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Coastal Resident Trust, Similarity, Attitudes, and Intentions Regarding New Marine Reserves in Oregon

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ABSTRACT

This article examined coastal resident attitudes and behavioral intentions associated with new marine reserves (MRs) in Oregon, as well as resident perceived similarity and trust in the lead managing agency (Oregon Department of Fish and Wildlife). Data were obtained from a survey of residents along the Oregon coast ($n = 596$). Most residents perceived moderate similarity and trust in the agency, had stronger attitudes toward potential advantages of MRs, and would vote in support for the establishment of these reserves. Those living nearest the reserves had the most positive attitudes and were most supportive. Residents who perceived themselves as similar to the agency were more likely to trust this agency, and those with higher trust had stronger attitudes toward advantages of MRs and less agreement with disadvantages of the reserves. Residents with stronger attitudes toward advantages were most likely to vote for MRs, whereas those who agreed with disadvantages were less supportive.

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The act of establishing marine protected areas (MPAs) and marine reserves (MRs)[1] is often in response to threats such as overfishing, pollution, invasive species, and ineffectiveness of the status quo method of managing natural resources (Lubchenco et al. 2003; Canessa and Dearden 2016). Given global efforts to recognize the vulnerability of oceans to these threats, increasing expanses are under consideration for being designated as new or expanded MPAs and MRs (Pita et al. 2011; Canessa and Dearden 2016). Disagreement over the necessity of these areas and what constitutes adequate management has led to conflicts among stakeholders and challenges for agencies when establishing these conservation designations (Himes 2007; Gray et al. 2010). Although concerns can arise postestablishment, success of these areas is often determined by issues that take root preestablishment (Salz and Loomis 2004; Heck, Dearden, and McDonald 2011).

Community participatory processes (e.g., meetings, focus groups, surveys) prior to MPA and MR establishment can help to negate some of these concerns by giving people opportunities to be heard and valued when management is at a malleable stage, thereby aiding management postestablishment (Himes 2007; Thomassin et al. 2010; Heck and Dearden 2012). Studies have shown, however, that attitudes and intentions toward these areas

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and their management vary among stakeholders, with more negative responses often expressed by those who feel their livelihoods will be impacted (Salz and Loomis 2004; Himes 2007; Gray et al. 2010; Heck, Dearden, and McDonald 2011; Heck and Dearden 2012). For example, given that MPAs and MRs exist primarily to regulate human behavior, effects on user groups (e.g., commercial and recreational fishing) and local residents in nearby communities are often more pronounced than for other populations (Voyer, Gladstone, and Goodall 2012). Factors influencing these attitudes and intentions toward MPAs and MRs may include trust in agencies responsible for the areas and perceptions of similarity with these agencies. Developing trust between residents and managing agencies is important to garner support for decisions such as establishing new MPAs and MRs (Stern 2008; Wynveen and Sutton 2015). This article examined coastal resident attitudes and intentions associated with a new system of MRs in Oregon (United States), as well as resident perceptions of similarity and trust in the lead managing agency (Oregon Department of Fish and Wildlife [ODFW]). Residents of communities adjacent to these reserves were compared to those living in more distant locations.

Conceptual Foundation

Attitudes and Behavioral Intentions

An attitude is the extent of disfavor or favor toward an object or issue, and attitudes range from general to specific and contain both affective (emotional) and belief components (Fishbein and Ajzen 2010). Studies have examined resident attitudes toward MPAs and MRs, including whether people disfavor or favor potential advantages (e.g., protecting marine species, conserving biodiversity, generating tourism, increasing scientific understanding) and disadvantages (e.g., management costs, fishing limitations, enforcing regulation compliance) of these areas (Cocklin, Craw, and McAuley 1998; Mangi and Austen 2008; Thomassin et al. 2010; Pita et al. 2011). Although many studies have shown that the majority of local residents living near MPAs and MRs favor these areas (Cocklin, Craw, and McAuley 1998; Mangi and Austen 2008; Dimitrakopoulos et al. 2010; Thomassin et al. 2010), some have revealed ambivalence (Rosendo et al. 2011) or strong opposition toward these areas (Fiallo and Jacobson 1995; Webb, Maliao, and Siar 2004). Conflicts between protected areas and people living within immediate vicinities are common (Stern 2008). It is important to examine attitudes of local residents because they can help agencies understand how constituents feel about these areas and their management, and reduce the likelihood of alienating important stakeholders (Salz and Loomis 2004; Needham, Haider, and Rollins 2016).

Theories such as the cognitive hierarchy (Fulton, Manfredo, and Lipscomb 1996) and the theory of reasoned action (Fishbein and Ajzen 2010) propose that these attitudes are part of a larger structure of cognitions. For example, the most immediate determinant of behavior is thought to be intention to perform or not perform that behavior, and intentions are influenced by attitudes (Pate et al. 1996; Fishbein and Ajzen 2010). It is important to understand behavioral intentions, such as whether residents would vote in support or opposition of establishing new protected areas or revising regulations in existing areas, because this allows agencies to make decisions within the voting public's tolerance limits (Manfredo, Teel, and Bright 2004; Needham, Haider, and Rollins 2016). Consistent with

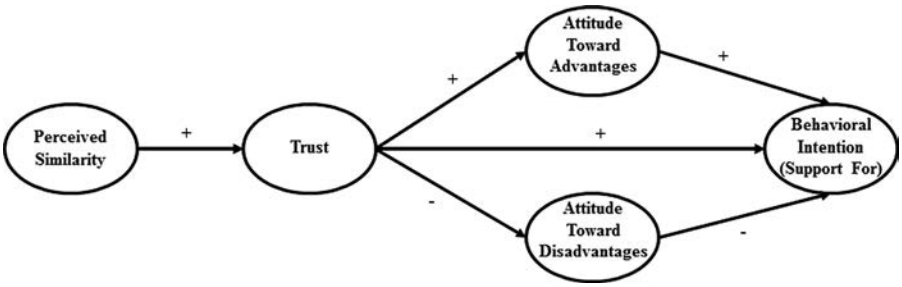

Figure 1. Hypothesized model of relationships (+: positive relationship, −: negative relationship).

these theories, studies have found that attitudes have predicted intentions associated with issues in marine environments (e.g., Aipanjiguly, Jacobson, and Flamm 2003; van Riper et al. 2013). The following hypotheses, therefore, were examined in the context of new MRs in Oregon (Figure 1):

H_1: Residents with stronger attitudes toward potential advantages of new MRs will be more likely to vote in support of the reserves.

H_2: Residents with stronger attitudes toward potential disadvantages of new MRs will be less likely to vote in support of the reserves.

Trust

Numerous factors influence attitudes and behavioral intentions, including trust between individuals and managing institutions (Stern 2008). Most definitions of trust suggest that it involves the willingness to accept vulnerability based on positive expectations of another individual or entity in the face of uncertainty (Rousseau et al. 1998; Stern and Coleman 2015). Earle and Cvetkovich (1995) defined trust in the context of governance as a willingness to rely on those with decision-making responsibility to take actions representing public interests. According to Hardin (2002), trust involves an individual (trustor) trusting an entity (trustee) to do something (action). Trust may exist on a continuum from distrust (trustee is thought to perform an action that is harmful to the trustor), to lack of trust (absence of any trust judgment), to complete trust (Stern and Coleman 2015), with distrust being an especially major obstacle to effective natural resource management (Davenport et al. 2007).

There are different types of trust depending on context (Wynveen and Sutton 2015). Interpersonal trust, for example, is based on interactions between trustors and trustees, whereas institutional trust does not focus on these relationships and is instead based on perceptions of the trustee's abilities (Mishler and Rose 2005). In addition, Stern and Coleman (2015) differentiated among dispositional trust (context-independent baseline tendency or predisposition), rational trust (predicated on expected outcome, benefit, or reciprocity), affinitive or social trust (related to emotions, shared identities, and perceptions of connectedness), and procedural trust (based on systems-based rules or procedures that decrease vulnerability). In addition to dispositional and affinitive (shared values) trust, Smith et al. (2013) also specified other types of trust, including trust in federal government (can influence trust in local managers) and trust based on moral (ethical decisions) and technical competencies (scientific and technical knowledge).

There are inconsistencies in the measurement of trust. Some researchers suggest that trust consists of dimensions such as fairness, responsibility, equity, ability, integrity, competence, sincerity, credibility, consistency, inclusiveness, and caring (Johnson 1999; Poortinga and Pidgeon 2003; Davenport et al. 2007; Smith et al. 2013). This body of literature presumes the processes underlying trust are complex and substantial understanding of a trustee's actions is needed to make judgments of trust. An alternative approach views trust as a singular unidimensional concept without these multiple dimensions because they can be difficult to separate from each other, especially in the context of public trust in government agencies (Siegrist, Cvetkovich, and Roth 2000; Cvetkovich and Winter 2003; Vaske, Absher, and Bright 2007; Needham and Vaske 2008; Lijeblad, Borrie, and Watson 2009).

Some studies have shown low agency trust and even distrust in communities adjacent to protected areas (Carroll and Hendrix 1992; Krannich and Smith 1998), whereas others have reported higher trust (Davenport et al. 2007). Public trust in natural resource agencies has also been shown to influence both attitudes and behavioral intentions associated with management decisions (Stern and Coleman 2015). Cvetkovich and Winter (2003), Vaske, Absher, and Bright (2007), Winter, Palucki, and Burkhardt (1999), and Winter, Vogt, and McCaffrey (2004), for example, showed that trust directly influenced attitudes toward forest management actions (e.g., fees, species protection, prescribed burning). Wynveen and Sutton (2015) found a relationship between trust and intentions to engage in climate change mitigation behaviors. Dietz, Dan, and Shwom (2007) observed that trust in government positively predicted support for climate change policy. Stern (2008; 2010) reported that trust assessments strongly predicted support and opposition toward national parks. Although these studies treated trust as the independent variable, it is possible to model attitudes as antecedent to trust. Attitudes about an agency's previous actions, for example, may influence current or future trust in the agency. Both the rule of correspondence and the principle of specificity, however, suggest that attitudes, intentions, and other cognitions such as trust should correspond in action, target, context, and time (Fishbein and Manfredo 1992; Fishbein and Ajzen 2010). Current trust in an agency, for example, could influence attitudes toward potential future protected areas for which the agency would be responsible, but the opposite is less likely because of limited correspondence in time (difficult for the future to predict the present; Fishbein and Manfredo 1992). Given this existing research, the following hypotheses were tested in the context of new MRs in Oregon (Figure 1):

H_3: Residents with higher trust in the managing agency will have stronger attitudes toward potential advantages of new MRs.

H_4: Residents with lower trust in the managing agency will have stronger attitudes toward potential disadvantages of new MRs.

H_5: Residents with higher trust in the managing agency will be more likely to vote in support of new MRs.

Perceived Similarity

Trust in an institution and its abilities can be influenced by affinitive or social attributes such as shared values (Davenport et al. 2007; Stern and Coleman 2015). Decisions about

trusting an agency involve a link between perceptions of the agency and trust in its actions; people trust organizations perceived to share similar values and opinions (Winter, Palucki, and Burkhardt 1999; Siegrist, Cvetkovich, and Roth 2000; Needham and Vaske 2008; Stern and Coleman 2015). Trust, therefore, can be based on perceived similarity and qualities of the trustee rather than on carefully reasoned attributions of rational dimensions of trust or direct understanding of the agency's procedures (Siegrist, Cvetkovich, and Roth 2000). This approach has been referred to as salient value similarity or perceived similarity, and studies have shown that it can predict trust in resource management contexts (Cvetkovich and Winter 2003; Vaske, Absher, and Bright 2007; Needham and Vaske 2008; Stern and Coleman 2015).

Perceived similarity differs from other views of how trust judgments are made where trust is based on agency competence, fairness, and consistency (Earle and Cvetkovich 1995). These other views assume that an individual has a detailed understanding of the agency that allows for a judgment of trust to be made and the time to formulate this judgment. Research has shown, however, that individuals often lack the understanding, time, or willingness to investigate these issues, and instead base trust largely on perceptions of similar values and opinions (Earle and Cvetkovich 1995; Siegrist, Cvetkovich, and Roth 2000). The following hypothesis, therefore, was tested in the context of new MRs in Oregon and the lead agency responsible for the areas (ODFW; Figure 1):

> H_6: Residents who perceive themselves to share values and opinions similar to those of the managing agency will be more likely to trust the agency.

Methods

In 2000, the Oregon Ocean Policy Advisory Council examined the potential for having MRs in Oregon. With Washington to the north and California to the south having reserves, the noticeable gap in Oregon's marine areas prompted concerns about needing to conserve habitat and biodiversity in these areas. In 2009, six sites were considered for MRs; two (Otter Rock, Redfish Rocks) were selected as pilot sites and three others (Cape Falcon, Cascade Head, Cape Perpetua) were selected in 2012 for future implementation. Development activities and removal of marine life are prohibited in the MRs, but these areas are also interspersed with a few less restrictive MPA designations where development is prohibited, but some fishing is allowed.

Data were obtained from residents of the Oregon coast. Questionnaires were administered by mail in late 2012 and early 2013 to residents selected randomly from postal records. A sample of 2,600 addresses was equally divided between residents of communities of place nearest the MRs and those living along the rest of the coast. The 1,300 addresses in the communities of place were distributed among the five areas (260 addresses each) corresponding to each MR. A 10-mile radius was mapped around the land point nearest the center of each MR and addresses within this radius represented the communities of place sample. The other 1,300 addresses were spread throughout the rest of the Oregon coast between the Pacific Ocean and Coast Mountain Range a few miles inland. Delineation by proximity is common for examining whether responses differ between residents closer to protected areas and those farther away (Winter, Palucki, and Burkhardt 1999; Jim and Xu 2002).

Questionnaires were administered using three mailings (Vaske 2008). The first and third mailings included a letter, questionnaire, and prepaid reply envelope. The second mailing was a postcard reminder. The sample size was $n = 596$ (27% response rate accounting for undeliverables [incorrect address, moved]) with $n = 326$ from communities of place and $n = 270$ from the rest of the coast. A telephone nonresponse bias check was administered to a sample of nonrespondents ($n = 202$) who answered 10 questions from the questionnaire (e.g., vote for or against establishing MRs, trust in ODFW to make good decisions, gender, age). There were no substantive differences between those who responded to the mail survey and those in this nonresponse check. The data were, however, weighted by population proportions (number of residents in communities of place nearest the MRs versus the rest of the coast) based on U.S. Census block information.

Questionnaire items measuring similarity, trust, attitudes, and intentions are in Tables 1–5. Perceived similarity and trust questions were almost identical to previous research (Winter, Palucki, and Burkhardt 1999; Siegrist, Cvetkovich, and Roth 2000; Vaske, Absher, and Bright 2007; Needham and Vaske 2008) and measured institutional, technical competency, and social or affinitive aspects of trust (Mishler and Rose 2005; Smith et al.

Table 1. Perceived similarity with the managing agency.

	Mean[a]				
ODFW …	Communities of place	Rest of coast	Total	Factor loadings[b]	Alpha if deleted[b,c]
Shares similar values as I do	3.49	3.35	3.38	.93, .84, .89	.94, .95, .94
Shares similar opinions as I do	3.37	3.23	3.26	.95, .89, .92	.94, .94, .94
Shares similar goals as I do[d]	3.45	3.25	3.30	.85, .89, .88	.94, .94, .94
Thinks in similar ways as I do[e]	3.25	3.05	3.10	.90, .92, .91	.94, .94, .94
Takes similar actions as I would	3.17	3.02	3.05	.86, .91, .88	.95, .94, .94

[a]1 = Strongly disagree to 5 = strongly agree. Scale: 3.35/5.00 (communities of place), 3.18/5.00 (rest of coast), 3.22/5.00 (total), $t = 2.14$, $p = .032$, $r_{pb} = .09$.
[b]First numbers: communities of place, second: rest of coast, third: total.
[c]Cronbach alphas = .95, .95, .95.
[d]$t = 2.29$, $p = .022$, $r_{pb} = .10$.
[e]$t = 2.37$, $p = .018$, $r_{pb} = .10$.

Table 2. Trust in the managing agency.

	Mean[a]				
I trust ODFW to …	Communities of place	Rest of coast	Total	Factor loadings[b]	Alpha if deleted[b,c]
Provide best available information about MRs	3.64	3.45	3.50	.88, .88, .88	.97, .96, .96
Provide timely information about MRs	3.49	3.34	3.37	.85, .87, .86	.97, .96, .96
Provide truthful information about MRs	3.72	3.55	3.60	.91, .81, .87	.96, .96, .96
Provide me with enough information to decide what actions to take regarding MRs	3.53	3.36	3.40	.86, .79, .83	.97, .96, .96
Manage MRs using best available information about non-human species in these areas	3.67	3.56	3.59	.92, .88, .90	.96, .96, .96
Manage MRs using best available information about human uses of these areas	3.57	3.43	3.46	.89, .83, .86	.96, .96, .96
Work with other organizations to inform management of MRs	3.57	3.40	3.44	.88, .84, .86	.97, .96, .96
Use public input to inform management of MRs	3.29	3.22	3.24	.85, .84, .85	.97, .96, .96
Make good decisions regarding management of MRs	3.50	3.35	3.39	.92, .88, .90	.96, .95, .96

[a]1 = Strongly disagree to 5 = strongly agree. Scale: 3.56/5.00 (communities of place), 3.41/5.00 (rest of coast), 3.45/5.00 (total), $t = 1.77$, $p = .078$, $r_{pb} = .08$. No differences for all variables, $p > .05$.
[b]First numbers: communities of place, second: rest of coast, third: total.
[c]Cronbach alphas = .97, .96, .97.

Table 3. Attitudes toward disadvantages of MRs.

In Oregon, MRs would …	Mean[a] Communities of place	Rest of coast	Total	Factor loadings[b]	Alpha if deleted[b,c]
Cause some species to become overpopulated	10.85	11.15	10.93	.53, .40, .43	.83, .80, .81
Prevent people from using reserve areas[d]	10.60	11.85	11.54	.72, .79, .76	.80, .76, .76
Reduce recreational fishing[e]	11.75	13.00	12.69	.86, .87, .87	.76, .71, .72
Reduce commercial fishing[f]	11.21	12.55	12.22	.73, .79, .76	.79, .73, .74
Cost a lot to manage[g]	13.18	14.50	14.17	.77, .54, .66	.80, .79, .80

[a]Computed responses by multiplying each belief by its affective evaluation: 1 = strongly disagree and very good (initially 1 on separate scales) to 25 = strongly agree and very bad (initially 5 on separate scales; reverse coded). Scale: 11.58/25.00 (communities of place), 12.53/25.00 (rest of coast), 12.29/25.00 (total), $t = 2.65$, $p = .008$, $r_{pb} = .11$.
[b]First numbers: communities of place, second: rest of coast, third: total.
[c]Cronbach alphas = .83, .80, .81.
[d]$t = 2.52$, $p = .012$, $r_{pb} = .11$.
[e]$t = 2.50$, $p = .013$, $r_{pb} = .11$.
[f]$t = 2.72$, $p = .007$, $r_{pb} = .12$.
[g]$t = 2.56$, $p = .011$, $r_{pb} = .11$.

2013; Stern and Coleman 2015). Attitude measures combined affective ("very bad" to "very good") and belief ("strongly disagree" to "strongly agree") responses to potential advantages and disadvantages associated with Oregon's MRs. Following established techniques (Pate et al. 1996; Fishbein and Ajzen 2010), scores were developed by multiplying each belief by its corresponding affective evaluation.[2] Behavioral intentions were measured by asking how residents would respond if they were given an opportunity to vote for or against establishing MRs in Oregon, and their certainty of voting this way. Consistent with past research, voting intentions were multiplied by certainty of this vote (Pate et al. 1996). Additional measures of intentions asked the extent that residents intended to support or oppose MRs in Oregon.

Table 4. Attitudes toward advantages of MRs.

In Oregon, MRs would …	Mean[a] Communities of place	Rest of coast	Total	Factor loadings[b]	Alpha if deleted[b,c]
Benefit marine areas in general[d]	17.64	15.65	16.15	.89, .88, .89	.95, .96, .95
Protect diversity of marine species[e]	17.46	15.87	16.27	.87, .89, .89	.95, .95, .95
Increase marine species populations[f]	16.82	15.38	15.74	.77, .83, .80	.95, .96, .96
Allow depleted marine species populations to recover[g]	18.11	16.73	17.08	.81, .84, .83	.95, .96, .96
Improve the economy	12.82	12.37	12.48	.61, .73, .67	.96, .96, .96
Increase tourism	12.67	12.51	12.55	.59, .75, .66	.96, .96, .96
Benefit local communities	14.02	13.42	13.57	.69, .74, .71	.96, .96, .96
Improve scientific understanding of marine areas[h]	18.07	16.06	16.56	.89, .85, .87	.95, .96, .95
Allow scientists to monitor marine areas over time[i]	18.24	16.50	16.93	.86, .85, .86	.95, .96, .95
Improve understanding of marine areas[j]	18.39	16.67	17.10	.89, .88, .88	.95, .95, .95
Improve ability to manage marine areas[k]	14.86	13.46	13.81	.84, .80, .83	.95, .96, .96

[a]Computed responses by multiplying each belief by its affective evaluation: 1 = strongly disagree and very bad (initially 1 on separate scales) to 25 = strongly agree and very good (initially 5 on separate scales). Scale: 16.33/25.00 (communities of place), 14.94/25.00 (rest of coast), 15.28/25.00 (total), $t = 3.37$, $p = .001$, $r_{pb} = .14$.
[b]First numbers: communities of place, second: rest of coast, third: total.
[c]Cronbach alphas = .96, .96, .96.
[d]$t = 3.87$, $p < .001$, $r_{pb} = .16$.
[e]$t = 3.25$, $p = .001$, $r_{pb} = .14$.
[f]$t = 3.12$, $p = .002$, $r_{pb} = .13$.
[g]$t = 2.98$, $p = .003$, $r_{pb} = .13$.
[h]$t = 3.97$, $p < .001$, $r_{pb} = .17$.
[i]$t = 3.48$, $p < .001$, $r_{pb} = .15$.
[j]$t = 3.38$, $p = .001$, $r_{pb} = .14$.
[k]$t = 2.76$, $p = .006$, $r_{pb} = .12$.

Table 5. Behavioral intentions associated with MRs.

	Mean[a]				
	Communities of place	Rest of coast	Total	Factor loadings[b]	Alpha if deleted[b,c]
Voting index[d]	2.27	1.01	1.32	.77,.89,.84	.91,.92,.92
I intend to support having MRs in Oregon[e]	3.80	3.31	3.43	.89,.94,.92	.77,.78,.78
I am against establishing MRs in Oregon[f]	3.94	3.54	3.64	.81,.85,.84	.79,.81,.81
I would be in favor of implementing MRs in Oregon[g]	3.81	3.38	3.49	.94,.93,.94	.75,.78,.78

[a]Difference in scale, $t = 5.05$, $p < .001$, $r_{pb} = .21$.
[b]First numbers: communities of place, second: rest of coast, third: total.
[c]Cronbach alphas = .92, .94, .93.
[d]Computed scale by multiplying two questions (−1 = vote against establishing MRs in Oregon and +1 = vote for establishing MRs in Oregon × 1 = not certain to 4 = extremely certain): −4 = extremely certain vote against MRs to +4 = extremely certain vote for MRs, $t = 4.97$, $p < .001$, $r_{pb} = .21$.
[e]1 = Strongly disagree to 5 = strongly agree, $t = 4.89$, $p < .001$, $r_{pb} = .21$.
[f]Reverse coded: 1 = strongly agree to 5 = strongly disagree, $t = 3.83$, $p < .001$, $r_{pb} = .16$.
[g]1 = Strongly disagree to 5 = strongly agree, $t = 4.21$, $p < .001$, $r_{pb} = .18$.

Percentages, means, independent-samples t-tests, and point-biserial correlation (r_{pb}) effect sizes described responses to the variables and tested for differences between communities of place and the rest of the coast. Cronbach alpha coefficients tested reliability of multiple-item indices measuring each latent concept (similarity, trust, attitudes toward advantages, attitudes toward disadvantages, intentions). SPSS 24 was used for these analyses. Confirmatory factor analysis (CFA) examined if variables measuring each concept demonstrated construct validity. Structural equation modeling (SEM) tested the hypotheses and predictive validity of Figure 1. Also examined was whether attitudes toward advantages and disadvantages mediated (full or partial) relationships between trust and intentions (Vaske 2008). In addition, a multigroup SEM examined whether proximity to MRs (communities of place, rest of coast) moderated (i.e., interaction) relationships among factors. EQS 6.1 and its Robust estimation procedure to correct for multivariate nonnormality were used for these analyses, and model evaluation was based on the comparative fit index (CFI), nonnormed fit index (NNFI), root mean square error of approximation (RMSEA), and χ^2/df. CFI and NNFI ≥ .90, RMSEA ≤ .08, and χ^2/df of 2:1 to 5:1 generally suggest acceptable fit (Byrne 2006).

Results

Descriptive Findings

On average, residents slightly agreed they shared values, opinions, and thoughts similar to ODFW (Table 1). Agreement with all variables measuring perceived similarity was higher in communities of place than for the rest of the coast, but only two items statistically differed (shared similar goals, thinks in similar ways), $t = 2.29$–2.37, $p = .018$–$.022$. When aggregated into an index, similarity was higher for communities of place ($M = 3.35$) than for the rest of the coast ($M = 3.18$), $t = 2.14$, $p = .032$. Effect sizes, however, were $r_{pb} = .09$–$.10$ and guidelines from Cohen (1988) and Vaske (2008) suggest the strength of these differences is small or minimal, respectively. Similarly, residents slightly to moderately trusted ODFW (Table 2). Agreement with each item measuring trust and the combined index was slightly higher for communities of place than for the rest of the coast, but these differences were not statistically significant.

For attitudes toward potential disadvantages of MRs, residents were most concerned about them being costly to manage ($M = 14.17$) and least concerned with them causing species overpopulation ($M = 10.93$; Table 3). Compared to communities of place, residents along the rest of the coast were more likely to agree that four of the five disadvantages may occur and are bad, $t = 2.50$–2.72, $p = .007$–$.013$. When aggregated into an index, concerns were higher for the rest of the coast ($M = 12.53$) than for communities of place ($M = 11.58$), $t = 2.65$, $p = .008$. Effect sizes ($r_{pb} = .11$–$.12$), however, showed these differences were small (Cohen 1988) or minimal (Vaske 2008).

For attitudes toward potential advantages, residents had the most favorable evaluations of the potential for MRs to improve understanding of marine areas ($M = 17.10$) and allow species recovery ($M = 17.08$; Table 4). Least favorable was the potential for MRs to improve the economy ($M = 12.48$). For each advantage, communities of place had more favorable attitudes than the rest of the coast, and this pattern was significant for the combined index (communities of place $M = 16.33$, rest of coast $M = 14.94$) and 8 of 11 items, $t = 2.76$–3.97, $p = .006$ to $<.001$. Effect sizes ($r_{pb} = .12$–$.17$) were small to medium (Cohen 1988) or minimal to typical (Vaske 2008).

Most residents supported and would vote for MRs in Oregon (Table 5). In total, 69% of respondents would vote for MRs. Responses to all variables and the index measuring intentions showed that communities of place would be more likely than the rest of the coast to support and vote for MRs, $t = 3.83$–5.05, $p < .001$. For example, 82% of residents in the communities of place and 65% along the rest of the coast would vote for MRs. Effect sizes were $r_{pb} = .16$–$.21$, implying these differences were small to medium (Cohen 1988) or minimal to typical (Vaske 2008).

Measurement Models

CFAs for each sample (communities of place, rest of coast, total) demonstrated that the model fit the data.[3] Tables 1–5 show that the factor loadings were significant ($p < .05$) and ranges were .84–.95 for variables measuring similarity, .79–.92 for trust, .40–.87 for attitudes toward disadvantages, .59–.89 for attitudes toward advantages, and .77–.94 for intentions. Factor loadings should be ≥.40 (Byrne 2006). Cronbach alpha reliabilities indicated high internal consistency, as they were .95 for similarity, .96–.97 for trust, .80–.83 for attitudes toward disadvantages, .96 for attitudes toward advantages, and .92–.94 for intentions. Deletion of any variable from its respective concept did not improve reliability. Alphas ≥ .65 suggest that variables are measuring the same concept and justify combining them in an index (Vaske 2008).

Structural Models

As predicted by H_1, residents with stronger attitudes toward potential advantages of MRs were more likely to vote in support of these reserves (Figure 2). For each sample (communities of place, rest of coast, total), there was a positive relationship between attitudes toward advantages and voting in support of MRs. Standardized coefficients were $\beta = .67$–$.78$ and statistically significant ($p < .05$). There was also a negative relationship between this support and attitudes toward disadvantages of MRs for each sample ($\beta = -.31$

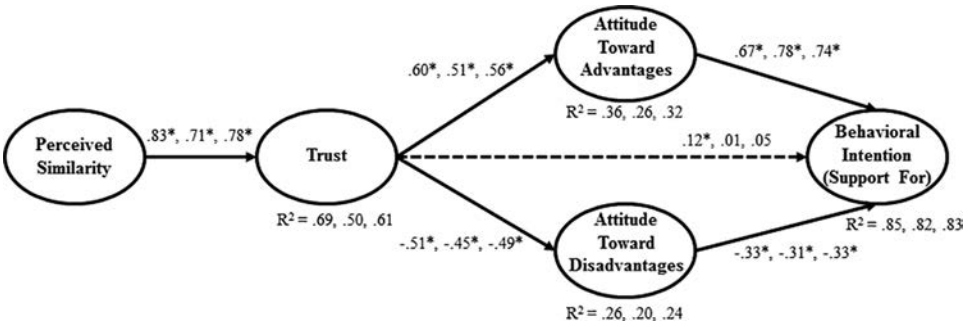

Figure 2. Final SEM results. First numbers: communities of place, second: rest of coast, third: total. Paths are standardized coefficients (ß). Significant paths (*$p < .05$) for all samples are solid arrows. Significant paths (*$p < .05$) for only one sample are dashed. R^2 = variance explained.

to −.33, $p < .05$). These results support H_2; residents who agreed with disadvantages of MRs were less likely to vote in support.

Consistent with H_3, there was a significant positive relationship between trust and attitudes toward potential advantages of MRs for each sample ($\beta = .51$–.60, $p < .05$). Residents with higher trust in the agency had stronger attitudes toward advantages of MRs. As predicted by H_4, there was a significant negative relationship between trust and attitudes toward potential disadvantages of MRs for each sample ($\beta = -.45$ to $-.51$, $p < .05$). Residents with lower trust had stronger attitudes toward disadvantages of MRs.

H_5 predicted that residents with higher trust in the agency would be more likely to vote in support of MRs. Direct effects models with attitudes toward advantages and disadvantages removed showed significant positive relationships between trust and intentions for each sample, supporting H_5 ($\beta = .49$–.64, $p < .05$). With attitudes included back in the model, however, these relationships were no longer significant for the rest of the coast ($\beta = .01$, $p > .05$) and total sample ($\beta = .05$, $p > .05$), suggesting that attitudes fully mediated the relationship between trust and intentions. For communities of place, the positive relationship between trust and intentions remained statistically significant, but the effect decreased ($\beta = .12$, $p < .05$), suggesting partial mediation. Chi-square difference tests supported these results by showing the mediation models had significantly better fit than the direct effects models, $\Delta\chi^2 = 314.03$–749.08, df = 4, $p < .001$.

As predicted by H_6, a positive relationship between similarity and trust was observed for the communities of place, rest of the coast, and total sample ($\beta = .71$–.83, $p < .05$). Residents who perceived themselves to be similar to ODFW were more likely to trust this agency. Overall, 50–69% of the variance in trust was explained by similarity. This trust explained 26–36% of the variance in attitudes toward advantages of MRs, and 20–26% in attitudes toward disadvantages. Trust and attitudes toward both advantages and disadvantages explained 82–85% of the variance in intentions to vote for MRs. The final structural model as shown in Figure 2 fit the data for the communities of place (CFI = .91, NNFI = .90, RMSEA = .08, χ^2/df = 2.81), rest of the coast (CFI = .91, NNFI = .91, RMSEA = .08, χ^2/df = 2.21), and total sample (CFI = .92, NNFI = .91, RMSEA = .07, χ^2/df = 3.59).

A multigroup SEM determined whether these relationships differed between communities of place and the rest of the coast (moderation, interaction). Although the positive

relationship between trust and intentions (H_5) was present for communities of place, but not the rest of the coast, all other paths were significant for each sample. In addition, tests for invariance of factor loadings and structural paths were not significant (Lagrange Multiplier tests for constraints versus releasing constraints = .448–3.61, $p = .058–.503$). The chi-square difference test also indicated that the models did not differ significantly between communities of place and the rest of the coast, $\Delta\chi^2 = 11.26$, df = 6, $p = .081$. Moderation based on proximity to the MRs, therefore, was not present.

Discussion

These findings have implications for both management and research. From a management perspective, the majority of residents shared views similar to ODFW and trusted the agency, and there was a positive relationship between similarity and trust. Similarity, trust, and the relationship between these concepts were also greater for nearby communities of place ($\beta = .83$, $R^2 = .69$) than for the rest of the coast ($\beta = .71$, $R^2 = .50$; Figure 2). These results are important because local communities are more dependent on nearby natural resources and vulnerable to their management, making the importance of trust and impacts of distrust more amplified in local contexts (Davenport et al. 2007). These findings may be a result of increased presence and efforts of ODFW to reach out to the most proximate communities and engage them in the MR creation process. Building and maintaining trust are challenges for agencies, so management should be tailored to reflect constituent values and opinions whenever practical and feasible (Winter, Palucki, and Burkhardt 1999; Needham and Vaske 2008). If these views are not reflected in management, reasons for inconsistencies should be shared to prevent distrust (Cvetkovich and Winter 2003). The public expects involvement in natural resource management decisions, and if ignored may resort to appeals, court cases, and ballot initiatives (Manfredo, Teel, and Bright 2004; Needham, Haider, and Rollins 2016).

Most residents also had positive attitudes toward potential advantages of MRs and would vote in support of the reserves, with more support and favorable attitudes among communities nearest these areas. This is important because these communities are likely to be most affected by the MRs (Perry et al. 2014). Residents along the rest of the coast were also supportive and represent a constituency that could be impacted, so managers should not focus efforts solely on building capacity in nearby communities; they should also address other populations (Canessa and Dearden 2016). Despite this support, there was less agreement with potential disadvantages associated with MRs, such as reduced fishing and increased management costs. These disadvantages are important because there are always costs associated with placing sites under protected area designation. When educating about MRs, managers should provide a balanced perspective emphasizing both advantages and challenges likely to be encountered.

Attitudes toward potential advantages and disadvantages of MRs were related to trust in the managing agency. The positive relationship between trust and attitudes toward advantages of MRs suggests that when people trust the agency, they perceive benefits associated with an issue for which the agency is responsible. To advance their agendas, therefore, agencies should seek trustworthy relationships with residents (Davenport et al. 2007). The negative relationship between trust and attitudes toward disadvantages of MRs suggests that those with less trust may recognize disadvantages to a greater degree and

not trust the agency to mitigate these issues. Conversely, people with high trust may not recognize these disadvantages or may be under the assumption that the agency will address them and ensure positive benefits. Both viewpoints suggest that communication about disadvantages of MRs and the role of the agency in mitigating concerns could influence attitudes and lessen the potential for stakeholder conflict and ineffective management after reserve establishment.

Connections between attitudes and behavioral intentions are also important. Intentions to vote in support of MRs were related to attitudes toward potential advantages and disadvantages of the reserves. Residents with negative attitudes (agree with disadvantages) were less supportive of MRs, whereas those with positive attitudes (agree with advantages) were more supportive. This is important because protected area success is often dependent on public support of the area's protection designation and management objectives (Canessa and Dearden 2016).

From a research perspective, results supported other studies examining reliability and validity of these concepts. Consistent with several studies, for example, results showed that trust can be conceptualized and measured as a singular unidimensional concept (Siegrist, Cvetkovich, and Roth 2000; Cvetkovich and Winter 2003; Vaske, Absher, and Bright 2007; Needham and Vaske 2008; Lijeblad, Borrie, and Watson 2009). Attitudes toward the MRs were divided into advantages and disadvantages reflecting how MRs could impact other people or society as a whole and also elements of the ecosystem. The CFA and reliability results supported this approach, and by parsing out dimensions of attitudes, patterns were found between these and other concepts. Not examined, however, were resident attitudes toward potential impacts of MRs on themselves. Some researchers have suggested a tripartite approach (self, others, ecosystem) for measuring attitudes and related concepts (Stern and Dietz 1994; Manfredo, Teel, and Bright 2004). These attitudes, including those associated with advantages and disadvantages of MRs, should be investigated in future research because an individual may hold varying attitudes about an issue (Fishbein and Manfredo 1992).

Consistent with previous studies, results also showed that the majority of residents, especially those in communities near MRs, favored these reserves (Cocklin, Craw, and McAuley 1998; Mangi and Austen 2008; Thomassin et al. 2010). This is not always the case, as some studies have reported local opposition to MRs (Fiallo and Jacobson 1995; Webb, Maliao, and Siar 2004). In addition, although some studies have found low agency trust in communities adjacent to protected areas (Carroll and Hendrix 1992; Krannich and Smith 1998), results here were consistent with other studies showing higher trust (Davenport et al. 2007). Given these mixed results among studies investigating attitudes, intentions, and trust associated with protected areas, it is apparent that these issues are context dependent and should be investigated on a site-specific basis.

Relationships among concepts were similar to previous research and consistent with theory. Research on trust, for example, proposes that affinitive or social aspects (e.g., perceived similarity, connectedness) influence trust (Siegrist, Cvetkovich, and Roth 2000; Stern and Coleman 2015). Results supported this relationship by showing positive relationships between similarity and trust, explaining 50–69% of the variance in trust. Other aspects not measured here that are thought to be related to trust, such as predispositions, rational expectations, and interpersonal relationships, could explain the remaining variance (Stern and Coleman 2015). Further research is needed to examine various dimensions and predictors of trust in the context of MPAs and MRs.

Theories such as the cognitive hierarchy (Fulton, Manfredo, and Lipscomb 1996) and the theory of reasoned action (Fishbein and Ajzen 2010) propose that behavioral intentions are influenced by attitudes. Results showed significant relationships between attitudes and intentions that explained a large proportion (82–85%) of the variance in these intentions, which is identical to previous research (Fishbein and Manfredo 1992; Pate et al. 1996; Manfredo, Teel, and Bright 2004). Consistent with past studies, findings also showed that trust directly predicted both attitudes and behavioral intentions (Winter, Palucki, and Burkhardt 1999, Winter, Vogt, and McCaffrey 2004; Cvetkovich and Winter 2003; Dietz, Dan, and Shwom 2007; Vaske, Absher, and Bright 2007; Wynveen and Sutton 2015). Stern (2008; 2010), for example, found that affinitive trust strongly predicted attitudes regarding park management, as well as support and opposition toward parks. Results here were similar, as trust was directly related to attitudes and behavioral intentions, explaining 20–36% of attitudes. Given that 64–80% of attitudes remained unexplained, there are clearly additional concepts that influence attitudes (e.g., values, value orientations; Manfredo, Teel, and Bright 2004), but were not examined here. In addition, this result suggests that some people develop trust for an agency, but may not favor its decisions and potential consequences of these actions (Stern and Coleman 2015). Additional research on these issues is warranted.

Most research has examined direct relationships between either (a) trust and attitudes, or (b) trust and behavioral intentions (e.g., Vaske, Absher, and Bright 2007; Stern 2008; 2010; Wynveen and Sutton 2015). This study, however, builds on this body of literature by showing that when all of these concepts (trust, attitudes, intentions) were included in the model, the direct relationship between trust and intentions mostly disappeared, with attitudes either fully mediating (rest of the coast, total sample) or partially mediating (communities of place) this relationship. Further research is needed to confirm these relationships among trust, attitudes, and behavioral intentions, and to examine if findings generalize to other managed landscapes in general and protected areas in particular. Regardless, it is clear from this and other studies (Stern 2008; 2010; Wynveen and Sutton 2015) that trust is an important factor influencing attitudes and behavioral intentions toward protected areas.

Notes

1. Designations have different protection levels and conservation strategies from "multiple use," allowing fishing in some areas and protection in others, to "no-take" MRs prohibiting extractive uses. MPAs generally have less stringent restrictions than MRs and are "areas of the ocean designated to enhance conservation of marine resources" (Lubchenco et al. 2003, S3) where prohibitions and allowances exist on a case-by-case basis. This article uses MPA as a broad term referring to many protected area types, and MR for areas with restrictions on extraction.
2. Vaske (2008) cautioned that multiplication causes issues with both the amount of missing data and number of respondents assigned to a valid zero (0) value when an initial value of 0 is multiplied by an initial missing data value because a value of 0 is returned for the newly computed scale instead of being assigned as missing. This issue was avoided here because no variables had a value of 0. "Very bad" to "very good" and "strongly disagree" to "strongly agree" scales were coded 1 to 5 (multiplied = 1 to 25), "not certain" to "extremely certain" was coded 1 to 4, and "vote against" and "vote for" were coded −1 and +1 (dichotomous; multiplied = −4 to +4 with no 0 value).
3. Principal components exploratory factor analysis (EFA) with varimax rotation of all variables produced separate factors reflecting concepts basically identical to the CFA, and all loadings were

≥.40. In addition, a single EFA without rotation with the number of factors fixed to one showed the factor explained less than 50% of the variance. These approaches coupled with the CFA findings represent Harman single factor tests (Podsakoff et al. 2003) and suggest that common method variance or bias was generally absent.

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References

Aipanjiguly, S., S. Jacobson, and R. Flamm. 2003. Conserving manatees: Knowledge, attitudes, and intentions of boaters in Tampa Bay, Florida. *Conservation Biology* 17:1098–1105. doi:10.1046/j.1523-1739.2003.01452.x

Byrne, B. 2006. *Structural equation modeling with EQS*. Mahwah, NJ: Lawrence Erlbaum Associates.

Canessa, R., and P. Dearden. 2016. Marine protected areas. In *Parks and protected areas in Canada: Planning and management*, ed. P. Dearden R. Rollins and M. Needham 321–54. Don Mills, ON, Canada: Oxford University Press.

Carroll, M., and W. Hendrix. 1992. Federally protected rivers: The need for effective local involvement. *Journal of the American Planning Association* 58:346–52. doi:10.1080/01944369208975813

Cocklin, C., M. Craw, and I. McAuley. 1998. Marine reserves in New Zealand: Use rights, public attitudes, and social impacts. *Coastal Management* 26:213–31. doi:10.1080/08920759809362353

Cohen, J. 1988. *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Cvetkovich, G., and P. Winter. 2003. Trust and social representations of the management of threatened and endangered species. *Environment and Behavior* 35:286–307. doi:10.1177/0013916502250139

Davenport, M., J. Leahy, D. Anderson, and P. Jakes. 2007. Building trust in natural resource management within local communities: A case study of the Midewin National Tallgrass Prairie. *Environmental Management* 39:353–68. doi:10.1007/s00267-006-0016-1

Dietz, T., A. Dan, and R. Shwom. 2007. Support for climate change policy: Social psychological and social structural influences. *Rural Sociology* 72:185–214. doi:10.1526/003601107781170026

Dimitrakopoulos, P., N. Jones, T. Iosifides, I. Florokapi, O. Lasda, F. Paliouras, and K. Evangelinos. 2010. Local attitudes on protected areas from three Natura 2000 wetland sites in Greece. *Journal of Environmental Management* 91:1847–54. doi:10.1016/j.jenvman.2010.04.010

Earle, T., and G. Cvetkovich. 1995. *Social trust: Toward a cosmopolitan society*. Westport, CT: Praeger.

Fiallo, E., and S. Jacobson. 1995. Local communities and protected areas: Attitudes of rural residents towards conservation and Machalilla National Park, Ecuador. *Environmental Conservation* 22:241–49. doi:10.1017/s037689290001064x

Fishbein, M., and I. Ajzen. 2010. *Predicting and changing behavior: The reasoned action approach*. New York, NY: Psychology Press.

Fishbein, M., and M. Manfredo. 1992. A theory of behavior change. In *Influencing human behavior: Theory and applications in recreation, tourism, and natural resource applications*, ed. M. Manfredo 29–50. Champaign, IL: Sagamore.

Fulton, D., M. Manfredo, and J. Lipscomb. 1996. Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife* 1:24–47. doi:10.1080/10871209609359060

Gray, D., R. Canessa, R. Rollins, C. Keller, and P. Dearden. 2010. Incorporating recreational users into marine protected area planning: A study of recreational boating in British Columbia, Canada. *Environmental Management* 46:167–80. doi:10.1007/s00267-010-9479-1

Hardin, R. 2002. *Trust and trustworthiness*. New York, NY: Russell Sage Foundation.

Heck, N., and P. Dearden. 2012. Local expectations for future marine protected area performance: A case study of the proposed national marine conservation area in the Southern Strait of Georgia, Canada. *Coastal Management* 40:577–93. doi:10.1080/08920753.2012.727728

Heck, N., P. Dearden, and A. McDonald. 2011. Stakeholders' expectations towards a proposed marine protected area: A multi-criteria analysis of MPA performance criteria. *Ocean and Coastal Management* 54:687–95. doi:10.1016/j.ocecoaman.2011.07.003

Himes, A. 2007. Performance indicators in MPA management: Using questionnaires to analyze stakeholder preferences. *Ocean and Coastal Management* 50:329–51. doi:10.1016/j.ocecoaman.2006.09.005

Jim, C., and S. Xu. 2002. Stifled stakeholders and subdued participation: Interpreting local responses toward Shimentai Nature Reserve in South China. *Environmental Management* 30:327–41. doi:10.1007/s00267-002-2623-9

Johnson, B. 1999. Exploring dimensionality in the origins of hazard-related trust. *Journal of Risk Research* 2:325–54. doi:10.1080/136698799376763

Krannich, R., and M. Smith. 1998. Local perceptions of public lands natural resource management in the rural West: Toward improved understanding of the "Revolt in the West." *Society and Natural Resources* 11:677–95. doi:10.1080/08941929809381111

Lijeblad, A., W. Borrie, and A. Watson. 2009. Determinants of trust for public lands: Fire and fuels management on the Bitterroot National Forest. *Environmental Management* 43:571–84. doi:10.1007/s00267-008-9230-3

Lubchenco, J., S. Palumbi, S. Gaines, and S. Andelman. 2003. Plugging a hole in the ocean: The emerging science of marine reserves. *Ecological Applications* 13:3–7. doi:10.1890/1051-0761(2003)013[0003:pahito]2.0.co;2

Manfredo, M., T. Teel, and A. Bright. 2004. Applications of the concepts of values and attitudes in human dimensions of natural resource research. In *Society and natural resources: A summary of knowledge*, ed. M. Manfredo J. Vaske B. Bruyere D. Field and P. Brown 271–82. Jefferson City, MO: Modern Litho.

Mangi, S., and M. Austen. 2008. Perceptions of stakeholders towards objectives and zoning of marine protected areas in southern Europe. *Journal for Nature Conservation* 16:271–80. doi:10.1016/j.jnc.2008.09.002

Mishler, W., and R. Rose. 2005. What are the political consequences of trust? A test of cultural and institutional theories in Russia. *Comparative Political Studies* 38:1050–78. doi:10.1177/0010414005278419

Needham, M., W. Haider, and R. Rollins. 2016. Protected areas and visitors: Theory, planning, and management. In *Parks and protected areas in Canada: Planning and management*, ed. P. Dearden R. Rollins and M. Needham 104–40. Don Mills, ON, Canada: Oxford University Press.

Needham, M., and J. Vaske. 2008. Hunter perceptions of similarity and trust in wildlife agencies and personal risk associated with chronic wasting disease. *Society and Natural Resources* 21:197–214. doi:10.1080/08941920701816336

Pate, J., M. Manfredo, A. Bright, and G. Tischbein. 1996. Coloradans' attitudes toward reintroducing the gray wolf into Colorado. *Wildlife Society Bulletin* 24:421–28.

Perry, E., M. Needham, L. Cramer, and R. Rosenberger. 2014. Coastal resident knowledge of new marine reserves in Oregon: The impact of proximity and attachment. *Ocean and Coastal Management* 95:107–16. doi:10.1016/j.ocecoaman.2014.04.011

Pita, C., G. Pierce, I. Theodossiou, and K. Macpherson. 2011. An overview of commercial fishers' attitudes towards marine protected areas. *Hydrobiologia* 670:289–306. doi:10.1007/s10750-011-0665-9

Podsakoff, P., S. MacKenzie, J. Lee, and N. Podsakoff. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88:879–903. doi:10.1037/0021-9010.88.5.879

Poortinga, W., and N. Pidgeon. 2003. Exploring the dimensionality of trust in risk regulation. *Risk Analysis* 23:961–72. doi:10.1111/1539-6924.00373

Rosendo, S., K. Brown, A. Joubert, N. Jiddawi, and M. Mechisso. 2011. A clash of values and approaches: A case study of marine protected area planning in Mozambique. *Ocean and Coastal Management* 54:55–65. doi:10.1016/j.ocecoaman.2010.10.009

Rousseau, D., S. Sitkin, R. Burt, and C. Camerer. 1998. Not so different after all: A cross-discipline view of trust. *Academy of Management Review* 23:393–404. doi:10.5465/amr.1998.926617

Salz, R., and D. Loomis. 2004. Saltwater anglers' attitudes towards marine protected areas. *Fisheries* 29:10–17. doi:10.1577/1548-8446(2004)29[10:saatmp]2.0.co;2

Siegrist, M., G. Cvetkovich, and C. Roth. 2000. Salient value similarity, social trust, and risk/benefit perception. *Risk Analysis* 20:353–62. doi:10.1111/0272-4332.203034

Smith, J., J. Leahy, D. Anderson, and M. Davenport. 2013. Community/agency trust and public involvement in resource planning. *Society & Natural Resources* 26:452–71. doi:10.1080/08941920.2012.678465

Stern, M. 2008. The power of trust: Toward a theory of local opposition to neighboring protected areas. *Society & Natural Resources* 21:859–75. doi:10.1080/08941920801973763

Stern, M. 2010. Payoffs versus process: Expanding the paradigm for park/people studies beyond economic rationality. *Journal of Sustainable Forestry* 29:174–201. doi:10.1080/10549810903547809

Stern, M., and K. Coleman. 2015. The multidimensionality of trust: Applications in collaborative natural resource management. *Society & Natural Resources* 28:117–32. doi:10.1080/08941920.2014.945062

Stern, P., and T. Dietz. 1994. The value basis of environmental concern. *Journal of Social Issues* 50:65–84. doi:10.1111/j.1540-4560.1994.tb02420.x

Thomassin, A., C. White, S. Stead, and G. David. 2010. Social acceptability of a marine protected area: The case of Reunion Island. *Ocean and Coastal Management* 53:169–79. doi:10.1016/j.ocecoaman.2010.01.008

van Riper, C., G. Kyle, S. Sutton, J. Yoon, and R. Tobin. 2013. Australian residents' attitudes and pro-environmental behaviors toward climate change impacts on the Great Barrier Reef. *Journal of Environmental Planning and Management* 56:494–511. doi:10.1080/09640568.2012.688650

Vaske, J. 2008. *Survey research and analysis: Applications in parks, recreation, and human dimensions*. State College, PA: Venture.

Vaske, J., J. Absher, and A. Bright. 2007. Salient value similarity, social trust and attitudes toward wildland fire management strategies. *Human Ecology Review* 14:223–32.

Voyer, M., W. Gladstone, and H. Goodall. 2012. Methods of social assessment in marine protected area planning: Is public participation enough? *Marine Policy* 36:432–39. doi:10.1016/j.marpol.2011.08.002

Webb, E., R. Maliao, and S. Siar. 2004. Using local user perceptions to evaluate outcomes of protected area management in the Sagay marine reserve, Philippines. *Environmental Conservation* 31:138–48. doi:10.1017/s0376892904001377

Winter, G., C. Vogt, and S. McCaffrey. 2004. Examining social trust in fuels management strategies. *Journal of Forestry* 102:8–15.

Winter, P., L. Palucki, and R. Burkhardt. 1999. Anticipated responses to a fee program: The key is trust. *Journal of Leisure Research* 31:207–26.

Wynveen, C., and S. Sutton. 2015. Engaging the public in climate change-related pro-environmental behaviors to protect coral reefs: The role of public trust in the management agency. *Marine Policy* 53:131–40. doi:10.1016/j.marpol.2014.10.030