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2 Stakeholders' Perceptions of Social and 3 Environmental Changes Affecting Everglades 4 National Park in South Florida, U.S.A

5 Michael A. Schuett¹, Yunseon Choe^{2*}, and David Matarrita-Cascante¹

6 ¹ Department of Recreation, Park, and Tourism Sciences, Texas A&M University, 600 John Kimbrough Blvd.,
7 College Station, TX 77845, USA

8 ² Department of Tourism Management, Kyung Hee University, 26, Kyungheedae-ro, Dongdaemun-gu,
9 Seoul, 02447, Republic of Korea

10 * Correspondence: ysc@khu.ac.kr; Tel.: +82-961-0819

11

12 **Abstract:** Over the last few decades, urban expansion and population shifts have modified the
13 existing landscape throughout the U.S. Protected areas and development are compatible lenses, yet
14 stakeholders' involvement in decision-making is often missing from environmental governance. We
15 examine how stakeholders living and working in proximity to Everglades National Park (EVER)
16 perceive environmental and social changes to the park and community park relations. EVER was
17 selected as a study site for several reasons: proximity to urban areas, rich biological diversity, largest
18 subtropical wilderness in the U.S., International Biosphere Reserve, World Heritage Site, and
19 prominence as a tourist destination for the region. Forty-one semi-structured interviews were
20 conducted with neighborhood groups, representatives from gateway communities, and
21 conservation organizations. An analysis of the interview data generated six research themes: loss of
22 native species, urban development, a shortage and contamination of water, hurricanes, climate
23 change, and increased recreation use. The results of this study add to the literature by providing a
24 better understanding of the relationships stakeholders have with national parks. The results will
25 provide useable knowledge that may help stakeholders and public land managers design strategies
26 related for sustainable plans for the park and its surrounding communities.

27 **Keywords:** Everglades National Park; stakeholders' perceptions; social and environmental changes;
28 sustainable management

29

30 1. Introduction

31 Over the last few decades, urban expansion and population shifts have modified the existing
32 landscape throughout the U.S. [1], particularly observable in remote areas surrounded by natural
33 assets. As a result, an increasing number of national parks and protected areas have become
34 surrounded by newly formed or expanding communities, which have brought new challenges for
35 both park managers and the parks' adjacent communities. Such changes in land use patterns have
36 elevated the attention of the scientific community regarding the use and management of public
37 lands. While this entails different aspects, a line of research has been particularly interested in better
38 understanding those involved in the decision-making of such public lands.

39 Our study examines how the stakeholders living in proximity to and working with Everglades
40 National Park (EVER) have perceived environmental and social changes and community park
41 relations. In order to explore this phenomenon, we used the framework of environmental
42 governance. Environmental governance describes how citizens and authorities are engaged in
43 natural resource decision-making, specifically, "how we make environmental decisions and who
44 makes them...." [2] (p. 1). In this framework, environmental governance involves decision-makers

45 at a variety of levels such as consumers/residents, NGOs, federal agencies, governments, business
46 people, and scientists [2] (p. 6). This process includes , “the interrelated and increasingly integrated
47 system of formal and informal rules, rule-making systems, and actor-networks at all levels of
48 human society (from local to global) that are set up to steer societies toward preventing, mitigating
49 and adapting to global and local environmental within the normative context of sustainable
50 development” [3] (p. 3).

51 Given the complexity of people-park relationships, more research needs to examine how these
52 relationships have changed over time in order to facilitate more inclusive decision-making
53 processes at the park and community levels [4]. To date, the majority of the research on park-
54 community relationship has focused on the impacts of communities [5,6], the role of parks in
55 improving physical and mental health and overall well-being [7,8], and factors of participation [9].
56 These studies have mostly considered the communities to be contextual components of their
57 research; they have not examined communities as stakeholders and the parks around them.

58 Even though EVER has experienced numerous social (overpopulation and urban
59 development) and environmental changes (environmental damage, water inflow, and natural
60 disasters) over the last few decades, a limited number of studies have explored EVER and its
61 stakeholders [10]. There have been many social science studies done on EVER; however, most have
62 focused on the Everglades Restoration [10]. Thus, there is a need to explore how stakeholder groups
63 perceive changes with EVER and how these threats involve stakeholders. This study contextualized
64 the findings within an environmental governance framework to understand how various
65 stakeholders’ perceive social and environmental changes affecting EVER. Given the pressures that
66 EVER faces from urban forces, such as urban sprawl, pollution, population change, and natural
67 disasters, the purpose of this study is examine how the stakeholders living in proximity to EVER
68 perceive changes with the park and community park relations, and what this means for the future
69 of the park.

70 *1.1. Study Background: Social and Environmental Changes Affecting Everglades National Park*

71 EVER was selected as a study site due to its proximity to urban areas and rich biological
72 diversity. EVER is also an important tourist destination and economic engine affecting its
73 surrounding region. EVER is situated at the southern end of the Florida peninsula. The park spans
74 1,508,570 acres and was declared a national park in 1947 [11]. It has been called “a river of grass
75 flowing imperceptibly from the hinterland into the sea” [12]. EVER is the largest subtropical
76 wilderness found in North America and one of the most popular and heavily visited tourist
77 destinations in the U.S., with approximately one million recreational visits in 2017 [13]. It is one of
78 only three locations in the world to appear on the following lists of protected areas: International
79 Biosphere Reserve (1976), World Heritage Site (1979), and Wetlands of International Importance
80 (1984).

81 In 1993, EVER was listed as an endangered property due to “damage caused by Hurricane
82 Andrew and a marked deterioration in water flows and quality resulting from agricultural and
83 urban development” [14]. Due to the efforts invested in restoration and conservation, EVER was
84 removed from the UNESCO endangered list in 2007. However, environmental damage,
85 overpopulation, pollution, water inflow, and natural disasters have dramatically decreased the
86 biodiversity of species, leading UNESCO to relabel EVER as an endangered World Heritage Site
87 [14].

88 Growth of population and development have squeezed EVER inland from both coasts. In the
89 1950s, researchers estimated that the population of Florida in the 21st century would be two
90 million; however, as of 2015 it is more than seven million; this number is expected to double in the
91 next 50 years [15]. The population increase in south Florida has accelerated pollution to the park’s

92 ecosystem. This pollution is derived primarily from phosphorus stemming from the use of the
93 agricultural fertilizers in the counties north and south of Lake Okeechobee, which is over 100 miles
94 from EVER. In 2005, Hurricanes Katrina and Wilma left no structure untouched within EVER,
95 including the visitor center, lodge, and restaurant in the Flamingo area of EVER (southern Visitor
96 Center) [16].

97 Currently, 68 plant and animal species are also threatened or endangered. Thus, the
98 Comprehensive Everglades Restoration Plan (CERP) was created in 1999 to combat the threatened
99 or endangered status of the flora and fauna to restore water, land, and the ecosystem in EVER. This
100 effort has been the largest ecosystem restoration project in the world; it is projected to span over 35
101 years, and the federal government and the state of Florida have provided \$7.8 billion in funding
102 [17].

103 The vast majority of research conducted on the park has focused on its natural resources and
104 restoration. For example, numerous studies have been conducted on exotic invasive species [18], the
105 fauna [19], fire regime [20], pythons [18], vegetation [21], and water [22]. According to Knox [23], an
106 increasing need exists to incorporate interdisciplinary research on the Everglades' restoration in
107 both the natural science and social science fields, including environmental [24,25], economic [26],
108 socio-political [23,27,28], and cultural aspects [29,30]. However, little research has focused on the
109 human dimension of the restoration work at EVER [31,32,33,34]. It is crucial to understand how the
110 stakeholders perceive changes with national parks in order to facilitate more inclusive decision-
111 making processes at the park and community levels [4]. Therefore, this study fills the research gap
112 by exploring how stakeholders living and working in proximity to EVER perceive environmental
113 and social changes to the park and community park relations.

114 **2. Method**

115 *2.1. Data Collection and Sample*

116 The researcher used a qualitative approach for data collection. This approach was chosen to get
117 more detail about the attitudes, feelings and values from the study subjects [35]. The researcher
118 conducted a series of interviews in the park as well as in Miami during the spring of 2014. Previous
119 scoping visits to the study area allowed the researcher to identify the community stakeholders who
120 were invited to participate in the interviews. Snowball sampling was used to obtain a list of key
121 informants from the Everglades Coalition webpage, and select the participants for interviews. The
122 Everglades Coalition was chosen to identify the key informants of EVER because this organization
123 works "at the local, state, national and even international levels to increase awareness of
124 environmental and conservation issues in the Everglades watershed" [36]. These stakeholders
125 included consumers/residents, NGOs, federal agencies, state/local governments, business
126 stakeholders, and scientists. The study participants met the following criteria for study inclusion:
127 actively involved with EVER and willingness to participate in the interview.

128 The interviews were conducted using a semi-structured interview format that accommodated
129 the chosen open-ended interview technique. All of the interviews were conducted in-person unless
130 other arrangements were necessary (e.g., phone interview). All of the interviews were audio
131 recorded and transcribed. The transcripts were coded and analyzed using the qualitative analysis
132 software program Atlas.ti 7. These data were analyzed using a content analysis methodology, and
133 the coding categories were generated directly from the raw data of the text. Open codes were
134 generated across the data set by identifying meaningful units based on a line-by-line analysis. All of
135 the text of the transcripts were coded, and themes were derived from these data.

136

137 2.2. Instrument

138 Based on a literature review of the relationship between the stakeholders and parks, the
139 interview included questions focused on changes over time with EVER. The questions were
140 adapted from Ogden's work [33], which identified perceived changes to EVER (i.e., How has EVER
141 changed over the last 10 years? How have those changes affected EVER?).

142 2.3. Trustworthiness

143 This study incorporated trustworthiness during the research phase, which establishes
144 credibility, transferability, dependability, and confirmability of the data [35,37,38]. For this study,
145 prolonged engagement was conducted by visiting the research site and meeting the people in the
146 study. Observations were completed in order to provide depth and details emerging from the
147 interviews. Peer debriefings were conducted with colleagues and fellow researchers in order to
148 check the interpretations during the analysis and in drawing conclusions. By providing a thick
149 description, this process allowed the researcher to determine whether the results were relevant to
150 other situations or subjects. An inquiry audit was completed by a colleague who reviewed the
151 study process. This colleague then provided feedback to the researcher who considered and
152 evaluated it. For this study, triangulation and consultation were conducted in order to confirm the
153 consistency of the findings.

154 3. Results

155 The study findings were based on data gathered from 41 interviews, including
156 consumers/residents, NGOs, federal agencies, state/local governments, business stakeholders, and
157 scientists. Overall, 90% of the participants' initial reactions to the question about whether they had
158 perceived any changes to EVER was "yes." Across the stakeholder groups, the findings
159 demonstrated how the stakeholders perceived the changes in and around EVER, and threats to the
160 natural environment became evident. From these data, we identified six themes: (1) loss of native
161 species; (2) urban development; (3) shortage and contamination of water; (4) hurricanes; (5) climate
162 change; and (6) increased recreation use.

163 3.1. Loss of Native Species

164 Changes in and around EVER were associated with a loss of native species. Our findings
165 showed that development, pollution, and water shortages have reduced the number of native plant
166 and animal species in EVER (e.g., Florida wood stork, Florida panther, American crocodile, and
167 West Indian manatee) and increased the threat of invasive species (e.g., Burmese pythons and
168 exotic plants, such as the Brazilian pepper and Australian pine). These results are consistent with
169 information published in recent reports about EVER [15,39].

170 Invasive species play a strong role in the disruption of an ecosystem's balance. For instance,
171 exotic fish consume native fish and melaleuca trees prevent native plants from receiving sunlight.
172 Since invasive species have less predators, they have a competitive advantage over native species,
173 consuming water, sunlight, and nutrients [40]. Invasive species issues are "very serious" and "the
174 most prominent problem" in ecosystem changes. According to a landscape architect from Miami's
175 parks administration department:

176 The Everglades ecosystem has become a depository for every exotic species that alleged pet
177 owners no longer have an interest in maintaining or possessing. The notion that the
178 Everglades is an acceptable dumping ground of reticulated pythons, Burmese pythons, and
179 various other exotic species is anathema to sound and informed ecological policies. The federal
180 government should immediately prohibit the import of such species.

181 Moreover, various conservation groups have cited the loss of native species and ecosystem
182 deterioration as being closely connected with urbanization, rising sea levels, and climate change
183 [41,42]. According to a director from one non-profit group:

184 Biologically, it (Everglades National Park) has been degraded due to ongoing problems onsite
185 and offsite. The ecosystem can't adapt to the new system. It has experienced a decline in
186 wildlife diversity due to the python infestation. Its salinity balance is changing due to sea level
187 rise. It is experiencing peat collapse.

188 3.2. *Urban Development*

189 The study findings focused on urbanization in Miami and Fort Myers, (approximately one-two
190 hours respectively from EVER). Respondents described how more roads, homes, and buildings are
191 replacing the natural environment and, therefore, eliminating habitat. Urban sprawl and
192 agricultural expansion have resulted in an increased need for water, canal construction, and water
193 control structures. The respondents have seen an increase in the number of new farming operations
194 surrounding the entrance to EVER. On the surface, farms may appear to be safe buffers for the
195 environment, but the increased use of water for irrigation as well as the flooding of fields, runoff,
196 additional infrastructure, and construction for these new agricultural operations have been
197 problematic. One public information officer said: "The farming is to at least serve as a safety for the
198 wildlife between Everglades National Park and the urban world. So, a lot of farming is
199 disappearing and ending that nice cushion that wildlife had."

200 One landscape architect in Miami's parks administration department stated that the most
201 obvious changes were the product of undesirable and external forces that have been brought to
202 bear on the Everglades ecosystem:

203 Notably, these include the failures to restore the random oxbows of the Kissimmee River
204 through the total de-channelization of the river, and the restoration of wetland habitats
205 without compensation to adjacent landowners ... Internally, while energy flows, such as
206 water movement within the park, are desirably impacted by NPS policies, the political
207 interests of key financial players create adverse, undesirable impacts.

208 Furthermore, even though the Urban Development Boundary (UDB)¹ was designed to protect
209 all of the Everglades, it has not been as effective as planned. A retired sergeant at Miami-Dade
210 Police Department commented that the purpose of the UDB was to restrict building, but the
211 political pressures to revise the zoning rules have negatively impacted the Everglades. The
212 participants of this study want to "protect Everglades National Park from development, extraction,
213 and technology" and the UDB is not working the way the residents hoped that it would.

214 3.3. *Shortage and Contamination of Water*

215 The respondents reported that farmland was disappearing due to increased infrastructure to
216 control water and flooding of agricultural lands; hence, increased infrastructure has reduced water
217 availability and added to pollution levels. In the past, EVER did not have a water quality or
218 quantity issue. However, over the last generation, population growth, urban development and the
219 degradation of natural areas has intensified water competition between residential, agricultural,
220 and preservation uses. One resident, who has lived in Miami-Dade County since 1975, described
221 how the park has changed: "The supply of fresh water was cut off and, so, it has less fresh water
222 that pushes the salt water back." The participants provided many examples of how development

¹ The Urban Development Boundary (UDB) is a line in Miami-Dade County's master plan designed to limit development from encroaching west and south into fragile agricultural lands and wetlands (Miami-Dade County, 2016)

223 and environmental pollution have negatively affected the water in EVER. One participant from the
224 Seminole Tribe of Florida said that the loss of water quality and quantity has affected the
225 biodiversity in South Florida in several ways:

226 Plants, lives, even the animals, fish lives affected somewhat because the fish anything that
227 related to water in the swamp, the living species are affected. Therefore, fish died out in South
228 Florida. It affected all different kinds of animals, and human beings, too. It is not good
229 consumption of the water in South Florida.

230 The respondents mentioned that EVER is helping supply water to large urban areas outside
231 the park's boundaries. For instance, one landscape architect from the city of Miami said that
232 "Everglades National Park was not considered relevant before the Everglades Restoration Projected
233 started. Now, it provides domestic water to several million people." This thought elaborated on in
234 an interview with an education director of an environmental foundation: "[Everglades National
235 Park is] important for the quality of the water for us. Everglades National Park will [solve] the
236 water problems within that geographic area."

237 The respondents reinforced the idea that access to a high quantity of quality water is needed to
238 restore and preserve the biodiversity of EVER; however, a high quantity of fresh water is a
239 challenge given the demands on its current use and no new sources becoming available. The
240 challenges with water use have negatively impacted the quantity and distribution of fresh water
241 entering the Everglades. The Comprehensive Everglades Restoration Plan (CERP), one of the most
242 extensive drainage systems in the Everglades, mimics a natural filtration system for ground water,
243 including "more than 2,000 kilometers of levees and canals, 150 gates and other water-control
244 structures, and 16 major pump stations" [43]. The CERP will help solve the shortage and
245 contamination of water, resulting in an increased freshwater supply in the backcountry by
246 providing substantial new water flow to the central Everglades.

247 3.4. *Hurricanes*

248 The stakeholders' discussed how Hurricanes Andrew (1992), Katrina (2005), and Wilma (2005)
249 devastated many aspects of EVER and its surrounding communities. In particular, the participants
250 in the current study witnessed the destruction of park structures, including the visitor center, lodge,
251 and restaurant in Flamingo (in the southern Visitor Center area of EVER), also a research site, near
252 the Gulf of Mexico, and damaged equipment.

253 Few of the participants felt the hurricanes helped the environment clean out and start over.
254 The hurricanes restored the natural water flow, redirecting dammed up water into EVER through
255 canals and flooding systems. An environmental education associate from Miami-Dade County's
256 Regulatory and Economic Resources department perceived that the hurricanes have solved more
257 problems from man-made pollution, saying: "Hurricanes also restored the water flow coming
258 down the Everglades. The post hurricane changes affected everything fairly." Individuals are
259 committed to the park and its ecosystem. One volunteer couple has worked at EVER through the
260 NPS's Volunteer in the Park program since Hurricane Andrew in 1992. One male participant who
261 has worked as a volunteer for the maintenance of EVER after hurricanes and mentioned that "the
262 hurricanes probably improved the environment, helping clean it out. It destroyed what man put
263 there, but it did not hurt what Mother Nature [makes]."

264 3.5. *Climate Change*

265 Most of the participants agreed that the Everglades Restoration Plan has helped raise
266 environmental awareness about how climate change will affect EVER in the future; however, the
267 respondents expressed feelings of uncertainty about the ability of the Everglades Restoration Plan

268 to overcome obstacles and challenges related to climate change. As “the Everglades Restoration
269 Plan will take 100 years to implement,” they felt that a number of continuing factors may
270 undermine its progress to combat climate change, such as the slow progress being made by the
271 federal government, lack of funding, and inaction by other government agencies.

272 The last 10 years have been positive for Everglades National Park. It is cited as the largest
273 project in the world. We have seen restoration begin to happen, projects are being constructed.
274 People are better understanding the importance of restoration ... but we need to do more. The
275 problem is that it will take over 100 years for an impact to be seen.

276 Despite the Everglades Restoration Plan’s efforts, the participants worry about how climate
277 change will affect EVER. One entomologist of Suwannee River Water Management District raised
278 an issue regarding the future: “If the climate models are correct, most of Everglades National Park
279 will be underwater in another hundred years.” A professor who is the conservation chair for
280 several voluntary groups stated that “climate change will result in a rise in the sea level and
281 possibly salt water intrusion that will increase the need for fresh water.” An education director of
282 Sanibel Captiva Conservation Foundation worried that climate change may just become an excuse
283 for not saving EVER: “There are plenty of people who are fearful of climate change. They are less
284 likely to be motivated to save it. Climate change allows people to dismiss the importance of the
285 restoration, as it gives them excuses not to be motivated to save it.” Some of the respondents believe
286 that EVER will be better in the short-term with more money to achieve solutions; however, in
287 reality, EVER has already suffered from sea level rise in the long-term. Others supported the notion
288 that EVER can serve as a venue for adapting to and reducing sea level rise. They thought that EVER
289 could be used as a model area in which to develop an overall strategy for dealing with climate
290 change and its impact upon humans, wildlife, ecosystems, and landscapes in general.

291 3.6. *Increased Recreation Use*

292 The majority of the stakeholders felt increased recreation use from many types of outdoor
293 activities was impacting the park’s natural resources. The number of visitors, boats, trailers, and
294 cars in the park have increased, which has degraded the shallow water areas and trails. In
295 particular, the vice mayor of Homestead, which is the closest community to EVER, shared his
296 concerns regarding this elevated recreation use: “I have seen changes dramatically in terms of the
297 number of people utilizing Florida Bay fishing. In regard to the boats, I have seen an increase in the
298 size of the vessels, changes in boating behaviors, and increased numbers of people fishing within
299 Everglades National Park.” Not only has increased recreation participation been a problem, but
300 recreation value conflicts have emerged between various user groups. Environmental groups have
301 become more resistant to various recreation user groups, especially all-terrain vehicle (ATV) users.
302 Volunteer groups have become concerned about the environmental degradation and noise impact
303 caused by ATVs.

304 Not only has increased recreation participation been a problem, but recreation use conflict has
305 seemed to emerge between business groups and recreation user groups. Business owners, such as
306 fishermen, have had other types of conflicts with recreation user groups, especially with an increase
307 in the number of boats, number of recreationists, and size of the boats in EVER. According to one
308 respondents, “The increasing number of boats and fishermen in shallow water has had an impact
309 on the fish. It scares them away. Currently, there are no rules dictating what size vessel can fish in
310 Florida Bay.” For instance, some fish species, such as the goby, use sound to detect predators or
311 prey and their communications are disrupted by ship noise [44]. Furthermore, boats with large,
312 powerful motors cause damage to the marine resources in shallow water. Due to these issues, these
313 stakeholders have provided input for EVER’s General Management Plan related to new boating
314 policies about where boaters can operate vessels (e.g., zoning regulations to prevent further
315 degradation of the natural environment).

316 We concluded that stakeholders living in proximity to EVER perceive the social and
317 environmental changes in EVER have become drivers for conflict among stakeholders. This view
318 corresponds to the results presented by Williams [45] in that individuals feel loss and conflict when
319 changes occur in special areas. These findings are consistent with the prior research which has
320 shown that social values, goal interference, and contextual differences can yield recreation conflicts
321 [46,47].

322 Overall, stakeholders living and working in proximity to EVER perceived environmental and
323 social changes to the park and community park relations due to the pressures that EVER faces from
324 urban forces, such as urban sprawl, pollution, population change, and natural disasters. These
325 changes lend sustainable support by stakeholders to minimize changes to the park to prevent the loss
326 of native species, slow urban development, improve water quality, or increased recreation use.

327 4. Discussion

328 We concluded in our study that stakeholders living in proximity to EVER perceive man-made
329 threats as major culprits in the degradation of the park's natural environmental. Our findings concur
330 with recent research that documents population increases in urban areas as being the driver for many
331 of the negative changes impacting protected areas [1]. Threats to the EVER ecosystem from urban
332 sprawl, demands for clean water, and loss of biodiversity are well-documented in recent studies
333 [15,39]. Our own findings support this research and suggest that climate change and natural disasters
334 (e.g., hurricanes) also adversely affect EVER and its environments.

335 Theoretically, this study filled the void in existing research by focusing on the human dimension
336 of the restoration work at EVER and how the stakeholders perceived the changes in and around
337 EVER, their perceived changes in and around EVER and identified changes over time. This study
338 contextualized the findings within an environmental governance framework to understand how
339 various stakeholders' perceive social and environmental changes affecting EVER, how they are
340 engaged in decision-making, and what this means for the future of the park. This study identified
341 stakeholders' perceived changes in and around EVER by looking at protected area management
342 practices and community park relations. Also, study findings showed that lessons learned from the
343 past can help guide stakeholders' perceptions with national parks and future community park
344 relations. The results showed that stakeholders who perceived negative changes to EVER are more
345 likely to engage in environmental and sustainability activities in the park as these changes motivate
346 stakeholders to minimize changes to the park.

347 Since most of the adverse environmental impacts have been driven by humans, social scientists
348 have highlighted the inclusion of the human factor to help mitigate environmental issues for
349 sustainability [48,49]. Practically, this study identified how various stakeholders perceived the
350 changes that EVER has recently experienced (e.g., urban development and increased recreation use).
351 For instance, due to a growing population in the Homestead and South Florida areas, recreational
352 use was impacting the natural environment of EVER and its neighboring communities. To mitigate
353 the increased recreation use, park management could focus on educational programs to raise people's
354 environmental awareness, helping them understand EVER's vulnerability and encouraging them to
355 develop sustainable ways to minimize human impacts. Managers could target these programs to
356 youth, seniors, new residents, recreational groups, and voluntary groups, thus incorporating
357 stakeholders' myriad of needs, interests, and values. Interpretative programs might also gain
358 attention and interest from visitors involved with education and conservation [50], such as the Citizen
359 Science project, the Girl Scout Ranger program, and the Artist-in-Residence program.

360 Furthermore, an adequate budget is critical to the management of any protected area and its
361 programs. Public land managers need to work with partners to support EVER with human and
362 financial resources through fundraising for educational and membership programs, friendraising,
363 and recruiting volunteers within and beyond boundaries of the park [51]. For instance, public land
364 managers could create partnering relationships with community colleges or other institutions of

365 higher education to train volunteers as seasonal rangers. Volunteers, such as the Florida Trail
366 Association, could also be used to maintain and monitor sustainable trails [52].

367 Finally, the interview questions developed in this study explored how various stakeholder
368 groups perceived changes in and around the park. Future research should incorporate additional
369 questions about stakeholders who are involved in the collaborative process (e.g., role, power,
370 influence, and political environment). Other areas of inquiry could focus on the length of time that
371 the stakeholders have been working with the parks and interactions between protected areas and
372 stakeholder groups.

373

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377 **Author Contributions:** Michael A. Schuett and conceived and designed the experiments; Yunseon Choe
378 analyzed the data and wrote the paper; David Matarrita contributed reagents/materials/analysis tools.

379 **Conflicts of Interest:** The authors declare no conflict of interest.

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