

A visitor use study of the Wilderness Areas of Everglades National Park

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Glossary

ANOVA: Analysis of Variance – A statistical method used to compare means between two or more groups. It assesses whether the observed differences in means are statistically significant.

Confirmatory Factor Analysis (CFA) – A statistical technique used to assess the measurement properties of a set of observed variables and their relationship to underlying latent factors. Often employed in psychometrics and social sciences to validate theoretical constructs.

Cramer's V – A statistical measure used in chi-square tests to quantify the strength of association between two categorical variables when one or both variables have three or more levels. Generally, the higher the value, the stronger the association (Vaske, 2008).

Cronbach's Alpha (α) – A measure of internal consistency reliability in psychometrics. It assesses the extent to which a set of observed variables (e.g. survey items) measures a single underlying construct. Higher values indicate greater reliability.

Eta squared (η^2) – A statistical measure used in analysis of variance (ANOVA) to quantify the effect size or practical significance of differences, with small, medium, and large effect sizes generally corresponding to approximately 0.01, 0.06, and 0.14, respectively.

Factor Loading – In the context of Confirmatory Factor Analysis (CFA), it refers to the strength and direction of the relationship between observed variables and the underlying latent factors. It indicates how much of the variation in the observed variables is explained by the latent factors.

Mean – A measure of central tendency that represents the average value of a set of numbers. It is calculated by summing all the values and dividing by the total number of observations.

n – Refers to the sample size, representing the number of observations or participants in a study or analysis.

Phi (ϕ) – A statistical measure used in chi-square tests to quantify the effect size or practical significance of differences, with small, medium, and large effect sizes generally corresponding to approximately 0.10, 0.30, and 0.50, respectively.

Standard Deviation (SD) – Measures the spread or variability of a set of data points around the mean. It quantifies the average distance between each data point and the mean.

Executive Summary

Sample Demographics

- The average group size was 2.69 individuals.
- Approximately 58.5% of visitors were in a group consisting of themselves and their family.
- The average age range of visitors was 45-54.
- The average income range of visitors was \$50,000-\$99,999.
- Approximately 88.4% of visitors were US residents. Among US residents, 29.3% of visitors were Florida residents. Of the Florida residents, 66.7% were from six counties.
- Most visitors identified as White (91.2%).

Visitors' Itinerary

- 78.6% of visitors used the Everglades National Park website at nps.gov as an information source, distantly followed by recreation.gov (36.5% of visitors).
- 84.5% of visitors knew they were recreating within the boundaries of a Wilderness area.
- For most visitors (44%), Everglades National Park was their primary destination (not the Everglades National Park wilderness areas).
- The median number of prior visits to Everglades Wilderness areas was one (20.1% of visitors). The mode was zero (45.9% of visitors).
- 17.9% of visitors stayed in Homestead the evening prior to their arrival at Everglades National Park.
- 38.3% were overnight visitors, whereas 61.7% were day visitors.
- Among overnight visitors, the mean number of nights was 3.62, with a maximum of 15.
- Among day users, the mean number of hours was 6.2, with a maximum of 20.
- The two most frequently reported primary activities were wildlife viewing (23.4% of visitors) and paddling/kayaking/canoeing (16.7% of visitors).
- Visitors were asked to rate the quality of all services and facilities encountered on a scale of 1 (very poor) to 5 (very good). The mean response for all services and facilities was 4 (good) or greater.

Visitors' Wilderness Values and Experience

- Visitors were asked to rate the importance of 15 wilderness values on a scale of 1 (not at all important) to 5 (extremely important). There was widespread agreement that wilderness values were very important. 12 of 15 wilderness values had means of 4 or greater. Protecting wildlife habitat had the highest mean response of 4.9.
- Visitors' motivations to visit were examined by asking them to indicate how true various statements were on a scale of 1 (not at all true) to 5 (completely true). When the statements were categorized into motivation domains, nature appreciation was the strongest motivator for visitors with a mean of 4.2.
- Presence of designated trails, presence of directional/navigational markers, and air quality were the only conditions that added slightly to the visitor experience.
- 30.5% of visitors reported experiencing barriers that prevent them from visiting Everglades Wilderness areas more often. The most frequent barrier reported by these visitors was the distance between their home and the Wilderness areas (54.3%).

- Overall, actions that enhance, protect, or preserve the environment and consider science in decision-making were considered the most important for visitors' acceptance.

Management Implications

- Visitors are generally focused on the Everglades as a national park, as opposed to designated wilderness.
- Wilderness focused visitors exist, however, management and communication with them requires a targeted approach.
- Visitors prioritize naturalness over wildness and untrammelled.
- Communicating with visitors through the NPS website may be most effective.
- There is an opportunity to support inexperienced visitors with opportunities to learn basic outdoor skills.

Methods

Data Collection

Surveys were conducted from January 9, 2023, to April 29, 2023, at eight sampling sites within Everglades National Park: Long Pine Key, Flamingo Marina, Gulf Coast Visitor Center area, Caribbean Club, 9 Mile Pond, Hells Bay, Coot Bay, and Coastal Prairie. Samplers included University of Montana staff, Forest Service staff from the Aldo Leopold Wilderness Research Institute, Denver Service Center staff, and Everglades National Park volunteers. Samplers would ask the visitor if they would be willing to answer the survey in-person or later using a QR code or an email link; responses recorded on a tablet or with a QR code or email link were automatically saved on a UM Qualtrics account, while completed paper surveys were manually entered into the Qualtrics account by researchers. If the visitor declined to participate, they were asked to answer two non-response bias questions. During some sampling events, samplers left cards with the QR code on windshields of parked cars.

In total, there were 70 sampling events across 43 days, though some data sheets did not record the sampling site, the time, or both. The most sampled day was Sunday (23%, $n=16$); the least sampled day was Monday and Thursday (10%, $n=7$). Sampling events generally occurred in the afternoons. The average starting time was roughly 12:15PM, the average ending time was roughly 3:45PM, and the average duration for each sampling event was 3 hours and 30 minutes. The response rate to in-person surveys was 60.8% ($n=278$), while the response rate for email submissions was only 20.8% ($n=20$). It was impossible to calculate a response rate for QR code responses because some samplers did not record how many QR codes they distributed, leaving the research team without an accurate number of distributed QR codes to compare to QR submissions.

Data cleaning

Cleaning the survey data was conducted in IBM SPSS. We followed the guidelines from Vaske (2008) for survey cleaning and analysis. For individual batteries in the survey with scaled question, such as 1 (strongly disagree) to 5 (strongly agree), we calculated variance within each individual's responses to get rid of straight-line error, where respondents gave the same response for each question. Once the surveys were cleaned, descriptive and frequency statistics were run in SPSS and unrealistic outliers were removed.

Data analysis

The cleaned data set was analyzed using R, JASP, and Excel. Descriptive statistics, such as mean responses and response frequency, were calculated in R, as were figures that visually displayed data. These descriptive statistics are provided for each question. Qualitative coding, or the identification of common themes (codes) within text responses, of the open-ended question was completed in Excel. Longer open-ended responses were frequently categorized into two or more codes, meaning that the total number of codes was higher than the total number of responses. Statistical analysis using chi-square tests of independence and 1-way analysis of variance (ANOVA) tests was performed with JASP to understand the difference in responses between overnight and day users and between visitors belonging to different income ranges. The result of this analysis is provided in the "additionally analyses: differences in perspectives" section, which

includes findings based on statistical significance, practical significance, and discussions with Everglades managers and planners focused on wilderness stewardship planning.

Sample Demographics

Group Size and Composition:

Visitors reported group sizes ranging from 1 to 24; the average group size was 2.69 individuals. Additionally, visitors were asked to choose one of eight responses that best described their group. Table 1 below displays the frequency and percentage of visitors' group type. The most common group type was visitors travelling with their family (59% of visitors), distantly followed by visitors travelling with friends (19%).

Table 1: Frequency and percentage of visitors' group type (n=342)

Group type	Frequency	Percentage
Myself with family	200	58.5%
Myself with friends	65	19.0%
Myself (alone)	45	13.2%
Myself with family and friends	23	6.7%
Club/organization/school	4	1.2%
Commercial guided tour group	2	0.6%
Other	2	0.6%
Other organized group (e.g. business group)	1	0.3%

Preferred Language:

Visitors were asked to identify in which language they and their group preferred to get information about Everglades Wilderness areas. 96.5% of visitors (n=330) preferred English, followed by French (1.5%, n=5), Spanish (0.9%, n=3), German (0.9%, n=3), and Portuguese (0.3%, n=1).

Sex:

Approximately 56.5% of visitors (n=177) identified as male and 42.2% (n=132) identified as female. 1.3% (n=4) preferred not to respond.

Age:

Visitors were asked to indicate their age range. The average reported age range was 45-54, though the mode 25-45.

Table 2: Frequency and percentage of visitors' ages (n=319)

Age range	Frequency	Percentage
18-24	19	6.0%
25-44	113	35.4%
45-54	54	16.9%
55-64	59	18.5%
65+	74	23.2%

Income:

Visitors were asked to indicate their annual household income range, before taxes, for the prior year. The average income range was \$50,000-\$99,999; this was also the mode.

Table 3: Frequency and percentage of visitors' income (n=308)

Income range	Frequency	Percentage
Less than \$49,999	50	16.2%
\$50,000-\$99,999	84	27.3%
\$100,000-\$149,999	73	23.7%
\$150,000-\$199,999	56	18.2%
\$200,000 or more	45	14.6%

Visitors' Primary Residence:

Approximately 88.4% (n=282) of visitors were US residents. These visitors were asked to provide their ZIP code, though only 225 visitors did so. These provided ZIP codes represented 35 states. The most frequently reported state among was Florida, which was the primary residence for 29.3% (n=66) of US visitors. The only other states to be reported by more than 10 visitors were New York (6.8%, n=18) and Ohio (4.2%, n=11).

Of the Florida residents, 66.7% were from six counties in southern Florida: Miami-Dade, Browder, Palm Beach, Monroe, Lee, and Collier. These counties encompass the Miami-Fort Lauderdale-West Palm Beach Metropolitan Statistical Area (Miami-Dade, Browder, and Palm Beach counties), the Cape Coral-Fort Myers-Naples Combined Statistical Area (Lee and Collier counties), and South Florida (Miami-Dade, Monroe, and Browder counties). Visitors from these counties constituted 19.6% of all visitors who reported ZIP codes. Furthermore, visitors from Miami-Dade County alone constituted 8.9% of all visitors who reported ZIP codes.

Approximately 12% (n=37) of visitors were not US residents. The most frequent country of residence, reported by 29.7% (n=11) of these visitors, was Canada. Germany and the United Kingdom were the next most frequent countries of residence, both of which were reported by 18.9% of foreign visitors (n=7).

Ethnicity:

Visitors were asked if they identified as Hispanic or Latino; the majority of visitors, 90.4% (n=283), did not identify as Hispanic or Latino. Next, they were asked to indicate with which ethnic or racial group they most identified. Visitors could select all that apply among the following options: 1) American Indian or Alaskan native; 2) Asian; 3) Black or African American; 4) Native Hawaiian/Pacific Islander; 5) White. Visitors overwhelmingly reported their ethnicity as White (92.0%, n=288).

Table 4: Frequency and percentage of visitors' ethnicity (n=313)

Ethnicity	Frequency	Percentage
White	288	92.0%
Asian	8	2.6%
Black or African American	5	1.6%
Asian & White	4	1.3%
American Indian or Alaskan native & White	3	1.0%
Black or African American & White	2	0.6%
Native Hawaiian or Pacific Islander	1	0.3%
All ethnicities	1	0.3%
Asian, Native Hawaiian or Pacific Islander, & White	1	0.3%

Note: No visitors identified as exclusively American Indian or Alaskan native

Information Sources:

In addition to asking their language preferences to receive information, visitors were also asked to indicate which sources of information they used to plan their trip. They were provided a list of 13 options and could select all that apply. Overall, the Everglades National Park website was the most commonly used source of information, distantly followed by Recreation.gov. Only one visitor noted wilderness.net website as their source of information.

Table 5: Frequency and percentage of visitors' sources of information (n=337)

Source	Frequency	Percentage
Everglades National Park website (at NPS.gov)	265	78.6%
Recreation.gov	123	36.5%
Previous experiences	100	29.7%
Friends/relatives/word of mouth	89	26.4%
National Park Service brochures	78	23.1%
National Park Service staff or volunteers	69	20.5%
Other websites ¹	53	15.7%
High resolution maps	51	15.1%
Everglades National Park social media accounts	49	14.5%
Other ²	37	11.0%
Commercial guide/concessionaire	26	7.7%
Other social media accounts ³	9	2.7%
Wilderness.net website	1	0.3%

¹Visitors were asked to specify which websites they used. The most frequently reported website was Google (n=8).

²Visitors were asked to specify which sources they used. The most frequently reported source were books (n=16).

³Visitors were asked to specify which social media accounts they used. The most frequently reported sources were YouTube (n=3) and Facebook (n=3).

Knowledge of Wilderness Area Boundaries:

84.5% (n=289) of visitors were aware that they were recreating within the boundaries of a Wilderness area.

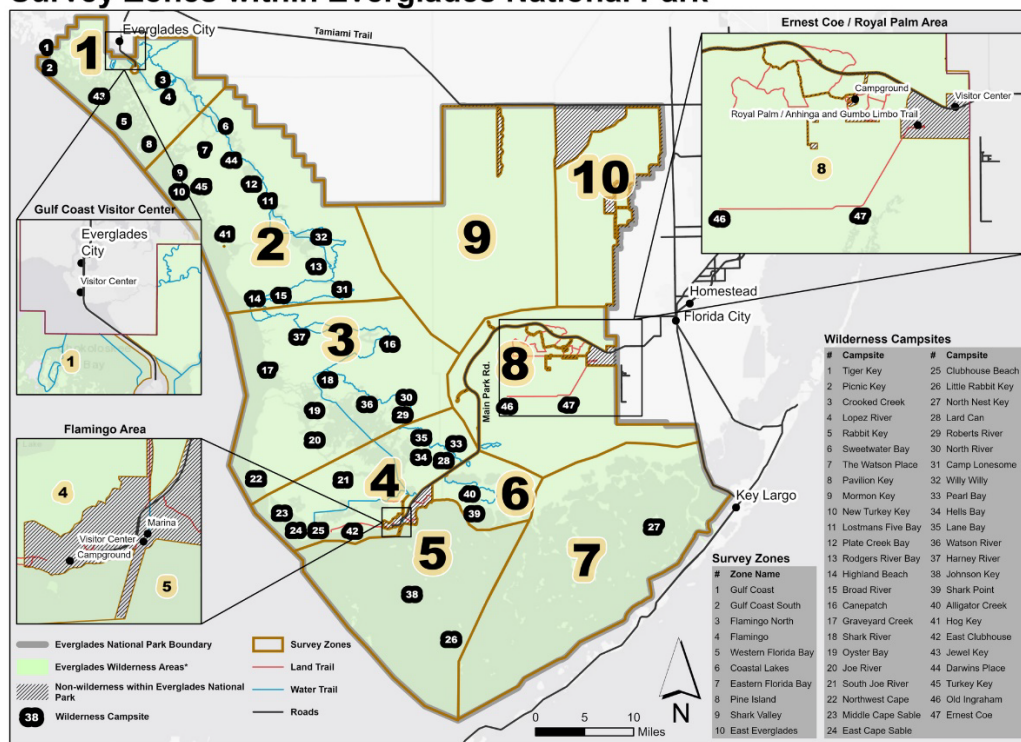
Visitors' Itinerary

Zones:

While taking the survey, visitors were presented with a map that displayed ten different zones within Everglades National Park (Figure 1). They were asked to select all zones that they had recreated in during their trip so far. 52.1% (n=177) of visitors recreated in Zone 4 during their trip, making it the most frequently reported zone. Zone 8 was the second most frequently visited zone, as indicated by 44.7% (n=152) of visitors.

Figure 1: Zones within Everglades National Park

Survey Zones within Everglades National Park



*Includes all designated, submerged, proposed, proposed potential, potential, and unassessed wilderness areas

Credits: University of South Florida, Earl, HERN, INCREMENT F, USGS, EPA, University of South Florida, County of Collier, Earl, HERN, USGS, EPA, NPS, Miami-Dade County, Earl, HERN, USGS, EPA, NPS, Earl, HERN, USGS, EPA, NPS, Earl, HERN, USGS

Table 6: Frequency and percentage of zones used by visitors (n=340)

Zone	Frequency	Percentage
Zone 4	177	52.1%
Zone 8	152	44.7%
Zone 1	95	27.9%
Zone 5	70	20.6%
Zone 3	60	17.6%
Zone 6	55	16.2%
Zone 7	36	10.6%
Zone 2	28	8.2%
Zone 9	26	7.6%
Zone 10	5	1.5%

Visitor Travel Plans:

Visitors were asked to indicate which of four statements best described how their visit to Everglades National Park fit within their broader travel plans. The most frequent response, reported by 44% (n=150) of visitors, was “Everglades National Park is my primary destination.”

Table 7: Frequency and percentage of visitor travel plans (n=341)

Travel plan	Frequency	Percentage
Everglades National Park is my primary destination	150	44.0%
Wilderness areas within Everglades National Park are my primary destination	113	33.1%
I am visiting this area before/after travelling to my primary destination outside the park	60	17.6%
Other (please explain) ¹	18	5.3%

¹27.8% (n=5) of these visitors reported that they were locals to the area

Number of Previous Trips to Everglades Wilderness Areas:

The median number of prior visits to Everglades Wilderness areas was one, as reported by 45.9% (n=155) of visitors. The mode, reported by 20.1% (n=68) of visitors, was zero.

Accommodations:

Visitors were asked to provide the location of their and their group’s accommodations on the night before their arrival at the Everglades Wilderness areas. 336 visitors provided such information, 17.9% (n=60) of whom stayed in Homestead the prior evening. The next most frequent location was Miami, where 11.6% (n=39) of visitors stayed the prior evening.

Table 8: Frequency and percentage of visitors' accommodations (n=336)

Location	Frequency	Percentage
Homestead	60	17.9%
Miami	39	11.6%
Flamingo/Flamingo Campground	21	6.3%
Florida City	21	6.3%
Long Pine	14	4.2%
Key Largo	13	3.9%
Naples	10	3.0%
Everglades City	10	3.0%

Note: 11 visitors were at home the night before. Other specific locations that were reported by 9 or fewer visitors were omitted from this table

Duration of Visit:

308 visitors provided information about the type, overnight or day, and duration of their trip. 38.3% (n=118) were overnight visitors, whereas 61.7% (n=190) were day visitors. Among overnight visitors, the mean number of nights was 3.62 and the mode 2, with a maximum of 15. Among day users, the mean number of hours was 6.2 and the mode 3, with a maximum of 20.

Activities within Everglades Wilderness Areas:

Visitors were presented with a list of 15 activities available in the area and were asked to indicate: 1) their primary activity during their trip by selecting just one option; 2) all activities that they participated in by checking all that apply. The most frequently reported primary activity was wildlife viewing (23.4%, n=90), followed by paddling/kayaking/canoeing (16.7%, n=67). Similarly, the most frequently reported activity that visitors participated in was wildlife viewing (71.3%, n=241), though the second most frequent activity was on-trail hiking (62.7%, n=212). On-trail hiking had the largest difference between visitors who reported it as their primary activity (15%, n=60) versus an activity they participated in (62.7%, n=212). No visitor reported sailing as either a primary activity or an activity they participated in.

Table 9: Frequency and percentage of activities among visitors

Activity	Primary activity frequency (percentage), n=334	Frequency of participation (percentage), n=338
Wildlife viewing	94 (23.4%)	241 (71.3%)
Paddling/Kayaking/Canoeing	67 (16.7%)	147 (43.5%)
On-trail hiking	60 (15.0%)	212 (62.7%)
Recreational fishing	38 (11.4%)	56 (16.6%)
Concession-operated tour	26 (6.5%)	81 (24.0%)
Camping on ground sites/beach sites	22 (5.5%)	81 (24.0%)
NPS-staff-led tour	7 (1.7%)	42 (12.4%)
Motorized boating	6 (1.5%)	66 (19.5%)
Off-trail hiking (slogging)	4 (1.0%)	41 (12.1%)
Camping on platforms (chickees)	3 (0.7%)	28 (8.3%)
Night sky viewing	2 (0.5%)	66 (19.5%)
Camping on a boat	1 (0.2%)	2 (0.6%)
Sailing	0 (0%)	0 (0%)
Snorkeling/Diving	0 (0%)	10 (3.0%)
Other (specify)	29 ¹	

¹Responses to “Other” were not categorized into primary activities or activities that the visitor participated in, thus there is no percentage. The most frequent “Other” activities were bicycling (n=6) and photography (n=6).

Visitors' Place Attachment

Place attachment has been studied and applied to multiple fields, such as environmental psychology and leisure sciences and tourism (Lewicka, 2011). When applied to forestry and conservation social sciences, place attachment is often categorized into two distinct dimensions: place identity and place dependence (Williams & Roggenbuck, 1989). Place identity involves social or emotional attachments to an area and can become an important aspect of a person's identity (Lin & Lockwood, 2014); Williams et al. (1992) note that these attachments can be very personal (e.g. an area visited as a child) or very abstract (e.g. national parks symbolizing American heritage). Place dependence derives more so from the physical, functional, or instrumental utility of an area, such as a national park that is perceived as especially good for specific recreational activities like hiking or camping (Lin & Lockwood, 2014; Williams et al., 1992).

In this study, visitors were presented with statements and were asked to indicate their level of agreement or disagreement with each one. These statements were chosen to understand each visitor's place attachment to Everglades National Park. Visitor responses were coded where "Strongly Disagree" was equal to -2 and "Strongly Agree" was equal to 2. Table 10 below shows the results of a Confirmatory Factor Analysis (CFA) used to confirm the measures for place identity and place dependence. The factor loadings indicate the relationship between observed variables and underlying factors; the higher the factor loading value, the stronger the relationship. Cronbach's alpha (α) measures the consistency of items within each factor. Similarly, a higher value indicates greater reliability. Overall, visitors agreed with statements related to place identity, particularly "this place is very special to me," more often than statements related to place dependence.

Table 10: Descriptive statistics for statements related to place attachment

Place Attachment	Standardized factor loading	Mean (SD)	Cronbach's alpha (α)
Place identity		1.0 (0.8)	0.86
This place is very special to me	0.9	1.1 (0.8)	
I am very attached to this place	0.8	1.0 (0.9)	
I identify strongly with this place	0.9	0.8 (0.9)	
Place dependence		0.6 (0.9)	0.74
No other place can compare to this place	0.7	0.9 (1.1)	
This is the best place for the activities I like to do	0.8	0.6 (0.9)	
I wouldn't substitute any other place for the recreation activities I do in this place	0.8	0.2 (1.1)	

-2=Strongly disagree; -1=Disagree; 0=Neutral; 1=Agree; 2=Strongly agree

All indicator loadings are significant at a bias-corrected 95% confidence interval.

Fit Statistics: $\chi^2 = 14.426$, $df = 15$; RMSEA = 0.049; SRMR = 0.045; CFI = 0.996.

Compost means and Cronbach alphas of each latent variable are in **bold**.

Standardized co-variances between the two latent variables are < 0.90 [0.76], supporting the discriminant validity of the latent motivation and outcome variables (Kline, 2016).

Quality of Services and Facilities

Visitors were presented with 12 statements that described services or facilities available at Everglades National Park. They were then asked to rate the quality of the services they received or the facilities they used during their visit on a scale of 1 (Very Poor) to 5 (Very Good). Table 10 below displays the mean response to each statement as well as the standard deviation. Visitors were overall positive about all available services and facilities that they received; all statements had means equal to or greater than 4.

Table 11: Descriptive statistics for statements related to quality of services and facilities

Services and Facilities	Mean	SD
Commercial services (e.g. guided boat tour, equipment rental, fishing guide)	4.5	0.7
Chickees (covered platforms for camping)	4.4	0.7
Ground or Beach campsites	4.4	0.7
Wilderness information at visitor centers	4.4	0.9
Booking a wilderness camping permit on Recreation.gov	4.3	0.9
Obtaining a wilderness camping permit in person	4.3	1.0
Condition of trails	4.3	0.8
Navigational signage and trail markers	4.2	0.9
Wilderness information online	4.2	0.8
Completing the boater education course	4.1	1.1
Wilderness information at trailheads	4.1	0.9
Toilet facilities	4.0	1.0

1=Very poor; 2=Poor; 3=Average; 4=Good; 5=Very good

Wilderness Values

To understand visitors' perception of wilderness values, visitors were presented with 15 statements and were asked to rate the importance of each on a scale of 1 ("Not at all important") to 5 ("Extremely important"). The highest mean was 4.9 for the statement "Protecting wildlife habitat," while the lowest mean was 2.6 for the statement "Supporting my personal or family's economic livelihood." This statement also had the highest standard deviation, 1.5. Overall, visitors found wilderness values very important; only two statements had means below 4. The statement "supporting my personal or family's economic livelihood" had the lowest mean (2.6) but the highest standard deviation (1.5), indicating wide variation in responses.

Table 12: Descriptive statistics for the importance of each wilderness value

Wilderness Value	Mean	SD
Protecting wildlife habitat	4.9	0.4
Preserving unique wild plants and animals	4.8	0.4
Protecting water quality	4.7	0.5
Knowing that future generations will have wilderness areas	4.7	0.5
Preserving an undeveloped landscape	4.7	0.6
Protecting air quality	4.6	0.6
Preserving natural areas for scientific study	4.5	0.8
Providing scenic beauty	4.4	0.8
Just knowing that wilderness areas exist	4.4	0.9
Providing opportunities for primitive forms of recreation (e.g. canoeing, stock use)	4.3	0.9
Providing opportunities for solitude	4.1	1.0
Providing opportunities for unconfined recreation (freedom to explore with minimum human restraints)	4.1	1.1
Providing spiritual inspiration	3.5	1.3
Supporting my personal or family's economic livelihood	2.6	1.5

1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important; 5=Extremely important
 Note: The fifteenth statement, "Other (please specify)," was omitted from this table

Visitors' Motivation

Visitors' motivations for their trip in Everglades Wilderness areas were explored via their responses to 21 statements using a scale of 1 ("Not at all true") to 5 ("Completely true"). These statements were grouped into six domains relating to nature appreciation, solitude, health and well-being, social identity/well-being, unconfined recreation, and personal development.

Overall, statements related to nature appreciation had the highest grand mean (4.2) and the lowest standard deviation (1). The statement with the highest individual mean, 4.5, was "...enjoy the sounds of nature," which was within the nature appreciation domain. The personal development domain had the lowest grand mean (3). This was confirmed by a CFA, the results of which are displayed in Table 13.

Table 13: Descriptive statistics for visitors' motivation

“During my trip to the Everglades Wilderness areas, I was motivated to...”	Standardized factor loading	Mean (SD)	Cronbach's alpha (α)
Nature appreciation		4.2 (1.0)	0.77
...enjoy the sounds of nature	0.8	4.5 (0.9)	
...get to know the environment	0.8	4.4 (0.9)	
...cultivate a closer relationship with the natural world	0.8	4.2 (1.0)	
...view dark night skies	0.7	3.9 (1.3)	
Solitude		3.8 (1.3)	0.79
...to be in an environment mostly free of human-made intrusions	0.8	4.2 (1.1)	
...be away from crowds of people	0.7	4.2 (1.1)	
...to experience life without everyday technologies	0.8	3.8 (1.3)	
...to think about who I am	0.8	3.0 (1.5)	
Health and well-being		3.7 (1.3)	0.84
...support my physical health and fitness	0.8	4.0 (1.1)	
...support my mental well-being	0.9	3.9 (1.2)	
...gain a more holistic sense of wellness	0.9	3.3 (1.4)	
Social identity/well-being		3.3 (1.4)	0.85
...be with people who share similar values	0.9	3.7 (1.3)	
...strengthen family or social bonds	0.8	3.5 (1.4)	
...increase my sense of belonging with others	0.9	2.9 (1.4)	
Unconfined		3.2 (1.5)	0.85
...make my own plans	0.9	3.6 (1.3)	
...roam wherever I want	0.9	3.1 (1.4)	
...experience minimal rules	0.8	2.7 (1.5)	
Personal development		3.0 (1.4)	0.84
...improve my outdoor recreation skills	0.8	3.1 (1.4)	
...gain a greater sense of self-confidence through challenge	0.8	3.0 (1.3)	
...grow and develop spiritually	0.9	2.7 (1.4)	

1=Not at all true; 2=Slightly true; 3=Moderately true; 4=Very true; 5=Completely true

All indicator loadings are significant at a bias-corrected 95% confidence interval.

Fit Statistics: $\chi^2 = 230.555$, $df = 155$; RMSEA = 0.039; SRMR = 0.058; CFI = 0.995.

Compost means and Cronbach alphas of each latent variable are in **bold**.

Standardized co-variances between the six latent variables are < 0.90, supporting the discriminant validity of the latent motivation and outcome variables (Kline, 2016).

Visitors' Designated Wilderness Familiarity

Visitors were next asked to indicate their familiarity with designated Wilderness. They were presented with six statements and were asked to indicate their familiarity on a scale of 1 ("Not at all familiar") to 4 ("Very familiar"). Overall, visitors were not particularly familiar with any aspect of designated Wilderness, with the highest mean only 2.2.

Table 14: Descriptive statistics for visitors' familiarity with designated Wilderness

Familiarity	Mean	SD
The primary mandate of the Wilderness Act of 1964 is to preserve wilderness character	2.2	1.1
The majority of submerged lands in marine areas of Everglades National Park are designated as Wilderness	2.2	1.1
The Wilderness Act prohibits the following uses by the public: motor vehicles, motorized equipment or motorboats, landing of aircraft, and other forms of mechanical transport (e.g. bicycles, canoe dollies)	2.1	1.1
The Wilderness Act of 1964 defined the concept of Wilderness and established the National Wilderness Preservation System	2.0	1.1
The majority of Everglades National Park is designated as the Marjory Stoneman Douglas Wilderness Area	2.0	1.0
The location of the boundaries of Marjory Stoneman Douglas Wilderness Area	1.6	1.0

1=Not at all familiar; 2=Slightly familiar; 3=Moderately familiar; 4=Very familiar

Conditions that Affected Visitors' Experience

Visitors were presented with 21 statements related to environmental, managerial, and social conditions and were asked to indicate how their experience with the condition impacted their experience in Everglades Wilderness areas. They were asked to do so on a scale of -2 (“Detracted greatly”) to 2 (“Added greatly”). Only three conditions had mean responses equal or greater than 1 (“Added somewhat”); all other conditions had a range of mean responses between 0.9 and -0.9. The condition that added the most to visitors’ experience was the “presence of designated trails,” whereas the condition that detracted the most was “trash and vandalism.”

Figure 2: Proportion of responses to each environmental condition ordered by cumulative “Added somewhat” and “Added greatly” responses

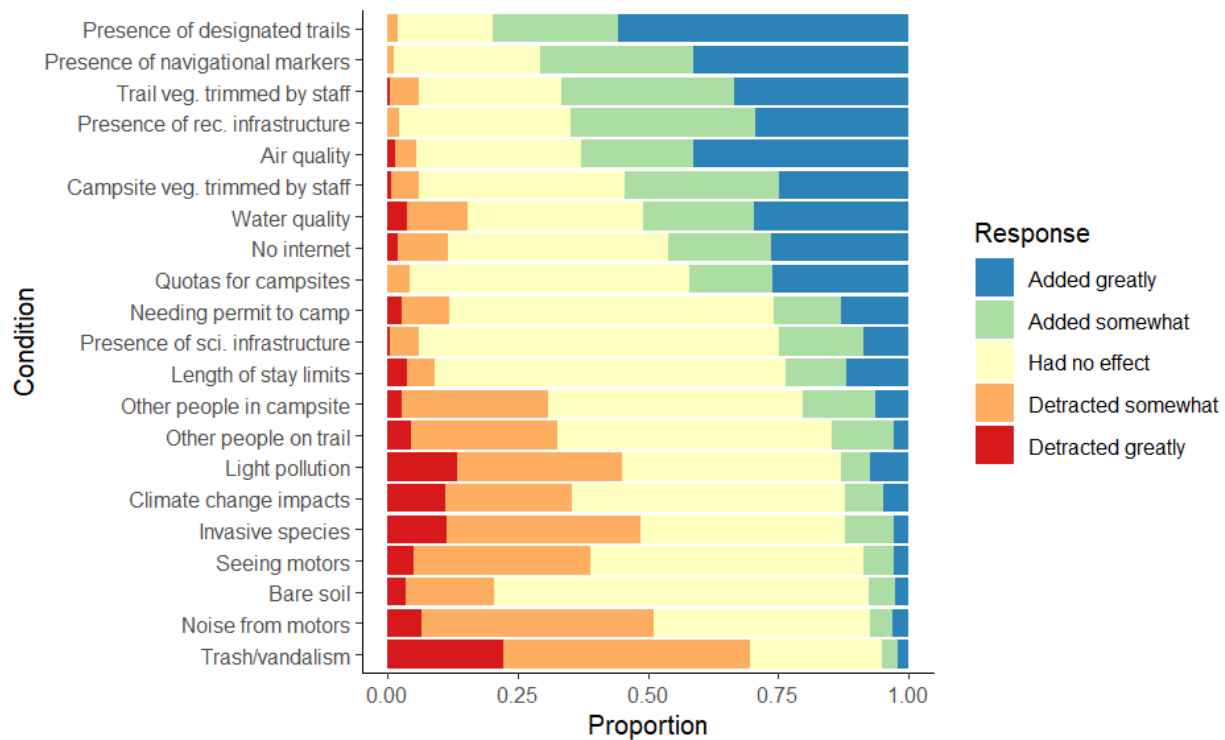


Table 15: Descriptive statistics for conditions that affected visitors' experience

Condition	Mean	SD
Presence of designated trails	1.3	0.8
Presence of directional/navigational markers	1.1	0.9
Air quality	1.0	1.0
<u>Trail</u> vegetation trimmed or cleared by staff	0.9	0.9
Presence of camping platforms, toilets, picnic tables, docks, other recreation facilities	0.9	0.8
<u>Campsite</u> vegetation trimmed or cleared by staff	0.7	0.9
Water quality	0.6	1.1
Absence of internet connectivity	0.6	1.0
Having a visitor capacity (quota) for designated campsites	0.6	0.9
Presence of scientific monitoring stations, radio towers, other installations and developments	0.3	0.7
Needing to get a permit to camp in designated wilderness campsites	0.2	0.9
Having a length of stay limit (# of nights) for designated campsites	0.2	0.9
Bare or eroding soil	-0.1	0.7
Hearing and seeing other people <u>while camping</u>	-0.1	0.9
Hearing and seeing other people <u>on the trail</u>	-0.2	0.8
Impacts from climate change (e.g. campsite flooding)	-0.3	0.9
Seeing motorized vehicles/equipment (motorboats, helicopters, generators)	-0.3	0.8
Light pollution	-0.4	1.0
Presence of non-native or invasive species	-0.5	0.9
Noise from motorized use (motorboats, helicopters, generators)	-0.5	0.8
Trash and vandalism	-0.9	0.9

-2=Detracted greatly; -1=Detracted somewhat; 0=Had no effect; 1=Added somewhat; 2=Added greatly

Barriers to Spending Time in Everglades Wilderness Areas

Visitors were asked if there are barriers in their life that keep them from spending more time in Everglades Wilderness Areas. 30.5% (n=96) of visitors reported that there are barriers, and 94 provided text responses explaining what they were.

These 94 statements were analyzed and then categorized into common themes or codes. Many statements contained text that was categorized into multiple codes, meaning that there were a higher number of codes than there were responses. Table 15 below displays all codes. Overall, distance from Everglades Wilderness areas was the most frequently reported barrier (54.3% of responses). Distance included vague references, such as “distance,” to specific geographic locations, such as “I live in Ohio” or “I live in Europe.”

Table 16: Frequency and percentage of barriers visitors experience (n=94)

Code	Frequency	Percentage	Example(s)
Distance	51	54.3%	“I live in France”; “Live in NY”; “...it’s too far for me to regularly visit”
Work	32	34.0%	“Work”; “My job”
Time	15	16.0%	“Vacation time”; “Time constraints”
Travel cost	8	8.5%	“Student debt”; “Is very expensive to travel here with limited public transport options”
Family & friends	7	7.4%	“My small children”; “Having not enough friends who enjoy the same activities as me”
Age	2	2.1%	“Getting old”
Capitalism	2	2.1%	“Capitalism”
Heat	2	2.1%	“...hot in the summer”
Knowledge	2	2.1%	“I would like being able to connect with people that will show me the ropes...to camping, kayaking, fishing, and general outdoor activities”
Physical disability	2	2.1%	“Wife is disabled”; “Physical disability”
Access	1	1.1%	“access”
“Pole troll zones”	1	1.1%	“Pole troll zones”

Visitors' Acceptance of Management Actions

Finally, visitors were presented with 14 statements related to management actions within Everglades Wilderness areas. They were then asked to indicate how important each statement was for their acceptance of management actions within these areas on a scale of 1 ("Not at all important") to 5 ("Extremely important"). The statement with the highest mean response was "Actions that preserve or improve natural environmental conditions," whereas the statement with the lowest mean response was "Actions that limit recreational facilities."

Table 17: Descriptive statistics for visitors' acceptance of management actions

Statement	Mean	SD
Actions that preserve or improve natural environmental conditions	4.6	0.6
Actions that are based on science	4.4	0.8
Actions that implement rules and regulations that protect natural and cultural resources	4.4	0.7
Actions that protect natural resources over human use	4.3	0.9
Actions that limit or reduces human manipulation of the ecosystem	4.2	0.9
Actions that lessen the impact of climate change on the environment	4.2	1.1
Actions that preserve or improve opportunities for solitude	3.8	1.1
Actions that lessen the impact of climate change on the visitor experience	3.7	1.3
Actions that are inclusive of diverse cultures, peoples, and perspectives	3.7	1.3
Actions that preserve or improve access to primitive recreation opportunities	3.6	1.1
Actions that limit administrative structures and installations (e.g. roads, radio repeater towers, research monitoring stations, etc.)	3.2	1.2
Actions that are based on economic consequences	3.0	1.2
Actions that preserve or improve recreation opportunities free from rules and regulations	2.8	1.4
Actions that limit recreational facilities (campsites, camping platforms, trails, signs, etc.)	2.8	1.1

1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important; 5=Extremely important

Additional Analyses: Differences in perspectives

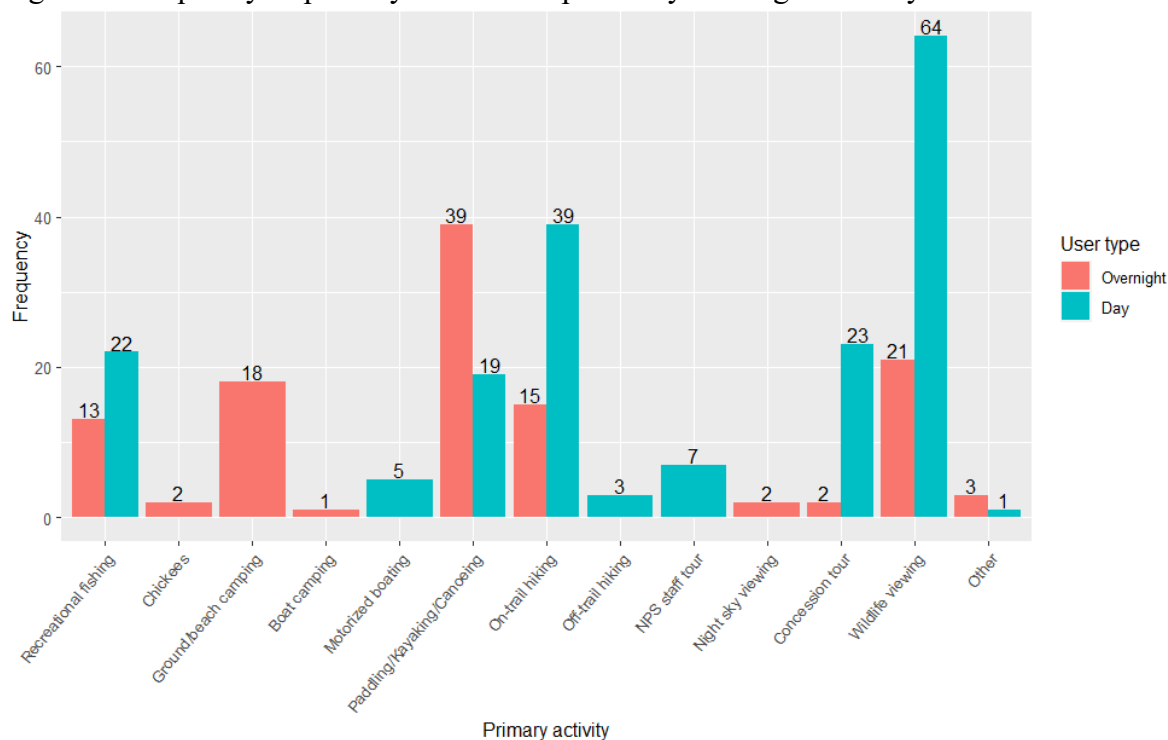
The results provided above are aggregate findings. Below we provide the results of additional analyses focused on providing more nuance via an understanding of how differences among visitors may influence perspectives. Based upon feedback from Everglades NP collaborators and potential to inform wilderness stewardship planning, we focus additional analyses on differences between day users and overnight users, differences across group sizes, differences based on recreational activity and where people traveled, and differences among visitors with varied income levels, age, and genders. We focus largely on differences with statistical and practical significance, within the context of the wilderness recreation mandate (i.e., opportunities for solitude, primitive, and unconfined recreation).

Exploring differences between overnight users and day users

Primary Activity

There was a significant difference¹ in primary activities between overnight users and day users, as shown in Figure 3. Of note, day users appeared to indicate their primary activity as on-trail hiking and wildlife viewing, more commonly than overnight users; it highlights the potential view of overnight users that wildlife viewing is likely to be experienced while participating in overnight activities such as camping and navigating the Everglades, often via watercraft.

Figure 3: Frequency of primary activities reported by overnight and day users



¹ A 1-way ANOVA test showed a statistical difference, with an F-value of 24.2, a p-value < 0.001, and a medium effect size ($\eta^2=0.09$).

Wilderness awareness

Analysis of the differences between overnight and day users highlighted that, on average, overnight users are generally more aware of wilderness. For instance, with regard to awareness that their recreation activities were taking place within designated wilderness, overnight users more frequently² reported that they were aware (yes=109, no=9), relative to day users (yes=153, no=37). Somewhat similarly, a greater proportion of overnight users (51%, n=57) had some level of familiarity with “the location of the boundaries of Marjory Stoneman Douglas Wilderness Area”, when compared to day users (36%, n=63).

Motivations and management actions

When considering four recreation and wilderness motivational constructs (i.e., personal development, nature appreciation, solitude, and unconfined), there were significant differences in the level of importance assigned to each by overnight and day users (Table 18). The effect size for each test was small, though, the differences do highlight an overnight user population that appears to be seeking a different type of experience, which is characterized in part by solitude. This suggestion is reinforced by another small difference between overnight users and day users with regard to management “actions that preserve or improve opportunities for solitude”; analysis shows a statistically significant difference³ between overnight users’ mean response (3.9) and day users’ mean response (3.6) to this management action.

Table 18: 1-way ANOVA comparisons between user types and motivations for their visit

Motivation Domain	Overnight users’ mean	Day users’ mean	F-value	p-value	Effect size (η^2)
Personal development	3.1	2.9	7.2	0.01	< 0.01
Nature appreciation	4.4	4.2	12.2 ^a	< 0.001 ^b	0.01
Solitude	4.0	3.7	9.4 ^a	0.002 ^b	<0.01
Unconfined	3.0	3.6	10.5	0.001	0.01

^aAdjusted F-value using Welch’s homogeneity correction ^bAdjusted p-value using Welch’s homogeneity correction

Environmental Conditions Impacting Visitors’ Experience

1-way ANOVA tests were conducted to determine if there were significant differences between user types’ responses to environmental conditions’ impact on their trip. Table 19 below displays the conditions that had statistically significant differences in mean responses by both user types. The largest difference in means between user types was for the “light pollution” environmental condition, to which overnight users indicated more adverse effects than day users. Additionally, this difference had a medium effect size ($\eta^2=0.06$). This difference could be expected given that overnight users were more motivated to visit Everglades Wilderness areas to view dark night skies.

² A chi-square test indicated that there was a significant difference, with a p-value of 0.01 and an effect size was slightly above minimal ($\phi=0.2$).

³ Using a 1-way ANOVA test, after adjusting using Welch’s homogeneity correction, the F-value was 6.7 and the p-value was 0.01. The effect size of this difference was relatively small ($\eta^2=0.02$).

Table 19: 1-way ANOVA comparisons between user types and environmental conditions' impact on their visit

Environmental condition	Overnight users' mean	Day users' mean	F-value	p-value	Effect size (η^2)
Light pollution	-0.6	-0.1	10.5	0.001	0.06
Trail vegetation trimmed or cleared by staff	0.7	1.1	7.1 ^a	0.01 ^b	0.04
Presence of designated trails	1.2	1.4	4.9	0.03	0.02
Presence of scientific monitoring stations, radio towers, other installations and developments	0.1	0.4	5.3 ^a	0.02 ^b	0.02

^aAdjusted F-value using Welch's homogeneity correction

^bAdjusted p-value using Welch's homogeneity correction

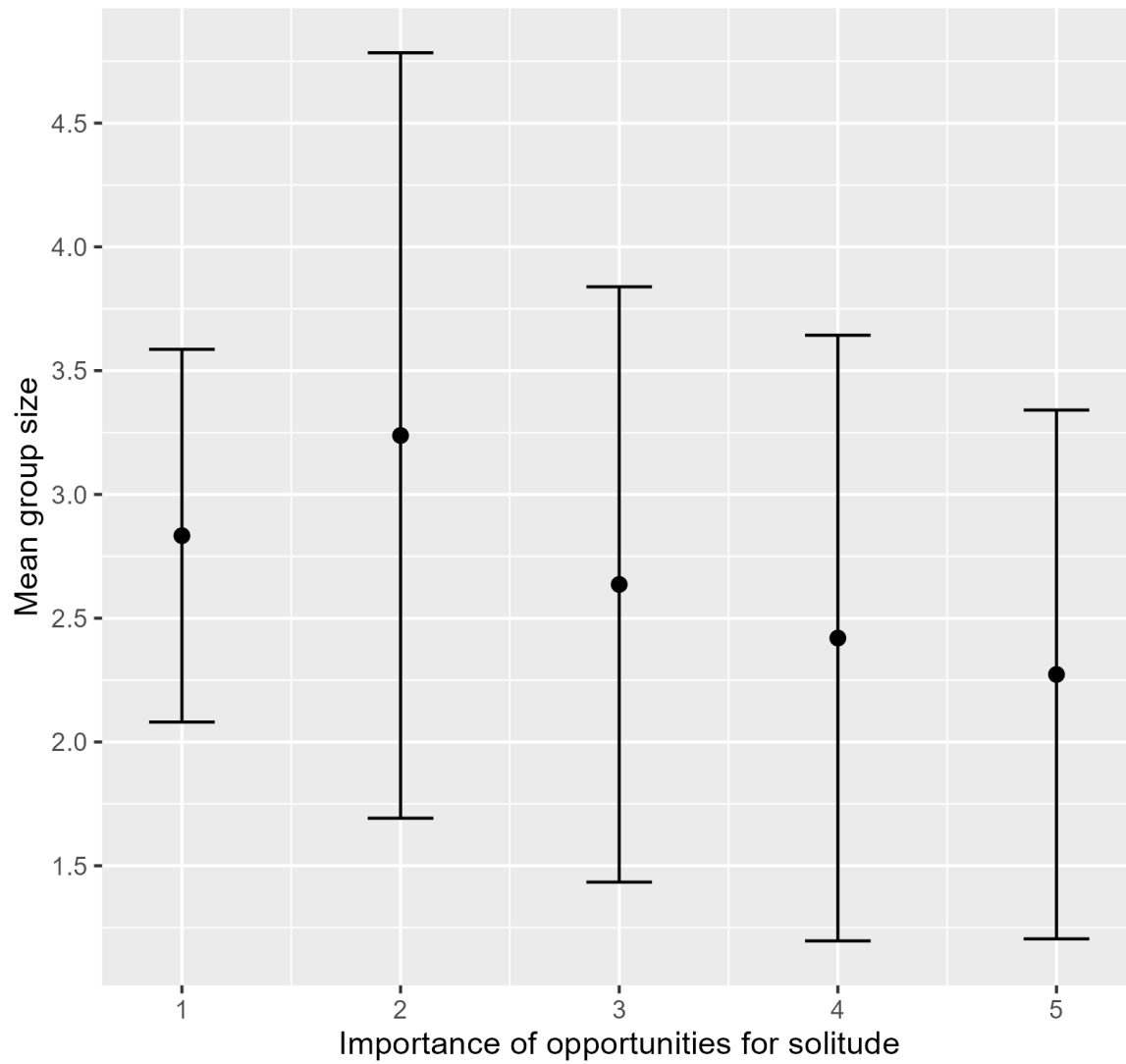
Exploring differences across group size and views on solitude and unconfined recreation

Respondents were asked to indicate the importance of opportunities for unconfined recreation, as well as solitude. Responses were coded where 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important, and 5=Extremely important.

Number of people

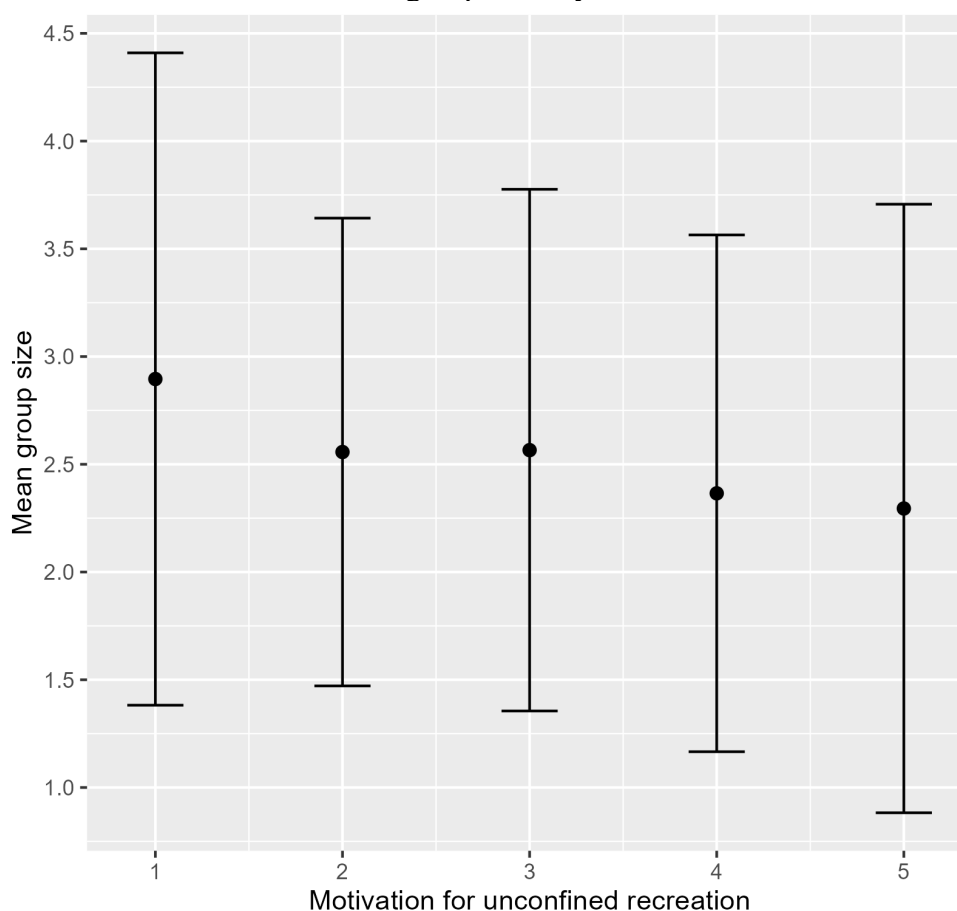
A 1-way ANOVA test found a significant difference between respondents' group size and their perceived importance of both opportunities for solitude ($t=-3.6$, $p < 0.001$, $r=-0.20$) and unconfined recreation ($t=-4.6$, $p < 0.001$, $r=-0.2$). In general, as group size decreased, respondents felt the importance of both solitude (Figure 4) and unconfined recreation (Figure 5) were more important.

Figure 4: Mean and standard deviation of group sizes by importance of opportunities for solitude



Notes: 1=Not at all important; 2=Slightly important; 3=Moderately important; 4=Very important; 5=Extremely important. Group sizes that were more than three times the interquartile range above the third quartile or below the first quartile were excluded from analysis for being extreme outliers (Vaske, 2008).

Figure 5: Mean and standard deviation of group sizes by motivation for unconfined recreation



1=Not at all true; 2=Slightly true; 3=Moderately true; 4=Very true; 5=Completely true

Exploring differences across recreation activities and travel zones

By understanding how primary activities might vary across travel zones within Everglades NP, it is possible to provide a snapshot of which primary activities may be more popular in which zones. Data analysis highlighted four travel zones where there was statistically significant difference⁴ in respondents' primary activities and the zones they visited. Each table below, with an accompanying short description, highlights the different characteristics of each travel zone.

Zone 1 (Table 20), with paddling/kayaking/canoeing, wildlife viewing, and concession tours as the top three activities is perhaps intuitive, as Zone 1 captures the Gulf Coast Visitor Center, where many day users depart on concession tours, take watercraft on day paddling trips, and view wildlife. Additionally, in support of the popularity of paddling/kayaking/canoeing, the Gulf Coast Visitor Center is a common start/end point for a multi-day water trail paddling trip.

⁴ T-tests were conducted to determine if there were significant differences. Significant differences were found for Zone 1 ($p=0.05$), Zone 3 ($p=0.2$), Zone 7 ($p < 0.01$), and Zone 8 ($p < 0.01$).

Table 20: Frequency and percentage of primary activities in Zone 1 (n=95)

Activity	Frequency (percentage)
Paddling/kayaking/canoeing	25 (26.3%)
Wildlife viewing	24 (25.3%)
Concession tour	20 (21.1%)
Recreational fishing	7 (7.4%)
Ground/beach camping	6 (6.3%)
NPS staff tour	6 (6.3%)
On-trail hiking	3 (3.2%)
Chickees	1 (1.1%)
Motorized boating	1 (1.1%)
Night sky viewing	1 (1.1%)

Note: One non-response was removed from this table

Zone 3 (Table 21), with recreational fishing and wildlife viewing as the top two activities, potentially highlights a group of visitors that commonly participate in a multi-day water trail paddling trip, or are accessing recreational fishing opportunities, perhaps via boats launched from multiple areas such as Flamingo Visitor Center, Gulf Coast Visitor Center, and Florida Bay.

Table 21: Frequency and percentage of primary activities in Zone 3 (n=60)

Activity	Frequency (percentage)
Recreational fishing	16 (26.7%)
Wildlife viewing	15 (25%)
Paddling/kayaking/canoeing	9 (15%)
On-trail hiking	9 (15%)
Ground/beach camping	5 (8.3%)
NPS staff tour	2 (3.3%)
Concession tour	2 (3.3%)
Boat camping	1 (1.7%)
Other	1 (1.7%)

Zone 7 (Table 22), while inclusive of a smaller number of visitors (n=36), does highlight a visitor use pattern whereby recreational fishing is the most popular activity, which may be due to the popularity of that activity in the Eastern Florida Bay.

Table 22: Frequency and percentage of primary activities in Zone 7 (n=36)

Activity	Frequency (percentage)
Recreational fishing	10 (27.8%)
On-trail hiking	9 (25%)
Paddling/kayaking/canoeing	5 (13.9%)
Wildlife viewing	5 (13.9%)
Ground/beach camping	3 (8.3%)
Motorized boating	1 (2.8%)
Concession tour	1 (2.8%)

Note: Two non-responses were removed from this table

Lastly, Zone 8 (Table 23), showed a significant difference in primary activities, and the zone is characterized likely by day users spending time hiking along the Anhinga Trail and viewing wildlife.

Table 23: Frequency and percentage of primary activities in Zone 8 (n=152)

Activity	Frequency (percentage)
Wildlife viewing	55 (36.2%)
On-trail hiking	45 (29.6%)
Paddling/kayaking/canoeing	23 (15.1%)
Ground/beach camping	10 (6.6%)
Recreational fishing	7 (4.6%)
Off-trail hiking	3 (2%)
NPS staff tour	3 (2%)
Chickees	1 (1%)
Concession tour	1 (1%)
Other	1 (1%)

Note: Three non-responses were removed from this table

Exploring differences across primary activity, travel zones, travel plans, and views on wilderness recreation and management

Primary activity and views of unconfined recreation and solitude

Analysis found a significant difference in primary activities and respondents' motivation for unconfined recreation (Table 24). Respondents whose primary activity was night sky viewing were more motivated to visit for unconfined recreation. Respondents whose primary activity was camping on chickees were the least motivated for unconfined recreation. Without more information from visitors, it is challenging to definitively explain these findings, but it is possible that those who are primarily participating in night sky viewing are more interested in unconfined recreation because they are overnight visitors seeking the freedom of unconfined recreation in the backcountry. Alternatively, night sky viewers may be faced with some constraints to their primary activity when trying to spend the night in areas where camping is prohibited (e.g., a road

pull-out far from any artificial light). With regard to primary activities and respondents' lower motivation for unconfined recreation, it is possible that those participating in chickee camping are conditioned to the need to plan ahead and follow the established rules and regulations for such overnight trips.

Table 24: 1-way ANOVA comparisons between primary activities and motivation for unconfined recreation

Primary activity	Mean response	F-value	p-value	Effect size (η^2)
Night sky viewing	4.8	10 ^a	< 0.01 ^b	0.04
Boat camping	3.7			
Other	3.6			
Ground/beach camping	3.4			
Recreational fishing	3.4			
Paddling/kayaking/canoeing	3.3			
Concession tour	3.1			
Wildlife viewing	3.1			
On-trail hiking	2.9			
Off-trail hiking	2.7			
NPS staff tour	2.5			
Motorized boating	2.2			
Chickees	2.1			

^aAdjusted F-value using Welch's homogeneity correction

^bAdjusted p-value using Welch's homogeneity correction

Analysis also found a significant difference in primary activities and respondents' motivation for solitude (Table 25). Again, without additional information from visitors, explaining the variation in the level of motivation for solitude and the primary activity is challenging. Further, the sample size of some primary activities requires caution when interpreting these results. However, the findings in Table 25 do highlight the potential importance of solitude for overnight visitors (e.g., boat camping, chickee camping, ground/beach camping), as well as the potential importance of day users participating in a concession tour and getting away from busy lives outside of the Everglades.

Table 25: 1-way ANOVA comparisons between primary activities and motivation for solitude

Primary activity	Mean response (n)	F-value	p-value	Effect size (η^2)
Boat camping	4.5 (4)	2.6	0.002	0.03
Chickees	4.3 (12)			
Concession tour	4.1 (91)			
Ground/beach camping	3.9 (80)			
Night sky viewing	3.9 (8)			
Paddling/kayaking/canoeing	3.9 (250)			
Recreational fishing	3.9 (135)			
Wildlife viewing	3.8 (315)			
On-trail hiking	3.7 (206)			
Off-trail hiking	3.4 (16)			
Other	3.4 (16)			
Motorized boating	3.0 (22)			
NPS staff tour	3.0 (24)			

Travel Zone visitation and views on solitude, unconfined, and primitive recreation

When considering responses to questions related to solitude, unconfined, and primitive recreation, analysis did find some variation in responses based on where visitors had traveled. While the practical differences between some of the differences (often around 0.5 on a five-point scale) are not generally large, the analysis does highlight areas where visitors may be recreating in Everglades NP and seeking recreation that is in alignment with designated wilderness.

For the question related to management actions that preserve or improve solitude, there were significant differences between respondents' visitation to zones 1 and 4 (Table 26).

Table 26: T-test comparisons between zone visitation and importance of management actions that preserve or improve solitude

preserve or improve fontade		
Zone	Mean	p-value
Zone 1		
Visited	3.5	0.01
Did not visit/no response	3.9	
Zone 4		
Visited	3.9	0.03
Did not visit/no response	3.6	

Note: Respondents were asked to indicate how important actions that preserve or improve solitude were for their acceptance of management actions (see "Visitors' Acceptance of Management Actions" section above). Responses were coded where 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important, and 5=Extremely important.

Those who visited zone 1 (inclusive of Gulf Coast Visitor Center) assigned a lower level of importance to actions that preserve solitude, whereas visitors to zone 4 (inclusive of the Flamingo Visitor Center) assigned a slightly higher level of importance to such management actions. While both zones of travel are departure points for commercial tours, as well as places that have active visitor centers, zone 4 is further into the park.

With regard to primitive recreation, the only related question that yielded differences in perspective across travel zones was about the importance of management actions that limit recreational facilities (Table 27). The findings highlight that visitors to zones 9 and 10 are generally more supportive of recreation facilities development, which is reasonable given both zones include accessible and more developed opportunities such as Shark Valley Visitor Center and the Anhinga Trail.

Table 27: T-test comparisons between zone visitation and importance of management actions that limit recreational facilities

Zone	Mean	p-value
Zone 9		
Visited	2.2	0.02
Did not visit/no response	2.7	
Zone 10		
Visited	1.5	0.02
Did not visit/no response	2.8	

Note: Respondents were asked to indicate how important actions that limit recreational facilities were for their acceptance of management actions (see “Visitors’ Acceptance of Management Actions” section above). Responses were coded where 1=Not at all important, 2=Slightly important, 3=Moderately important, 4=Very important, and 5=Extremely important.

Finally, for unconfined recreation, we highlight analysis of the question related to how important actions that preserve or improve recreation opportunities free from rules and regulations were for their acceptance of management actions (see “Visitors’ Acceptance of Management Actions” section above). Analysis found significant differences in visitation to zone 3; respondents who did not visit/did not respond had a mean response of 2.8, while respondents who did visit zone 3 had a mean response of 3.2 ($p=0.04$).

When combined with the analysis of respondents’ motivation for unconfined recreation and their travel patterns (Table 28), we see some evidence that visitors traveling to zone 3 were more interested in unconfined recreation, which captures those visitors likely getting further away from the roads and developed areas of Everglades NP. Alternatively, those visitors spending time in zone 8 – 10 appear less motivated by unconfined recreation, which perhaps highlights visitors spending more time in wilderness not far from developed areas.

Table 28: T-test comparisons between zone visitation and motivation for unconfined recreation

Zone	Mean	p-value
Zone 1		
Visited	3.0	0.05
Did not visit/no response	3.2	
Zone 3		
Visited	3.4	0.02
Did not visit/no response	3.1	
Zone 8		
Visited	3.0	< 0.01
Did not visit/no response	3.3	
Zone 9		
Visited	2.5	< 0.01
Did not visit/no response	3.2	
Zone 10		
Visited	2.3	0.03
Did not visit/no response	3.2	

Note: The unconfined recreation motivation latent variable was composed of three variables coded on a scale of 1=Not at all true, 2=Slightly true, 3=Moderately true, 4=Very true, and 5=Extremely true (see “Visitors’ motivation”). Results with significant differences are displayed below.

Travel plans and the importance of wilderness recreation

Analysis was performed to determine differences in travel plans and respondents’ motivation for unconfined recreation. Respondents who were more highly motivated by unconfined recreation more frequently focused their travel on visiting Wilderness compared to those who were less motivated (Table 29). Respondents who were least motivated by unconfined recreation more frequently reported visiting Everglades Wilderness while travelling to their primary destination.

Table 29: 1-way ANOVA comparisons between travel plans and motivation for unconfined recreation

Travel plan	Mean	F-value	p-value	Effect size (η^2)
Everglades National Park is my primary destination	3.4	6.5	< 0.01	0.02
Wilderness areas within Everglades National Park are my primary destination	3.4			
I am visiting this area before/after travelling to my primary destination outside the park	2.7			
Other	3.0			

Additionally, there were differences in travel plans and respondents' motivation for solitude (Table 30). Respondents who were more highly motivated by solitude more frequently focused their travel on visiting Wilderness compared to those who were less motivated.

Table 30: 1-way ANOVA comparisons between travel plans and motivation for solitude

Travel plan	Mean	F-value	p-value	Effect size (η^2)
Wilderness areas within Everglades National Park are my primary destination	4.0	9.7 ^a	< 0.001 ^b	0.03
Everglades National Park is my primary destination	3.8			
I am visiting this area before/after traveling to my primary destination outside the park	3.5			
Other	3.4			

^aAdjusted F-value using Welch's homogeneity correction

^bAdjusted p-value using Welch's homogeneity correction

Exploring differences across visitor demographics

The final connections within the data that we explored were related to demographics of participants, and their perspectives on various questions in the survey. Understanding potential variation among perspectives of visitors based on demographics may be valuable to wilderness stewardship given that research has shown disparate access to, and interest in, wilderness among groups with different demographics (Thomas et al., 2023).

Income and wilderness values and motivations

Analysis found a significant difference in responses between income levels for just one value: "spiritual inspiration" (Table 31). Overall, the higher the visitor's income, the less important this value was to them. However, the effect size of this difference was small ($\eta^2=0.03$).

Table 31: 1-way ANOVA comparisons between income levels and "Spiritual inspiration"

Income level	Mean	F-value	p-value	Effect size (η^2)
Less than \$50,000	3.7	2.4	0.047	0.03
\$50,000-\$99,999	3.6			
\$100,000-\$149,999	3.6			
\$150,000-\$199,999	3.3			
\$200,000 or more	3.0			

Regarding wilderness recreation, there was some variation in income level and motivation for solitude and unconfined recreation (Table 32). While the practical differences are somewhat small, there was a statistically significant difference showing that lower income visitors had a higher motivation for unconfined recreation and solitude.

Table 32: 1-way ANOVA comparisons between income levels and motivations for their visit

Motivation Domain	Income level	Mean response	F-value	p-value	Effect size (η^2)
Solitude	Less than \$49,999	4.1	4.1 ^a	0.003 ^b	0.01
	\$50,000-\$99,999	3.6			
	\$100,000-\$149,999	3.9			
	\$150,000-\$199,999	3.7			
	\$200,000 or more	3.8			
Unconfined	Less than \$49,999	3.5	3.6	0.006	0.02
	\$50,000-\$99,999	3.1			
	\$100,000-\$149,999	3.1			
	\$150,000-\$199,999	3.0			
	\$200,000 or more	3.0			

^aAdjusted F-value using Welch's homogeneity correction. ^bAdjusted p-value using Welch's homogeneity correction

Lastly, regarding income, analysis highlighted a significant difference between income levels and responses to one environmental condition: "Having visitor capacity (quota) for designated campsites" (Table 33). Visitors at either end of the income levels (i.e. less than \$50,000 and \$200,000 or more) more frequently indicated that these quotas added somewhat to their trip when compared to the remaining income levels; the effect size of this difference was also large ($\eta^2=0.11$). Research has shown that people with higher income are more able to make reservations far in advance (Rice et al., 2022), which may explain the response on the part of higher income visitors. One potential explanation for lower income support of visitor quotas would be, as highlighted just above, a motivation for greater solitude.

Table 33: 1-way ANOVA comparisons between income levels and responses to "Having visitor capacity (quota) for designated campsites"

Income level	Mean	F-value	p-value	Effect size (η^2)
Less than \$49,999	0.9	3.4	0.01	0.11
\$50,000-\$99,999	0.5			
\$100,000-\$149,999	0.5			
\$150,000-\$199,999	0.3			
\$200,000 or more	1.3			

Note: -2=detracted greatly; -1=detracted somewhat; 0=had no effect; 1=added somewhat; 2=added greatly.

Gender, age, and wilderness motivations

A t-test indicated a slight significant difference in respondents' gender and their valuation of managing for solitude. Respondents who identified as men had a mean response of 3.9 and respondents who identified as women had a mean response of 3.6 ($p=0.05$). Similarly, a t-test found a significant difference between men and women and the motivation for unconfined recreation (responses for "self-identify" and "prefer not to say" were excluded due to small sample size). The p-value was less than 0.01. The mean response for men was 3.3 and for women it was 2.9.

Finally, analysis indicated a significant difference in motivation for solitude and respondents' reported age. Solitude was a greater motivator for 18–24-year-olds. Motivation for solitude was lowest among 65+ year-olds.

Table 34: 1-way ANOVA comparisons between age and motivation for solitude

Age	Mean	F-value	p-value	Effect size (η^2)
18-24	4.0	4.1 ^a	0.003 ^b	0.01
25-44	3.9			
45-54	3.8			
55-64	3.8			
65+	3.5			

^aAdjusted F-value using Welch's homogeneity correction

^bAdjusted p-value using Welch's homogeneity correction

Management Implications

Wilderness stewardship planning is multifaceted, with a myriad of considerations for decision-making, including environmental conditions, policy mandates, managerial capacity, and social perspectives. The results from this survey, in addition to recent qualitative research focused on understanding the relationships of underrepresented communities with Everglades NP and MSD (Thomas et al., 2023), help inform an understanding of social perspectives of MSD wilderness and its management. In this section, we highlight several management implications, as derived from the above results for this visitor use survey.

The prominence of Everglades as a national park

On average, visitors placed relatively less importance on particular wilderness ideas (i.e., unconfined, primitive, and self-reliant recreation) when compared to ecosystem preservation and recreation enjoyment. This highlights the prominence of the national park ideal; while there was a fairly low level of knowledge among visitors about the concept of formally designated wilderness. Salient results from the survey within this context include the following:

- For most visitors (44%), Everglades NP was primary destination;
- On average, visitors were only 'slightly familiar' with designated wilderness concepts;
- Freedom from rules and regulations in the recreation context (i.e., unconfined recreation) was less salient overall (and relative to solitude) and;
- Facilities, signage, and recreation support (e.g., clearing trails) all, on average, added quality to the visitor experience.

These results suggest that, from the perspective of the visitor, emphasizing particular recreation amenities such as directional signage and recreation infrastructure would not degrade the wilderness recreational experience. However, considering potential degradation in wilderness character, through reduction in opportunities for primitive and unconfined recreation, within the context of wilderness stewardship planning is appropriate. Further, as managers approach the potential tradeoff between solitude and unconfined recreation, the findings suggest that EVER visitors, on average, would prioritize solitude. Confinement by-way-of campsite quotas, permits, and stay limits do not appear to detract, on average. Additionally, an appreciation for nature and

experiencing solitude are high motivations for visitors which can be enhanced through interpretation and monitoring crowding and certain behaviors in various areas of the wilderness. Lastly, the lack of knowledge around wilderness concepts highlights the potential opportunity for EVER managers to educate on wilderness concepts and, similarly, draw connections between characteristics of Everglades NP that are facilitated by wilderness designation (e.g., limited roads).

The importance of a targeted approach to communicating with and supporting visitors interested in wilderness recreation

An aggregate view of the survey data highlights a visitor population focused on Everglades as a national park, with general support for developed recreation opportunities, limited awareness and focus on wilderness, and relatively less motivation for unconfined recreation. However, exploring potential connections and variations in the data, wilderness focused visitors begin to emerge. For instance, there was a relationship between age and motivation for solitude (with younger people being slightly more motivated by solitude), a relationship between the importance of management actions focused on solitude and travel to zone 4, and a slightly higher motivation for unconfined recreation (and unconfined focus management actions) for visitors to zone 3. Day users placed a higher level of importance on unconfined recreation, and smaller groups tended to prioritize both solitude and unconfined recreation. Given these findings, there may be an opportunity for wilderness stewardship planners in Everglades NP to target management actions (and associated communications) toward specific visitors, whether that be based on group size, primary activity, travel zones, and/or demographics.

Visitors prioritize naturalness over wildness and untrammelled

The survey results indicate that EVER visitors are more concerned with protecting natural processes and ecosystems than limiting human intervention and management of the ecosystems (i.e., untrammelled). Thus, rationale for visitor use management based on resource protection may resonate. This suggestion is supported by the following findings:

- On average, the top three most important wilderness values were “protecting wildlife habitat,” “preserving unique and wild plants and animals,” and “protecting water quality”;
- On average, nature appreciation was the most important motivation for peoples’ trips;
- On average, with regard to management actions, “actions that limit or reduces human manipulation of the ecosystem” was less important than “actions that preserve or improve natural environmental conditions” and “actions that implement rules and regulations that protect natural and cultural resources”;
- For around 90% of respondents, the “presence of scientific monitoring stations, radio towers, other installations and developments” either had “no impact,” “added somewhat,” or “added greatly” to peoples’ experience.

While research of perceptions of the naturalness versus wildness tradeoff within the wilderness context are limited, there are two notable studies that reinforce visitor perceptions that prioritize natural ecosystems over human intervention within those systems. For instance, Thomas et al. (In Press) found that members of underrepresented communities around EVER viewed the goal of

limited human intervention (i.e., untrammelled) to be a futile effort globally due to climate change, as well as in south Florida due to the high level of development and previous ecosystem manipulation. Also, Davidson and Hall (2013) found visitors to be more concerned about maintaining naturalness than wildness within a study in the Bridger Wilderness (WY).

For wilderness stewardship planning, these findings highlight an opportunity to prioritize naturalness within the wilderness context with perhaps limited contention among visitors to EVER. However, these findings do not provide knowledge around the contentious nature of trammeling actions among non-visitors (e.g., the advocacy group ‘Wilderness Watch’ may still oppose potential trammeling actions).

Communicating with visitors through the NPS website

The vast majority of visitors (79%) get their information from the NPS website, which highlights the potential value of ensuring that the NPS website is adequate and effective prior to investing in other communication channels. Related to communication, our results suggest that EVER wilderness visitors tend to prefer actions based on science rather than economic outcomes.

Supporting inexperienced visitors with opportunities to learn basic outdoor skills

About 31% of visitors reported experiencing barriers that prevent them from visiting EVER more often. The majority of constraints reported, including the most frequent barrier (i.e., the distance between their home and EVER), are generally out of control of EVER wilderness managers. However, particularly for those visitors living within one hour of the park, there may be opportunities to focus on increasing accessibility and awareness of programs to the park. Additionally, some visitors mentioned the desire to be connected with groups that can teach them basic outdoor skills. When considering the entire population of EVER visitors, providing opportunities to connect with groups that can teach basic outdoor skills may facilitate improved access to EVER, particularly among inexperienced visitors. Among underrepresented communities, Thomas et al. (In Press) also found a desire for increased opportunities to connect with affinity groups focused on outdoor recreation.

Limitations and Future Directions

In the methodology of this study, visitors were selected at random independent of their participation in commercial services. While this approach provided a diverse visitor sample, it does not allow for comparison between visitors who participated in commercial services and visitors who did not. To address this gap, targeted sampling of visitors engaging in commercial services could be implemented in subsequent studies. By specifically recruiting from visitors who have utilized commercial services will allow for comparative analyses on visitor behavior and experiences.

The visitor sample is limited in representation of off-trail behavior, thus inference on off-trail behavior cannot be drawn. In order to assess the types of off-trail behavior and type of visitor engaging in them, larger sample size would be required in future.

The current survey results lack reference points regarding backcountry permits. By analyzing visitor surveys alongside the number of backcountry permits issued, park management can gain

comprehensive understanding of visitor engagement. This analysis could include whether visitors utilized the entirety of their permit period, providing valuable insight on management.

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Appendix A: Survey instrument

MARJORY STONEMAN DOUGLAS WILDERNESS AND OTHER EVERGLADES WILDERNESS AREAS

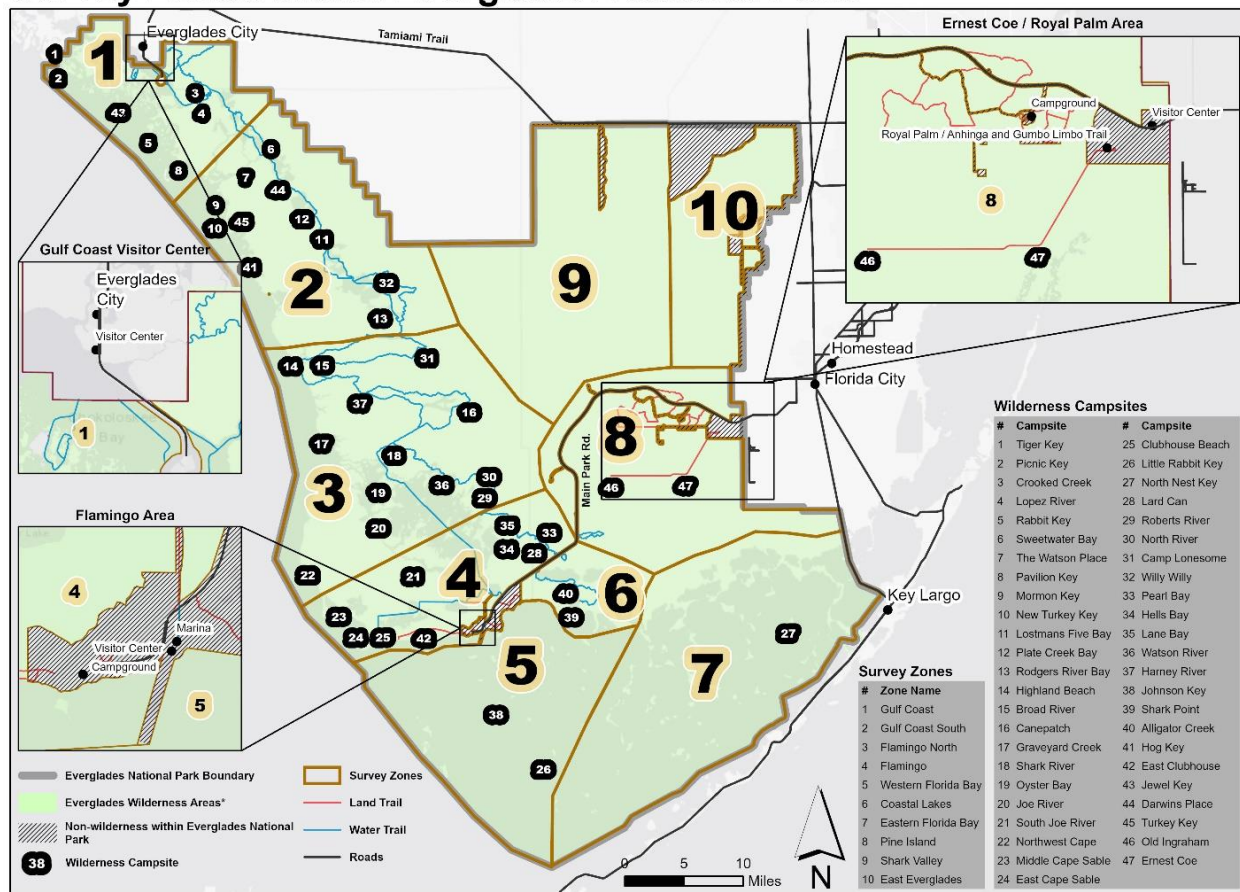
VISITOR SURVEY



PAPERWORK REDUCTION and PRIVACY ACT STATEMENT: The Paperwork Reduction Act requires us to tell you why we are collecting this information, how we will use it, and whether or not you have to respond. We are authorized by the National Park Service Protection Interpretation and research in System (54 USC §100702) to collect this information. The routine uses of this information will be for the benefit of NPS Managers and Planning staff in Everglades National Park related to the visitor use and resource management within its Wilderness areas. The data collected will be summarized to evaluate visitor uses, motivations, and values relate to Wilderness. Your responses to this collection are completely voluntary and will remain anonymous. You can end the process at any time and will not be penalized in any way for choosing to do so. All contact information collected for the purpose of the follow-up survey will be destroyed at the end of the collection period and no personal identifiable records will be maintained or stored for any purposes. Data collected will only be reported in aggregates and no individually identifiable responses will be reported. A Federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB Control Number (1024-0224).

BURDEN ESTIMATE STATEMENT: We estimate that it will take about 18 minutes to complete this questionnaire. You may send comments concerning the burden estimates or any aspect of this information collection to: Dr. Jennifer Thomsen, Associate Professor, 32 Campus Drive, Missoula, Montana, 59812; 862-216-3035 (phone) jennifer.thomsen@umontana.edu; or Phadrea Ponds NPS Information Collection Clearance Officer at pponds@nps.gov (email).

Survey Zones within Everglades National Park



*Includes all designated, submerged, proposed, proposed potential, potential, and unassessed wilderness areas

Credits: University of South Florida, County of Collier, Esri, HERE, Garmin, USGS, EPA, NPS, University of South Florida, Esri, HERE, Garmin, USGS, EPA, NPS, Miami-Dade County, Esri, HERE, Garmin, USGS, EPA, NPS, Esri, HERE, Garmin, USGS, EPA, NPS

1. **Using the map, please indicate what zone(s) you recreated in during your trip so far.
(select all that apply)**

- | | |
|---------------------------------|----------------------------------|
| ☐ Zone 1 | ☐ Zone 6 |
| ☐ Zone 2 | ☐ Zone 7 |
| ☐ Zone 3 | ☐ Zone 8 |
| ☐ Zone 4 | ☐ Zone 9 |
| ☐ Zone 5 | ☐ Zone 10 |

2. **Before taking this survey, were you aware that you were recreating within the boundaries of a Wilderness area during this trip?**

- ☐ Yes
☐ No

3. **Which of the following best describes how your visit fits into your travel plans?**

- ☐ Wilderness areas within Everglades National Park are my primary destination.
☐ Everglades National Park is my primary destination.
☐ I am visiting this area before/after traveling to my primary destination outside the park.
☐ Other (please explain _____)

4. **Prior to this trip, how many times had you visited Everglades Wilderness areas?**

_____number of previous visits

5. **Where did you (or your personal group) stay on the night before your arrival to Everglades Wilderness areas?**

Town/city/campground/park lodging _____

6. **How many nights did you spend in Everglades Wilderness areas on this trip?**

_____number of nights

7. **How many people were in your group, including you?**

_____number of people

8. **Which one of the following best describes the group you are traveling with?**

- | | |
|---|---|
| ☐ Myself (alone) | ☐ Commercial guided tour group |
| ☐ Myself with family | ☐ Myself with friends |
| ☐ Club/organization/school | ☐ Other organized group (e.g., business group) |
| ☐ Myself with family and friends | ☐ Other (specify_____) |

9. **In what language do you and members of your personal group prefer to get your information about Everglades Wilderness areas?**

- ☐ English ☐ Spanish
☐ Other (Specify)_____

10. Prior to your arrival, what sources of information did you and your group use to plan your trip? (select all that apply)

- | | |
|---|---|
| ☐ Everglades National Park website (at NPS.gov) | ☐ High resolution maps |
| ☐ Everglades National Park social media accounts | ☐ Other social media accounts (specify_____) |
| ☐ Recreation.gov | ☐ National Park Service brochures |
| ☐ Other websites (specify_____) | ☐ National Park Service staff or volunteers |
| ☐ Friends/relatives/word of mouth | ☐ Commercial guide/concessionaire |
| ☐ Previous experiences | ☐ Other (specify_____) |
| ☐ Wilderness.net website | |

11. Below is a list of activities available in Everglades Wilderness areas. Please indicate:

1. which one of these activities was your primary activity during this visit

2. which of these activities have you participated in during this visit

	(A) Primary activity (Check <u>only</u> one)	(B) Participated in (Check all that apply)
Recreational fishing	☐	☐
Camping on platforms (chickees)	☐	☐
Camping on ground sites/beach sites	☐	☐
Camping on a boat	☐	☐
Motorized boating	☐	☐
Sailing	☐	☐
Paddling/Kayaking/Canoeing	☐	☐
Snorkeling/Diving	☐	☐
On-trail hiking	☐	☐
Off-trail hiking (slogging)	☐	☐
NPS-staff-led tour	☐	☐
Night sky viewing	☐	☐
Concession-operated tour	☐	☐
Wildlife viewing	☐	☐
Other (specify):	☐	☐
Other (specify):	☐	☐
Other (specify):	☐	☐

12. Please indicate your level of agreement or disagreement with each of the statements. (select one answer for each statement)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am very attached to this place.	(1)	(2)	(3)	(4)	(5)
This place is very special to me.	(1)	(2)	(3)	(4)	(5)
I identify strongly with this place.	(1)	(2)	(3)	(4)	(5)
This is the best place for the activities I like to do.	(1)	(2)	(3)	(4)	(5)
No other place can compare to this place.	(1)	(2)	(3)	(4)	(5)
I wouldn't substitute any other place for the recreation activities I do in this place.	(1)	(2)	(3)	(4)	(5)
This place plays a central role in my lifestyle.	(1)	(2)	(3)	(4)	(5)
One of the major reasons I now live where I do is that this place is nearby.	(1)	(2)	(3)	(4)	(5)
Because of my lifestyle, this place is important to me.	(1)	(2)	(3)	(4)	(5)

13. Prior to this trip, **how familiar were you** with designated Wilderness? Please indicate your level of familiarity with each statement. *(select one answer for each statement)*

	Not at all familiar	Slightly familiar	Moderately familiar	Very familiar
The Wilderness Act of 1964 defined the concept of Wilderness and established the National Wilderness Preservation System.	(1)	(2)	(3)	(4)
The primary mandate of the Wilderness Act of 1964 is to preserve wilderness character.	(1)	(2)	(3)	(4)
The Wilderness Act prohibits the following uses by the public: motor vehicles, motorized equipment or motorboats, landing of aircraft, and other forms of mechanical transport (e.g. bicycles, canoe dollies)	(1)	(2)	(3)	(4)
The majority of Everglades National Park is designated as the Marjory Stoneman Douglas Wilderness Area	(1)	(2)	(3)	(4)
The majority of submerged lands in marine areas of Everglades National Park are designated as Wilderness	(1)	(2)	(3)	(4)
The location of the boundaries of Marjory Stoneman Douglas Wilderness Area	(1)	(2)	(3)	(4)

14. Please indicate the importance of each wilderness value to you. *(select one answer for each statement)*

Statements	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Protecting water quality	(1)	(2)	(3)	(4)	(5)
Knowing that future generations will have wilderness areas	(1)	(2)	(3)	(4)	(5)
Providing spiritual inspiration	(1)	(2)	(3)	(4)	(5)
Preserving natural areas for scientific study	(1)	(2)	(3)	(4)	(5)
Protecting wildlife habitat	(1)	(2)	(3)	(4)	(5)
Preserving unique wild plants and animals	(1)	(2)	(3)	(4)	(5)
Protecting air quality	(1)	(2)	(3)	(4)	(5)
Supporting my personal or family's economic livelihood	(1)	(2)	(3)	(4)	(5)
Providing scenic beauty	(1)	(2)	(3)	(4)	(5)
Providing opportunities for solitude	(1)	(2)	(3)	(4)	(5)
Just knowing that wilderness areas exist	(1)	(2)	(3)	(4)	(5)
Preserving an undeveloped landscape	(1)	(2)	(3)	(4)	(5)
Providing opportunities for primitive forms of recreation (e.g., canoeing, stock use)	(1)	(2)	(3)	(4)	(5)
Providing opportunities for unconfined recreation (freedom to explore with minimum human restraints)	(1)	(2)	(3)	(4)	(5)
Other (please specify) _____	(1)	(2)	(3)	(4)	(5)
Other (please specify) _____	(1)	(2)	(3)	(4)	(5)
Other (please specify) _____	(1)	(2)	(3)	(4)	(5)

15. Please rate how true the following statements are according to your trip in Everglades Wilderness areas. (select one answer for each statement)

During my trip to the Everglades Wilderness areas, I was motivated to...	Not at all True	Slightly True	Moderately True	Very True	Completely True	Not Applicable
...gain a greater sense of self-confidence through challenge.	(1)	(2)	(3)	(4)	(5)	(NA)
...improve my outdoor recreation skills.	(1)	(2)	(3)	(4)	(5)	(NA)
...grow and develop spiritually.	(1)	(2)	(3)	(4)	(5)	(NA)
...support my mental well-being	(1)	(2)	(3)	(4)	(5)	(NA)
...support my physical health and fitness.	(1)	(2)	(3)	(4)	(5)	(NA)
...gain a more holistic sense of wellness.	(1)	(2)	(3)	(4)	(5)	(NA)
...strengthen family or social bonds.	(1)	(2)	(3)	(4)	(5)	(NA)
...be with people who share similar values.	(1)	(2)	(3)	(4)	(5)	(NA)
...increase my sense of belonging with others.	(1)	(2)	(3)	(4)	(5)	(NA)
...enjoy the sounds of nature.	(1)	(2)	(3)	(4)	(5)	(NA)
...view dark night skies.	(1)	(2)	(3)	(4)	(5)	(NA)
...get to know the environment.	(1)	(2)	(3)	(4)	(5)	(NA)
...cultivate a closer relationship with the natural world.	(1)	(2)	(3)	(4)	(5)	(NA)
...to experience life without everyday technologies	(1)	(2)	(3)	(4)	(5)	(NA)
...to be in an environment mostly free of human-made intrusions	(1)	(2)	(3)	(4)	(5)	(NA)
...be away from crowds of people.	(1)	(2)	(3)	(4)	(5)	(NA)
...to think about who I am.	(1)	(2)	(3)	(4)	(5)	(NA)
...experience minimal rules.	(1)	(2)	(3)	(4)	(5)	(NA)
...roam wherever I want.	(1)	(2)	(3)	(4)	(5)	(NA)
...make my own plans.	(1)	(2)	(3)	(4)	(5)	(NA)
...gain a new experience.	(1)	(2)	(3)	(4)	(5)	(NA)

16. How did the following conditions you may have experienced ADD or DETRACT from your experience in Everglades Wilderness areas? (select one answer for each statement)

Conditions	Detracted greatly	Detracted somewhat	Had no effect	Added somewhat	Added greatly	Did not experience
Bare or eroding soil	(1)	(2)	(3)	(4)	(5)	(NA)
Trash and vandalism	(1)	(2)	(3)	(4)	(5)	(NA)
Presence of non-native or invasive species	(1)	(2)	(3)	(4)	(5)	(NA)
Light pollution	(1)	(2)	(3)	(4)	(5)	(NA)
Water quality	(1)	(2)	(3)	(4)	(5)	(NA)
Air quality	(1)	(2)	(3)	(4)	(5)	(NA)
Impacts from climate change (e.g., campsite flooding)	(1)	(2)	(3)	(4)	(5)	(NA)
Hearing and seeing other people <u>on the trail</u>	(1)	(2)	(3)	(4)	(5)	(NA)
Hearing and seeing other people <u>while camping</u>	(1)	(2)	(3)	(4)	(5)	(NA)
Absence of internet connectivity	(1)	(2)	(3)	(4)	(5)	(NA)
<u>Campsite</u> vegetation trimmed or cleared by staff	(1)	(2)	(3)	(4)	(5)	(NA)
<u>Trail</u> vegetation trimmed or cleared by staff	(1)	(2)	(3)	(4)	(5)	(NA)
Needing to get a permit to camp in designated wilderness campsites	(1)	(2)	(3)	(4)	(5)	(NA)
Having a length of stay limit (# of nights) for designated campsites	(1)	(2)	(3)	(4)	(5)	(NA)
Having a visitor capacity (quota) for designated campsites	(1)	(2)	(3)	(4)	(5)	(NA)
Presence of designated trails	(1)	(2)	(3)	(4)	(5)	(NA)
Noise from motorized use (motorboats, helicopters, generators)	(1)	(2)	(3)	(4)	(5)	(NA)
Seeing motorized vehicles / equipment (motorboats, helicopters, generators)	(1)	(2)	(3)	(4)	(5)	(NA)
Presence of camping platforms, toilets, picnic tables, docks, other recreation facilities	(1)	(2)	(3)	(4)	(5)	(NA)
Presence of scientific monitoring stations, radio towers, other installations and developments	(1)	(2)	(3)	(4)	(5)	(NA)
Presence of directional/navigational markers	(1)	(2)	(3)	(4)	(5)	(NA)

17. Please **rate the quality** of services you received or the facilities you utilized during your visit. (select one answer for each statement)

Services	Very Poor	Poor	Average	Good	Very Good	Did Not Use
Booking a wilderness camping permit on Recreation.gov	(1)	(2)	(3)	(4)	(5)	(NA)
Obtaining a wilderness camping permit in person	(1)	(2)	(3)	(4)	(5)	(NA)
Completing the boater education course	(1)	(2)	(3)	(4)	(5)	(NA)
Condition of trails	(1)	(2)	(3)	(4)	(5)	(NA)
Navigational signage and trail markers	(1)	(2)	(3)	(4)	(5)	(NA)
Toilet facilities	(1)	(2)	(3)	(4)	(5)	(NA)
Chickees (covered platforms for camping)	(1)	(2)	(3)	(4)	(5)	(NA)
Ground or Beach campsites	(1)	(2)	(3)	(4)	(5)	(NA)
Wilderness information at trailheads	(1)	(2)	(3)	(4)	(5)	(NA)
Wilderness information at visitor centers	(1)	(2)	(3)	(4)	(5)	(NA)
Wilderness information online	(1)	(2)	(3)	(4)	(5)	(NA)
Commercial services (e.g., guided boat tour, equipment rental, fishing guide)	(1)	(2)	(3)	(4)	(5)	(NA)

18. Do you experience any barriers in your life that keep you from spending more time in Everglades Wilderness Areas?

☐ No

☐ Yes

→ Please describe in the space below:

19. Please rate how important each statement is for your acceptance of management actions within Everglades Wilderness areas (select one answer for each statement)

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Actions that limit or reduces human manipulation of the ecosystem.	(1)	(2)	(3)	(4)	(5)
Actions that are based on science.	(1)	(2)	(3)	(4)	(5)
Actions that are based on economic consequences.	(1)	(2)	(3)	(4)	(5)
Actions that preserve or improve natural environmental conditions.	(1)	(2)	(3)	(4)	(5)
Actions that implement rules and regulations that protect natural and cultural resources	(1)	(2)	(3)	(4)	(5)
Actions that preserve or improve opportunities for solitude.	(1)	(2)	(3)	(4)	(5)
Actions that preserve or improve access to primitive recreation opportunities.	(1)	(2)	(3)	(4)	(5)
Actions that preserve or improve recreation opportunities free from rules and regulations.	(1)	(2)	(3)	(4)	(5)
Actions that protect natural resources over human use.	(1)	(2)	(3)	(4)	(5)
Actions that lessen the impact of climate change on the <u>visitor experience</u> .	(1)	(2)	(3)	(4)	(5)
Actions that lessen the impact of climate change on <u>the environment</u> .	(1)	(2)	(3)	(4)	(5)
Actions that limit administrative structures and installations (e.g., roads, radio repeater towers, research monitoring stations, etc.).	(1)	(2)	(3)	(4)	(5)
Actions that limit recreational facilities (campsites, camping platforms, trails, signs, etc.)	(1)	(2)	(3)	(4)	(5)
Actions that are inclusive of diverse cultures, peoples, and perspectives.	(1)	(2)	(3)	(4)	(5)

DEMOGRAPHICS

20. Your gender:

- ☐ Male
- ☐ Female
- ☐ Self-identify as _____
- ☐ Prefer not to respond

21. **What is your age?**
☐ 18-24 ☐ 55-64
☐ 25-44 ☐ 65+
☐ 45-54
22. **Do you primarily reside in the United States?**
☐ Yes – what is your ZIP code: _____
☐ No – what is your country of residence? _____
23. **Are you Hispanic or Latino?**
☐ Yes
☐ No
24. **Please indicate which ethnic / racial group you most closely identify with: (*select all that apply*)**
☐ American Indian or Alaskan native ☐ Native Hawaiian / Pacific Islander
☐ Asian ☐ White
☐ Black or African American
25. **Which category best represents your annual household income (before taxes) last year?**
☐ Less than \$49,999 ☐ \$100,000 to \$149,999
☐ \$50,000 to \$99,999 ☐ \$150,000 to \$199,999
☐ \$200,000 or more
26. **Do you have any recommendations for planning or managing Everglades Wilderness Areas? If so, please explain in the space below:**

THANK YOU FOR YOUR COOPERATION!
