic inherent in focus groups limited negative input. Conversely, this may reflect overall support for the project see e.g. [29,32].

The BIWF itself is a single, unique case and thus inherently limited in its applicability to other cases or in the generalizability of findings derived from this research. It is the first offshore wind farm in the United States; small in scale in comparison to other wind farms, including those currently planned for U.S. federal waters; and has qualities of both a nearshore and an offshore project due to its location close to an offshore island. It is located next to Block Island, a small community and iconic tourist destination and one of the "Last Great Places" due to the amount of land preserved from development - a destination which may arguably attract visitors interested in sustainability and the natural environment. The BIWF is also 30 km (16 nm) from mainland Rhode Island, for which tourism is also important economically and to the regional quality of life. This distance, rather than the short distance to the island, is more representative of most projects currently proposed for U.S. waters.

By definition, these attributes may limit the generalizability of findings to other larger wind farms, projects located further offshore, or more mature projects. Nonetheless we argue that our findings contribute to understanding of the effects of an offshore wind farm on coastal and marine tourism and recreation. Focus groups allowed for in-depth discussion, a nuanced analysis of potential impacts and opportunities, and participants' contribution to knowledge production. Further, our research constitutes some of the first empirical social science available on the impacts of the United States' first offshore wind farm on recreation and tourism.

7. Conclusion and recommendations

Focus group discussions with tourism and recreation key knowledgeables at the BIWF revealed diverse viewpoints and largely positive experiences with the development. Because study participants were also residents of the region, some of their perspectives were influenced by their broader experience with the planning process. Consistent with other studies on offshore wind energy, visual impacts were a major concern of the participants; however, most described the wind farm's appearance in neutral or positive terms. Overall, the wind farm is functioning as an attractant, either as a novel feature to view from boats and the island or as a new recreational fishing destination. In fact, participants stressed that access was a key feature of the BIWF and felt the wind farm should be promoted as a tourism feature. They also felt that visitors crave quality information about the development, but these resources are not available. However, these key knowledgeables expressed caution that interest in this wind farm may be short-lived and that there may be less interest in or support for larger developments further offshore.

While this study is just one case, it illustrates that an offshore wind farm can be built very close to a tourism and recreation destination and result in positive or neutral effects with minimal impacts in the short term. Our research demonstrates that some of those positive effects are found in the project being sited at close proximity to such a destination - contradicting the conventional wisdom that projects should be sited offshore to minimize the impact on tourism and recreation. Visual and physical access to a wind farm can thus be a positive impact, and the project can act as an attractant to both land- and boat-based visitors and marine users.

Further, this study illustrates the range and nuance of tourist and recreationist experiences and interests, the complexities of the public and communities' reactions to offshore wind farms, and the ways in which they evaluate the tradeoffs of such projects, weighing perceived benefits against perceived impacts and disadvantages. Throughout the focus groups, we found that participants were well aware of the advantages and disadvantages of the BIWF regarding tourism and recreation, as well as the positive and negative responses of their peers, clients, colleagues, and neighbors. Therefore, we suggest that, in contrast to the "constructed" view of tourists described by Rudolph [10], researchers and managers focus on the characteristics, experiences, interests, and values of a full range of tourists and recreationists, which shape their interactions with and interpretations of offshore wind energy.

Last, this study illustrates the ways in which qualitative research can help build a complex, nuanced understanding of the social dimensions of offshore wind farms. Engaging key knowledgeables in in-depth conversations about their experiences with a specific project enabled us to build a more complete picture of the interactions between tourism, recreation, and an offshore wind energy project. Moreover, by taking an iterative approach–conducting a second round of focus groups to discuss and refine initial findings–we were able to build confidence in the validity of these findings.

While this research has contributed to a nuanced understanding of the impacts of an offshore wind farm on coastal and marine tourism and recreation, further qualitative research is warranted to refine understanding of these impacts and to determine their applicability to other projects in different contexts, particularly larger developments located further offshore, such as the projects currently planned for U.S. federal waters. Additionally, quantitative survey research could test hypotheses developed through this qualitative work on broader samples of tourism and recreation professionals, as well as various subgroups of tourists and recreationists (for example, seasonal versus full-time residents).

Such hypothesis-driven work could contribute to future theory-building in this understudied area. As the BIWF is the United States' first offshore wind farm, and is still relatively new, more research is needed to understand whether or how the impacts reported here change over time, particularly the relationship between the novelty of the development and the role of the BIWF as an attractant. Further, research at other offshore wind farm sites is needed in order to draw from multiple cases and thus improve generalizability of findings.

Based on our findings, we offer three recommendations for project developers, policymakers, and resource managers engaged in offshore wind planning and siting. First, while our results suggest that an offshore wind farm may potentially have positive effects on coastal and marine tourism and recreation, this is highly context-specific, depending on the scale of the project, its visibility from and proximity to land, and its accessibility by land and sea. In our case, the BIWF's relatively positive effects may be attributed to its unique small scale and location within sight and access of a small island destination known for its natural beauty and sometimes marketed as a "green" destination. We urge decision-makers to consider these contextual factors carefully when choosing project sites and weighing potential costs and benefits. Second, as our research shows that tourism and recreation professionals' and participants' experiences during the planning process may influence their perception of project impacts, we recommend that these individuals be actively included in all phases of wind farm planning and implementation. Last, our discussions with tourism and recreation professionals, in particular, showed that these individuals are grappling with questions about how to present and facilitate an offshore wind farm visitor experience through tourism marketing, promotion, and the provision of information. Decision-makers should engage with these individuals and may wish to consider providing the necessary resources within the broader context of offshore wind farm community benefits. Such an arrangement may have mutual benefit.

8. Disclaimer

The views in this paper are the authors' own and do not represent those of the United States United States Coast Guard, the U.S. Department of Homeland Security, the U.S. Bureau of Ocean Energy Management, the U.S. Department of Interior, or any other agency or office of the U.S. Government.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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