

1 **Community perceptions link environmental decline to reduced support**
2 **for tourism development in Small Island States: A case study in the Turks**
3 **and Caicos Islands.**

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10

11 **Abstract**

12 Increasing tourism and population growth, exacerbated by migration, are placing pressure on the health and
13 resilience of natural resources worldwide. This is evident in complex tropical coastal systems, particularly
14 Small Island and Small Island Developing States (SIDS), where limited resources, fragile environments and
15 climate change risk result in sustainable development challenges. The relationship between residents'
16 perceived impacts of tourism, marine resource health, and support for future development was investigated
17 through face-to-face semi-structured interviews with 57 stakeholders, including heads of households, fishers
18 and those working in the tourism sector, on the Island of Grand Turk (Turks and Caicos Islands). Perceptions
19 of the economic, social and environmental impact of tourism were not significantly associated with residents'
20 socio-demographics. However, Turks and Caicos nationals were significantly more likely to support future
21 tourism development than non-nationals. Residents that linked tourism with environmental degradation
22 showed significantly reduced support for tourism development. Proposed developments which promote
23 overnight tourism were viewed most positively by respondents highlighting a need for strategic growth of the
24 tourism sector to consider income generation outside of the cruise terminal. Results highlight the need for
25 more balanced consideration of the effects of tourism on socio-economic factors along with environmental
26 considerations in communities highly depended on marine resources. Thus, context-specific understanding of

27 residents' perceptions and how this might influence support for future development is vital to building policies
28 that are reflective of local priorities.

29

30 Keywords: Community perceptions, marine degradation, tourism, management, coastal ecosystems,
31 sustainable development.

32 **1. Introduction**

33 Tourism is one of the largest and fastest-growing global economic sectors and an integral component of
34 economic development strategies for many countries [1], especially small islands with limited alternatives to
35 generate economic prosperity. Coastal zones have been at the forefront of development, with an increasing
36 number of developing countries in the tropics focusing on tourism to diversify the economy [2]. Increasing
37 pressure placed on natural resources presents management challenges for complex coastal socio-economic
38 systems that depend on the health of natural resources for food and income. This is particularly evident in
39 Small Islands and Small Island Developing States (SIDS) which face several challenges and vulnerabilities
40 including fragile environments, climate change risk, low community engagement with sustainable natural
41 resource management and economic leakage [3].

42 While most marine conservation debates recognise the significance of understanding important interactions
43 between society and environmental resources [4, 5], marine management initiatives and research often do not
44 explore these interactions sufficiently [6] particularly in the context of sustainable coastal tourism
45 development. Over the last decade there has been a steady increase in the number of studies linking socio-
46 economic characteristics with attitudes and perceptions of people towards health and use of marine resources
47 [6-8]. However, the complexity of human perceptions, and how they influence attitudes and behaviour, leads
48 to many further questions regarding support for marine management measures [6]. Tourism can be an
49 important source of income for local communities so understanding the views of locals dependent on this
50 sector can help balance coastal tourism with conservation goals.

51 Integrating tourism with national sustainable development plans is challenging in Small Island states where
52 development can contribute to coastal zone degradation and loss of the fragile ecosystems upon which tourism
53 depends. Development and associated growth in population greatly influences both physical and socio-
54 economic characteristics in host countries [9]. Perceptions and attitudes of local communities towards the
55 impacts of tourism are an important planning and policy consideration for the successful development and
56 operation of future tourism programmes and projects [10]. This is especially important in coastal areas where
57 population growth is exerting pressure on natural resources and thus can be compounded by further pressure
58 from rising numbers of visitors through expanding tourism. A considerable body of research has been
59 undertaken into resident perceptions of tourism on economic, environmental and sociocultural impacts [see

60 section 2]. Perceptions of existing tourism impact have potential implications for willingness to engage in
61 decision-making [11] and support for tourism development [12] and local tourism policies [13], thus
62 understanding community perceptions can help tailor management measures to specific local contexts.

63 The overall aim of this study was to investigate and expand the understanding of how the perceptions of
64 resident's influence support for coastal tourism development in Small Island States and identify the perceived
65 impact of existing tourism from a social, environmental and economic perspective. Tourism may be
66 considered more important to Caribbean Islands than to any other region in the world, accounting for 14.8%
67 of Gross Domestic Product (GDP) in 2015 [14]. Unlike other Caribbean islands, tourism in the Turks and
68 Caicos is still emerging, particularly on the political capital of Grand Turk, making the study timely to assess
69 resident perceptions. Based on a case study of Grand Turk this study addressed three research questions: (1)
70 What are residents' perceptions of local tourism in terms of social, economic and environmental impacts? (2)
71 Do socio-demographic characteristics influence perceptions of existing tourism or support for tourism
72 development? (3) Do perceptions of existing tourism influence support for future tourism development?
73 Answers to these questions can help inform strategic planning for tourism which can better reconcile
74 balancing environmental impacts from tourism with economic prosperity and social benefits.

75 **2. Literature review**

76 **2.1. Residents perceptions of tourism**

77 The perceptions of residents' in established and emerging tourist destinations have long been the focus of
78 academic scrutiny due to the importance of community support for successful and sustainable development.
79 Numerous studies have investigated resident perceptions of, or attitude towards, the economic [15 -17], socio-
80 cultural [9, 13, 18] and environmental impacts of tourism [9, 13, 17]. Initial work revealed a descriptive
81 approach [19] focusing on perceived tourism impact, while more recent studies test variables (e.g. age,
82 occupancy, length of residency) that may influence or predict perceptions of and support for tourism
83 development [20, 21].

84 Despite this progress, much of this research is restricted to case studies in the developed world [9] with
85 numerous examples from Australia [22, 17] and Europe [23 - 25]. In addition, most studies employ
86 quantitative interview protocols which draw simplistic and theoretically weak findings [26]. Thus, there is a

87 need for qualitative studies which have the potential to explain why residents perceive and respond to tourism
88 thus providing the context for inferences [9, 27].

89 Due to its potential for economic prosperity governments normally have plans to expand the tourism sector
90 and many researchers have been interested in the economic aspects of tourism [9]. Tourism has huge potential
91 for internationalisation agendas due to its increasing economic significance to generating national wealth,
92 particularly in less developed countries and SIDS [20]. To a great extent, however, the scale, scope and
93 significance of tourism growth does not involve engagement from locals in deciding what type of tourism they
94 would prefer, hence a surprising lack of attention is paid to communities from small islands and
95 underdeveloped countries [28] where tourism can contribute greatly to the national GDP. Economic impacts
96 of tourism are predominantly viewed positively across the published literature [16, 29] due to job provision
97 and other economic opportunity for residents [18]. However, it is believed only a minority of the host
98 population directly benefits [15].

99 In relation to the socio-cultural impacts of tourism development, studies have noted positive impacts on
100 residents' quality of life [9]. However, research in developed countries has shown that as the level of tourism
101 in a community increased, residents' perceptions of tourism impacts became less positive [9, 30, 31]. Studies
102 have also alluded to the negative social impacts, such as conflict over land use between local communities and
103 tourism developers [15, 32] and increased crime [16].

104 Environmentally, ecosystem damage due to increased demand on natural resources and overexploitation is
105 considered a huge cost associated with tourism development [21]. Traffic congestion, pollution and increases
106 in litter were also considered to be negative impacts associated with tourism [33]. Conversely, a number of
107 studies found residents perceived tourism as having a positive impact on the environment [18, 34] due to
108 preservation and protection of natural beauty.

109 **2.2. Variables influencing residents' perceptions of tourism development**

110 Identifying factors that influence perceptions or attitudes towards tourism has been well studied within the
111 literature in order to explain or predict the responses of residents to tourism [9]. Variables including age,
112 gender and level of education [9, 35] have been found to influence attitudes and support for tourism. Younger

113 [36, 37] and more educated individuals [38] tend to have more positive perceptions about tourism
114 development. However, such associations are inconclusive with studies finding opposing results [35].
115 Economic dependence on the tourism industry has been found to positively influence local perceptions
116 towards tourism with those linked to tourism through employment exhibiting more positive attitudes than
117 those who do not economically depend on the sector [38 - 40]. Residents with strong ties to the community
118 including long-term and native residents have less favourable attitudes towards tourism and are more aware of
119 the negative impacts [41].

120 **3. Research methods**

121 **3.1. Study setting**

122 The Turks and Caicos Islands (herein abbreviated as TCI) is an archipelago of 40 low-lying coral islands in
123 the Atlantic Ocean and considered part of the Caribbean region. The origins of tourism in the TCI date back to
124 the mid-1960s in the wake of the collapse of the solar salt industry [42]. Despite its short history with
125 tourism, the first major resort (Club Med) only opened in 1984, TCI is the fastest-growing destination in the
126 Caribbean [42]. Over the last 30 years tourism has grown quickly, and residents have had to adapt to the rapid
127 social change associated with tourism. However, tourism has proceeded differently across the main inhabited
128 islands with the nation's capital Grand Turk still in the emergent stage of tourism growth, making this
129 fieldwork timely to assess local attitudes from a range of stakeholders.

130 Grand Turk has a tourism-dependent economy relying heavily on the Cruise industry, which has contributed
131 significantly to annual tourist arrivals since 2006. In 2016 the Grand Turk cruise centre welcomed 846,963
132 cruise passengers, a 124% increase on arrivals in 2012 [43] while stay over tourists totalled 386,652 in 2015
133 [43]. In the past 40 years the population of Grand Turk has more than doubled from around 2,000 in 1970 to
134 4,831 in 2012 [44], this growth in population parallels the development of the local tourism industry [44].
135 Migration accounts for around two thirds of the population increase and 'belongers' (synonymous with the
136 term TCI nationals) now only account for 38% of the population on Grand Turk [43].

137 At the time of this study (2015) several tourism developments were proposed for Grand Turk, including a
138 large resort that would double the existing room quota, a world class marina and a captive dolphin cove.

139 **3.2. Data collection**

140 Semi-structured interviews were carried out with targeted stakeholder groups including heads of households,
 141 residents working in the tourism industry and fishers. Interviews were conducted in May and June 2015 and
 142 included five sections: 1) perceptions of marine resource health; 2) perceptions of tourism; 3) awareness and
 143 support for future developments; 4) community relations, and; 5) socio-economic data and basic
 144 demographics. A combination of open-ended and closed questions were used in each section, with some
 145 Likert scale rapid response questions used to ascertain attitudes towards tourism and marine resources.

146 Thirty heads of households were interviewed, representing 7% of the total population, and 23 resource users
 147 from the tourism and/ or fishing sectors (Table 1). A combination of random, snowball, and targeted sampling
 148 methods were applied. All interviews were conducted face-to-face with consent obtained prior to each
 149 interview. Interviews with heads of households were collected via a systematic sampling strategy, targeting
 150 every 14th household, aiming to provide a representative sample of interviewees. Household surveys were
 151 conducted in the community “Back Salina”, as this best encompassed the diversity of the population
 152 represented across Grand Turk. Back Salina was the largest community with approximately 421 households
 153 and a population of 1265 [44]. Direct resource users (those working in the tourism industry and fishermen)
 154 were targeted primarily through snowball and opportunistic sampling.

155 Table 1. Summary of interviewees (n = 57), including stakeholder group and respondent nationality.

Stakeholder group and nationality	No of interviewees
Households	30
Turks and Caicos national	20
Non-national	10
Tourism sector	23
Turks and Caicos national	10
Non-national	13
Fishers	4*
Turks and Caicos national	4

156 *Represents 57% of registered fishermen on Grand Turk (DEMA).

157 3.3. Data analysis

158 Interview transcripts were coded in QSR NVivo 10 and the coding structure was developed iteratively.
 159 Different themes of response were identified for each of the open-ended questions then a more deductive
 160 approach was used to group responses into related themes. A cumulative link model was fitted to the data with
 161 responses to the ordinal variable ‘support for future tourism development’ as the dependent variable with three
 162 ordered response variables:

- 163 1. Yes, in support of tourism development on Grand Turk.
164 2. Unsure, if in support of tourism development on Grand Turk.
165 3. No, not in support of tourism development on Grand Turk.

166 The following independent variables were selected following a critical appraisal of the literature and included
167 in the cumulative link model. Models were constructed using the ordinal package in R statistical software
168 [45].

- 169 1. Age (years)
170 2. Years of formal education (years)
171 3. Nationality (TCI national/ other)
172 4. Occupation (Tourism/ other)
173 5. Length of residency (years)
174 6. Perception of tourism on quality of life (very good/ good/ unsure/ bad/ very bad).
175 7. Perception of tourism on community relationships (very good/ good/ unsure/ bad/ very bad).
176 8. Perceived cause of environmental decline (tourism, fisheries exploitation, climate change).
177 9. Involvement in tourism planning or implementation stages (yes/ no).

178 Responses to variable 8 were given to the open-ended question ‘What is the main cause of environmental
179 decline?’ Data collected was coded and grouped into 3 primary themes of responses (Table 2).

180 **4. Results**

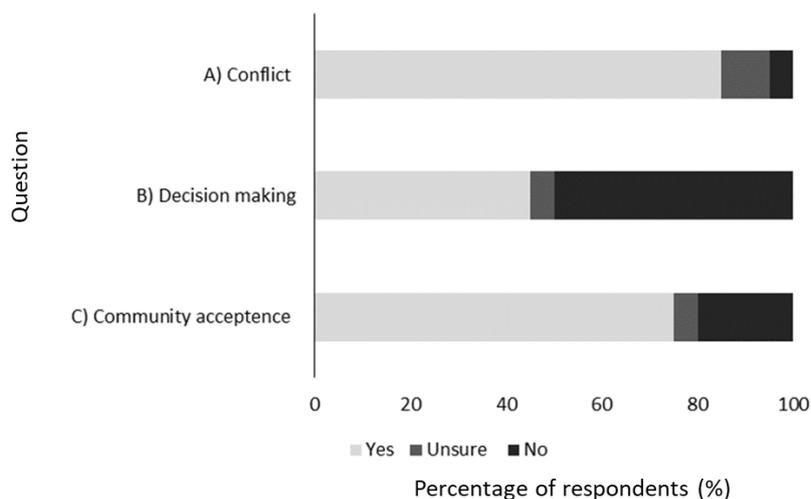
181 **4.1. Perceived impact of existing tourism**

182 **4.1.1. Economic impact**

183 Tourism was considered very positive from an economic perspective with 100% of respondents rating tourism
184 impacts on income as good or very good. Positive economic perceptions were attributed to increased revenue
185 and indirect community benefits such as infrastructure development and jobs. Residents working as tour
186 operators and at the cruise terminal were considered to benefit most from tourism on the island.

187 **4.1.2. Socio-cultural impact**

188 The impact of tourism on quality of life was ranked positively by the majority (88%) of respondents, however,
 189 perceptions of tourism impact on community relationships showed little consensus (52% cited impacts as
 190 good-very good / 48% as bad-very bad). The majority of respondents felt accepted as part of the community
 191 however, approximately 50% felt they were not given the opportunity to participate in decision making
 192 (Figure 1), with many believing they do not have a voice or the right to vote. Conflict between community
 193 groups as a result of tourism development on the island was a recurring theme throughout interviews,
 194 specifically development of the cruise terminal which resulted in land-use conflict. Tension was also evident
 195 in relation to employment where TCI nationals feel job opportunities are not proportional to increasing
 196 population size.



197

198 Figure 1. Distribution of individual response to questions asked relating to community relations, A) Has there
 199 been any conflict between individuals or communities on Grand Turk due to existing tourism or proposed
 200 tourism developments? B) Do you have the opportunity to participate in decision making within the
 201 community? And C) Do you feel accepted as part of this community?

202

4.1.3. Environmental impact

203 Awareness of marine environmental decline was demonstrated throughout interviews. Residents were
 204 particularly concerned about the environmental impact of the islands cruise tourism, and attributed declines in
 205 reef health to excessive cruise visits. A higher proportion of respondents working in tourism (60%) believed
 206 the health of the environment had declined in the last 5 years when compared to household respondents (47%)
 207 and fishers (44%). Three main themes were identified as causes of environmental degradation (Table 2), with
 208 tourism perceived to be the main driver of environmental decline by more than 50% of respondents.

209 Table 2. Perceived drivers of environmental degradation as volunteered by interviewees from household and
 210 resource user surveys (n=57).

Primary themes of response	% of respondents	Sub-category of response (%)
Tourism	52	Excessive boat and cruise activity (46) Disruption by divers (27) Anchors from dive boats dropped onto reef (18) Increase in waste/ litter (9)
Fisheries exploitation	34	Lack of fishing regulations (41) Destructive fishing methods (29) Increase in the number of fishermen (15) Higher number of illegal fishermen (15)
Climate change	14	Coral bleaching (67) Increase in algae due to temperature increase (33)

211

212 4.2. Support for future tourism development

213 The majority (94%) of respondents described at least one proposed tourism development. In open and multiple
 214 response questioning, those working within the tourism sector described significantly more proposed
 215 developments (Kruskal-Wallis $\chi^2=9.7642$, $p<0.05$) than respondents with alternative occupations. Support
 216 for future tourism development was highly dependent on the type of tourism (Table 3). Developments which
 217 promote and accommodate overnight tourists were viewed very positively. Conversely, respondents believe
 218 increases in cruise arrivals will only benefit Carnival cruises and those directly employed by the cruise centre.
 219 Plans to build a dolphinarium, a captive dolphin attraction, also received little support with respondents
 220 highlighting environmental concerns.

221 Table 3. Perceived impact of proposed tourism developments on Grand Turk as volunteered by interviewees
 222 (n= 57). Perceived impact is categorised as either positive, neutral or negative.

Type of tourism development mentioned by respondents	% respondents (n = 57)	Examples of impacts	Perceptions (% responses)		
			+	±	-
Dolphinarium	47	Disrupts ecosystem and dive sites. Against animals in captivity. Jobs.	30	7	63
Hotel	29	Accommodate overnight tourists. Hotels may lead to direct flights.	100	0	0
Marina	45	More overnight tourism. Builds up infrastructure.	65	22	13
Cruise tourism	18	More tourists. No community benefit – only cruise centre benefits.	33	16	51

223

224 Stepwise removal of explanatory variables to refine the ordinal regression resulted in a final model with four
 225 significant explanatory variables:

- 226 1. Nationality (TCI/ other).
 227 2. Perception of tourism on community relationships (very good/ good/ unsure/ bad/ very bad).
 228 3. Involvement in tourism planning or development stages (yes/ no).
 229
 230 4. Cause of environmental decline (Tourism, fisheries exploitation, climate change).
 231

232 The final model predicts support for tourism development to be significantly higher among residents who; 1)
 233 are Turks and Caicos nationals; 2) perceive existing tourism to have had a positive impact on community
 234 relationships, and; 3) are involved in any stage of tourism planning or development. Support for tourism
 235 development is significantly lower among respondents that perceive tourism to be the main cause of
 236 environmental degradation (Table 4).

237 Table 4. Ordinal regression model showing the relationship between residents' (n = 57) perceptions of
 238 existing tourism, socio-demographic variables and support for future tourism development.

Variable	Estimate	Standard error	z value	Pr(> z)
Nationality	-2.131	1.289	-1.653	0.002
Community relationships	-0.647	0.583	-1.108	0.051
Involvement	0.372	1.928	0.192	0.016
Environmental impact	-0.457	0.255	-2.825	0.012

239

240 5. Discussion

241 5.1. Perceptions of existing tourism impact

242 Environmental degradation and reduced social cohesion were perceived as the greatest costs of existing
 243 tourism. Perceptions of tourism on quality of life and income generation were positive and agreed with
 244 previous findings [46, 47]. Findings reaffirm the importance of understanding the social dimension of island
 245 tourism as conflict between resident community groups, specifically between TCI nationals and the expatriate
 246 community was evident throughout interviews. This highlights the threat of emerging tourism economies and
 247 job prosperity exacerbating rather than alleviating inequalities at local levels [48], leading to reduced social
 248 cohesion [49, 50]. Increasing social stratification and income disparity among community groups is perhaps
 249 one of the greatest threats to the long-term sustainability of tourism in TCI and other small island nations. It is
 250 a significant challenge that must be addressed in tourism policy for effective implementation of sustainable
 251 tourism initiatives, yet, social issues have not received as much attention in the published literature when
 252 compared to environmental and economic aspects [51].

253 **5.2. Effects of socio-demographic factors on perceptions and support for tourism**

254 Contrary to the findings from a review of the literature, socio-demographics did not significantly influence
255 perceptions of tourism impact [35, 52]. TCI nationals had less direct economic involvement in tourism yet,
256 they were significantly more likely to support future tourism development than non-nationals. This
257 observation supports results from a study conducted by Cameron and Gatewood [53] who found that TCI
258 nationals were very positive about the economic impact of tourism and were supportive of tourism
259 development. However, this contradicts previous studies which found that native residents have more
260 unfavourable attitudes towards tourism [52, 54].

261 **5.3. Perceptions influence support for future tourism development**

262 Although residents included in this research were largely supportive of tourism development, results showed
263 clear differences in acceptance of specific tourism projects. Findings highlight a need to develop and diversify
264 tourism outside of the cruise terminal, where negative impacts often outweigh the benefits due to revenue
265 leakage outside of the host community [55] and increasing pressure on natural resources [56].

266 Inevitably, tension between stakeholders in this study has arisen due to the conflict between the need to
267 protect the marine environment and the prospect of economic benefits derived from tourism [56]. Marine
268 spatial planning (MSP) can play an important role in the organisation of tourism development and is a concept
269 which aims to mitigate both user-user conflicts as well as user-environment conflict [57]. In locations with
270 heavy dependence on marine resources MSP can ensure coastal space is not overwhelmed by tourism facilities
271 (i.e. resorts) and thus ensure synergies among economic sectors [58].

272 Residents that perceived tourism to have negative environmental impacts showed significantly reduced
273 support for tourism development. This finding highlights important relationships between environmental
274 decline, community perceptions and factors underpinning support for future tourism development.

275 Environmental impacts associated with tourism may be more acute and apparent to residents in small islands
276 as tourism activities are often disproportionately concentrated on the most sensitive sites where changes to the
277 environment can be more visible [59]. Thus, mitigating negative environmental impacts can be useful in
278 gaining resident support for tourism development particularly in SIDS where unique natural ecosystems
279 attract tourists, but at the same time, confronts them with several challenges and vulnerabilities.

280 Community involvement in decision-making for tourism planning and development was also found to
281 significantly increase support for development of this sector [60]. Greater inclusiveness and broader
282 community representation can promote democratic decision making and thus, confer better local support for
283 management measures [11]. Management approaches for coastal resources are in general shifting from
284 government-led top-down processes towards more collaborative management methods [61-63] in recognition
285 of the benefits associated with community and stakeholder participation. This is particularly important in
286 small island states, where natural resources are vital for livelihoods, food security and well-being of residents.

287 **5.4. Policy and development implications**

288 Short-sighted management plans and narrowly focused policy objectives around economic prosperity has
289 promoted the rapid emergence of mass tourism in other countries resulting in fragmented social structures and
290 environmental degradation [64]. In small island states integration of social, environmental and economic, as
291 well as cultural goals is critical to developing sustainable tourism plans that will be supported by those
292 impacted.

293 Several policy recommendations emerge from this study based directly on the perceptions of residents.
294 Findings highlight the need to focus tourism development and future investment on projects which promote
295 overnight and longer residential tourism. This should aid retention of tourism revenue within the host country
296 and increase livelihood opportunities for residents. Development of guest houses and homestays have the
297 potential to ensure direct economic benefit to the TCI community while minimizing environmental costs.
298 Small scale eco-resorts and hotels could be considered but should ensure job prospects to residents. Ensuing
299 recommendations should also ensure that policy makers are sensitive to residents' concerns, specifically
300 perceived social inequalities related to employment opportunities. Marine spatial planning strategies could be
301 adopted to mitigate stakeholder conflicts and balance ecological, economic and social interest.

302 Facilitating greater resident participation through effective engagement fora and promoting collaborative
303 management approaches that consider the diverse perspectives and priorities of local stakeholders would
304 support tourism growth which better reflects the local context. Marine spatial planning and co-development
305 approaches are an integral means of obtaining first-hand knowledge of local dynamics between communities,
306 natural resources and tourism. Furthermore, transparency about why decisions are made can speed up the
307 development process [65, 66]. Both are critical in garnering stakeholder support and will ultimately improve

308 success of tourism development. Ensuring that the concerns of local communities are at the centre of building
309 tourism policy, combined with action to enhance conservation of marine resources can help countries like the
310 TCI make progress towards sustainable tourism development.

311 **6. Conclusion**

312 The results of this study contribute to a wider understanding of local perceptions of tourism and factors which
313 influence support for future development in a small Caribbean Island. Support was greatest among
314 respondents who were involved in the planning process and believed tourism had positively impacted
315 community relations. Conversely, respondents who attributed tourism to environmental degradation showed
316 significantly lower support for tourism development. Developments which promote overnight tourism while
317 safeguarding against environmental degradation should be a priority. Findings provide appropriate
318 information for tourism development and demonstrate the importance of considering and incorporating
319 perceptions data into local development plans. Development of small island tourism could significantly
320 benefit from marine spatial planning due to its potential to mitigate negative impacts on natural resources, as
321 well as land-use conflicts.

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329 **Conflict of interest statement**

330 The authors declare that they have no conflict of interest. The views expressed herein are those of
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