Marine Recreationists’ Place Attachment and Attitudes towards Offshore Wind Energy Development

Matthew T.J. Brownlee ¹ & Jeffrey C. Hallo ²

¹ The University of Utah
² Clemson University

ISSRM 2013, Estes Park, CO
Presentation

Marine recreationists
Support and opposition
Place attachment
Context and questions
Methods
Results
Implications
Why marine recreationists?

- Many assessments do not include focused investigations into sub-populations (Ellis et al., 2007)
- Proposed locations overlap with important marine recreation resources and tourist destinations (Gamboa & Munda, 2007)
- Repeated activity and place attachment may influence opposition and support for management action (e.g., Kyle et al., 2005)
- Limited investigations (Brownlee, 2012)
Opposition and support

**Opposition**
- Viewshed
- Skepticism about productivity
- Damage natural systems
- Displace people
- Harm economy

**Support**
- Energy freedom
- Good for natural systems
- Benefit future generations
- Structure for marine species
- Rebranding
- Provide jobs, improve economy

e.g., Blaydes et al., 2008; DeSantis & Reid, 2004; Devine-Wright, 2010; Firestone & Kempton, 2007; Graham et al., 2009; Kempton et al., 2005; Pasqualetti, 2011; Wolsink, 2007
Place attachment

- The emotional and cognitive connections between a person and a place (Altman and Low 1992)
- Identity and dependence (Williams & Vaske, 2003)
- Place attachment has explanatory power (Vorkinn & Riese, 2001)
- Community differences (Devine-Wright, 2010)
Georgetown (GTN) and N. Myrtle Beach (NMB)
Research objectives and questions

- Assess scale performance across locations and activity groups
- Identify marine recreationists’ opposition, support, and place attachment across two communities of marine recreationists
- Comparing communities: Will marine recreationists’ place attachment influence support and opposition with equal strength and direction?
Mixed Methods Design

- Exploratory sequential design (Creswell & Plano Clark, 2011)
  - Instrument development approach (Creswell et al., 2003)

- Phase I - Interviews with key informants (Jan – March 2011)
  - Purposive sampling (Creswell, 2007)
  - Modified Seidman approach (Seidman, 2013)
  - Open topic coding (Creswell, 2007; Miles & Huberman, 1994)
  - $\sum 15$ hours; $n = 17$

- Phase II - Instrument development (DeVellis, 2003; Noar, 2003)
  - Opposition and support, likelihood of civic actions, desire for tourism-related wind energy activities (e.g., educational boat tours of turbines)
  - Expert review ($n = 4$) and validation ($n = 32$)

- Phase III - Administration of the questionnaire (May – August 2011)
  - Stratified sampling at 10 locations (76% response rate; 4.5% C.I.)
  - Map and written statement
Opinions about Potential Offshore Wind Energy in the Georgetown Coastal Area (South Carolina)

Important questions for people using coastal resources

After you complete this questionnaire, please return it to the field researcher

All responses are confidential
Thank you for your cooperation
<table>
<thead>
<tr>
<th></th>
<th>GTN ($n = 231$)</th>
<th>NMB ($n = 252$)</th>
<th>$\chi^2$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of $n$</td>
<td>% of $n$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angler</td>
<td>38.7</td>
<td>Angler</td>
<td>39.0</td>
<td></td>
</tr>
<tr>
<td>Boater</td>
<td>19.2</td>
<td>Boater</td>
<td>16.6</td>
<td>4.23</td>
</tr>
<tr>
<td>Board walk user</td>
<td>18.5</td>
<td>Board walk user</td>
<td>15.6</td>
<td></td>
</tr>
<tr>
<td>Beach user</td>
<td>23.6</td>
<td>Beach user</td>
<td>28.8</td>
<td></td>
</tr>
<tr>
<td>EUH: Moderate</td>
<td>-</td>
<td>EUH: Moderate</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>28.3</td>
<td>Female</td>
<td>50.0</td>
<td>22.79*</td>
</tr>
<tr>
<td>White</td>
<td>76.9</td>
<td>White</td>
<td>93.3</td>
<td>31.88*</td>
</tr>
<tr>
<td>Black</td>
<td>16.0</td>
<td>Black</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>County residence</td>
<td>51.0</td>
<td>County residence</td>
<td>28.4</td>
<td>22.44*</td>
</tr>
</tbody>
</table>

*Note.* GTN = Georgetown, SC; NMB = North Myrtle Beach, SC; $\chi^2$ = Chi-Square value; $t = t$-value; EUH = Experience use history adapted from Schreyer, Lime, & Williams (1984); *a* gender was significantly correlated with opposition and support and therefore retained in the model; Age, income, education did not differ at $p < 0.05$ and are not displayed; *$p < 0.05$
Opposition to potential offshore wind energy: 11%

Support for potential offshore wind energy:
- Supporters: 49%
- Neutral: 22%
- Pros and cons: 18%
### Support

“I support offshore wind energy in this area because I think it will…”

<table>
<thead>
<tr>
<th>Benefit</th>
<th>GTN Mean</th>
<th>SD</th>
<th>NMB Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase energy independence</td>
<td>5.45</td>
<td>1.99</td>
<td>5.95</td>
<td>1.42</td>
</tr>
<tr>
<td>Help the environment</td>
<td>5.43</td>
<td>1.95</td>
<td>5.96</td>
<td>1.42</td>
</tr>
<tr>
<td>Benefit future generations</td>
<td>5.36</td>
<td>1.97</td>
<td>6.04</td>
<td>1.37</td>
</tr>
<tr>
<td>Improve the marine habitat for fish</td>
<td>4.95</td>
<td>2.01</td>
<td>5.67</td>
<td>1.52</td>
</tr>
<tr>
<td>Give the area a positive reputation</td>
<td>4.92</td>
<td>2.06</td>
<td>5.73</td>
<td>1.46</td>
</tr>
<tr>
<td>Improve the local economy</td>
<td>4.88</td>
<td>2.01</td>
<td>5.62</td>
<td>1.47</td>
</tr>
</tbody>
</table>

### Opposition

“I oppose offshore wind energy in this area because I think it will…”

<table>
<thead>
<tr>
<th>Benefit</th>
<th>GTN Mean</th>
<th>SD</th>
<th>NMB Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease scenic and natural beauty</td>
<td>3.72</td>
<td>2.24</td>
<td>3.37</td>
<td>2.03</td>
</tr>
<tr>
<td>Ultimately, not be as productive as promised</td>
<td>3.69</td>
<td>2.12</td>
<td>3.39</td>
<td>1.89</td>
</tr>
<tr>
<td>Negatively influence the marine environment</td>
<td>3.32</td>
<td>1.98</td>
<td>3.23</td>
<td>1.98</td>
</tr>
<tr>
<td>Drive visitors away from the area</td>
<td>3.14</td>
<td>2.06</td>
<td>3.01</td>
<td>1.94</td>
</tr>
<tr>
<td>Harm the area’s economy</td>
<td>2.95</td>
<td>1.95</td>
<td>2.93</td>
<td>1.90</td>
</tr>
</tbody>
</table>

Note. GTN = Georgetown, SC; NMB = North Myrtle Beach, SC; all psychometric properties invariant across communities except covariance; CFI = 0.976 and 0.963; NNFI = 0.969 and 0.951; RMSEA = 0.082 and 0.074; SRMR = 0.023 and 0.024; * p < 0.05
Place attachment

Place identity

\[ M_1 = 6.21 \quad M_2 = 5.76 \quad (z = 5.25) \]

\[ \beta_1 = 0.95* \quad \beta_2 = 0.94* \]

\[ R^2_1 = 0.90 \quad R^2_2 = 0.88 \]

Place dependence

\[ M_1 = 5.78 \quad M_2 = 5.32 \quad (z = 4.35) \]

\[ \beta_1 = 0.93* \quad \beta_2 = 0.85* \]

\[ R^2_1 = 0.86 \quad R^2_2 = 0.74 \]

Community social attachment

\[ M_1 = 5.48 \quad M_2 = 5.07 \quad (z = 3.74) \]

\[ \beta_1 = 0.78* \quad \beta_2 = 0.84* \]

\[ R^2_1 = 0.62 \quad R^2_2 = 0.70 \]

Support

\[ M_1 = 5.20 \quad M_2 = 5.83 \quad (z = 5.14) \]

\[ \beta_1 = -0.18* (SE = 3.38) \quad \beta_2 = 0.16* (SE = 2.69) \]

\[ R^2_1 = 0.04 \quad R^2_2 = 0.03 \]

Opposition

\[ M_1 = 3.49 \quad M_2 = 3.19 \quad (z = 2.21) \]

\[ \gamma_1 = -0.78 \quad \gamma_2 = -0.43 \]

\[ R^2_1 = 0.04 \quad R^2_2 = 0.004 \]

Note. Bolded text indicates significant differences between GTN and NMB communities at \( p < 0.05 \). 1 Georgetown, SC; 2 N. Myrtle Beach, SC; * significant difference between the parameter estimates within GTN community; CFI = 0.966; NNFI = 0.962; SRMR = 0.090; SB\( \chi^2 \) (\( df \)) = 1101.06* (480); *\( p < 0.05 \)
Summary

• Desirable measurement performance

• Both communities had high place attachment, high support, and low opposition

• Although place attachment has relationships with opposition and support, the direction of this relationship can vary across locations within relative close proximity

• Within one community: Place attachment had a stronger influence on opposition

• Place attachment had significant but limited explanatory power
So what?

- Scale items can be used to inform strategic communication.
- Cannot assume that different communities of marine recreationists in close proximity hold the same level of attachment to place and/or opposition and support.
- Higher levels of place attachment may not always lead to more place protective behaviors.
- Interpretation of potential impacts should be included.
- Low explanatory power: Include additional predictive constructs.
"This presentation was prepared in part as a result of work sponsored by the S.C. Sea Grant Consortium with NOAA financial assistance award NA060AR4170015. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of South Carolina Sea Grant or NOAA."

For more details regarding this study, please see