



Florida Keys National Marine Sanctuary

Visitor Use Management

Overview



- Need for Action
- Definitions
- Visitor Use Management Framework
- Case study

Need for Action

- Visitor use management is critical to regulate environmental and social impacts caused and experienced by visitors



Need for Action



- 5.5 million visitors
- Increasing visitor populations and recreational use threaten sanctuary resource conditions
- Visitors who encounter more people, boats, and impacts to resource conditions than their norms are less satisfied and less likely to visit again
- Impact on enjoyment is significantly correlated with group size
- Overcrowding reduces the “wilderness experience”



Frameworks seek to balance visitor use with resource protection



- **Carrying Capacity:** amount of visitor-related use an area can support while maintaining a sustained quality of recreation, based on ecological, social, physical, and management conditions
 - Evolved to recognize social impacts of increasing visitor use including crowding and conflict
- **Limits of Acceptable Change** asks:
 - How much change to resource conditions or visitor experience is too much?
 - What level/amount of change can occur before management action is needed?

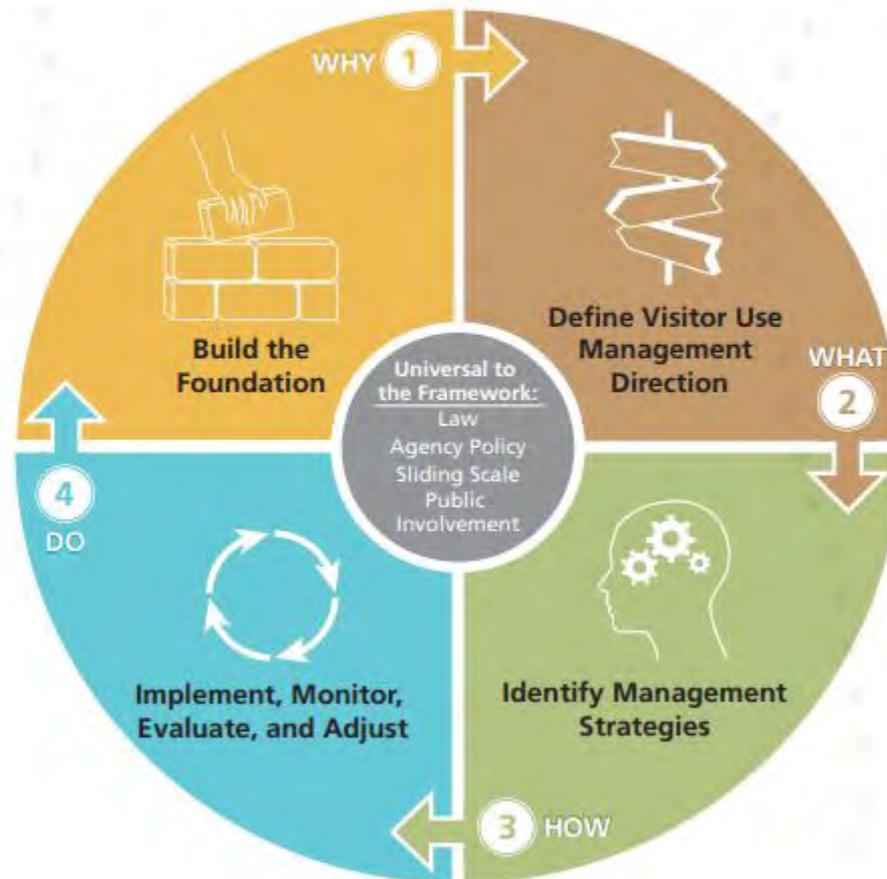
Frameworks seek to balance visitor use with resource protection



- **Interagency Visitor Use Management Framework** combines elements from multiple carrying capacity-based approaches
 - Provides consistent guidance for managing visitor use on federally managed lands and waters
 - Vetted by USFWS, NPS, BLM, USACE, USFS, and NOAA
 - Used by Everglades and Dry Tortugas National Parks

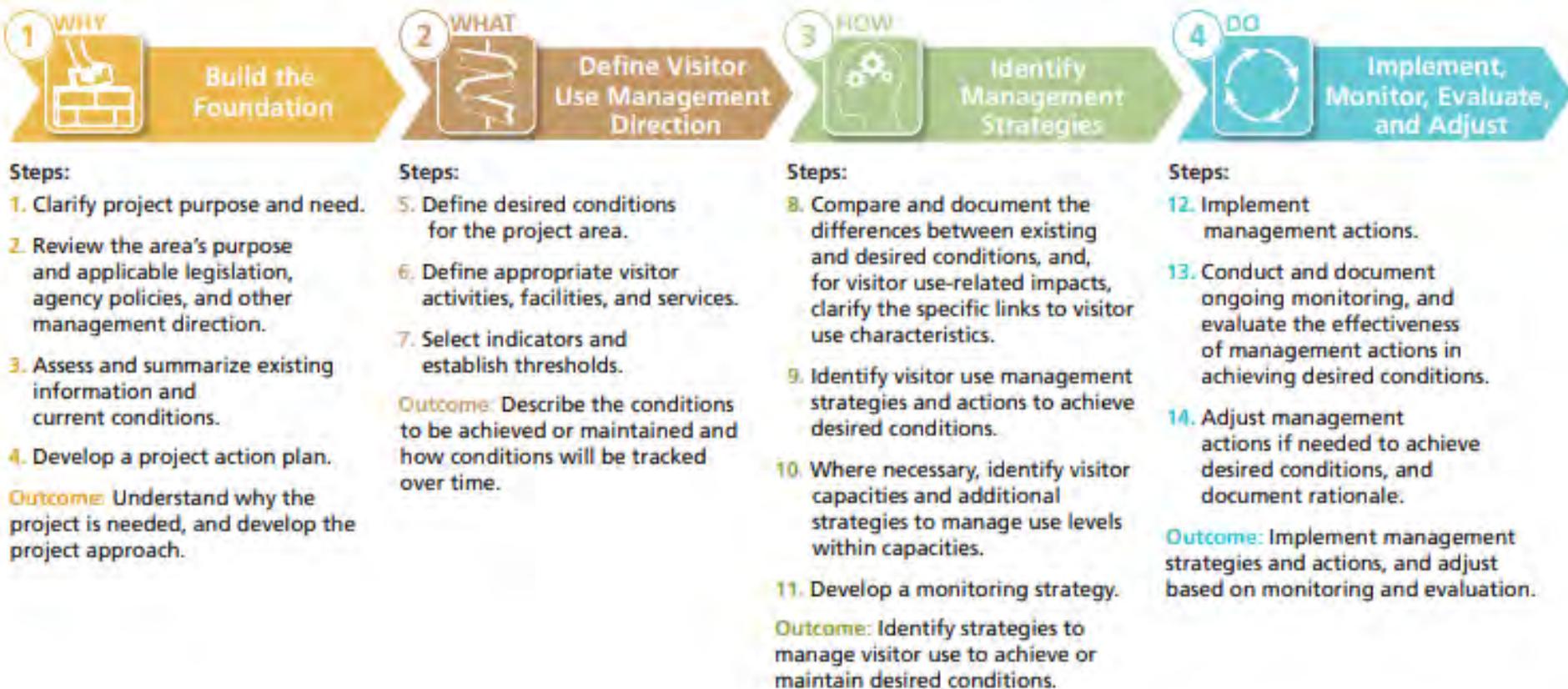
Visitor Use Management Framework

Overview of the Visitor Use Management Framework



Visitor Use Management Framework

Figure 2. Elements and steps of the Visitor Use Management Framework.



Visitor Use Management Framework



Sliding Scale of Analysis

- Used in each element of the framework
- Seeks to match resource investment with the level of uncertainty and risk associated with the issues being addressed
- Helps determine the amount of effort needed for each element and step



Stage 1: Build the Foundation



Step 1- Clarify the project purpose and need

Consider these questions:

- What management challenges/issues does visitor use create?
- What are the visitor use management objectives?

Stage 1: Build the Foundation



Step 2: Review the area's purpose and applicable legislation, agency policies, and other management direction

For Example:

- National Marine Sanctuaries Act
- Florida Keys National Marine Sanctuary and Protection Act
- Florida Keys Revised 2007 Management Plan
- Marine Zoning and Regulatory Review Goals and Objectives
- Updated draft Management Plan

Stage 1: Build the Foundation



Step 3- Assess and summarize existing information and current conditions

Current Conditions:

- 2011 Sanctuary Condition Report
- Integrated Ecosystem Assessment
- Restoration Blueprint
- Mission Iconic Reef
- Damage Assessment reports
- Aerial Overflight Visitor Use Surveys
- Visitor use impact studies (divers impacts on coral, boater impact study)

Existing Strategies:

- Mooring Buoys
- Blue Star programs
- Boater Education
- Activity specific permits (e.g lionfish, research, etc)

Stage 2: Define Visitor Use Management Direction



Step 5- Define desired conditions for the project area

What does success look like in terms of resource conditions, visitor experiences and opportunities, and services to be maintained in a particular area?



Stage 2: Define Visitor Use Management Direction



Step 6- Define appropriate visitor activities, facilities, and services

- What visitor activities, facilities, and services are consistent with the desired conditions?
- **For Example:**
 - Activities:
 - Snorkeling/Diving
 - Fishing
 - Research
 - Facilities:
 - Mooring buoys
 - Shipwreck trail

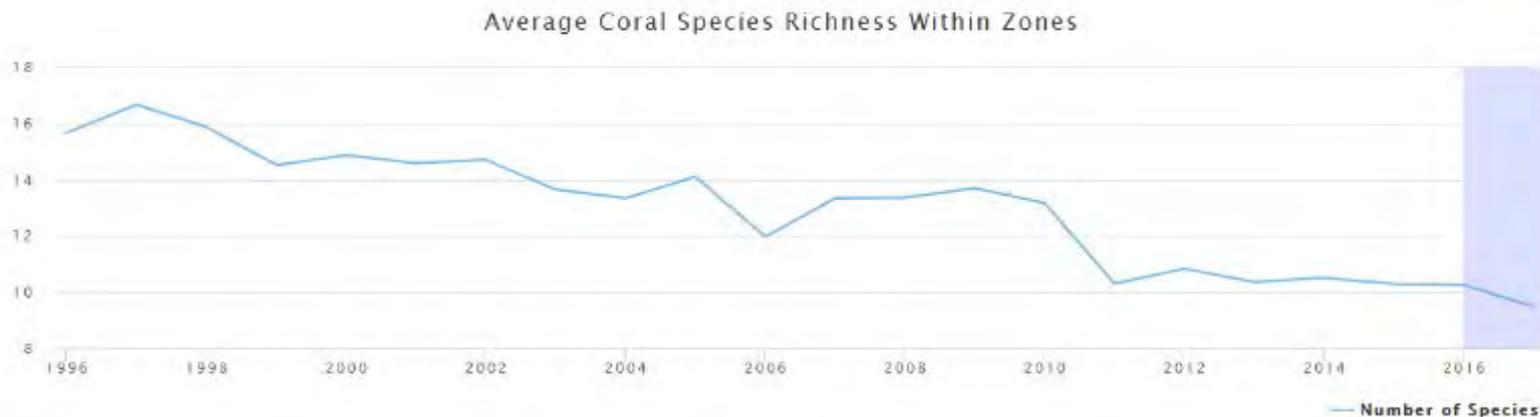
Stage 2: Define Visitor Use Management Direction



Step 7- Select indicators and establish thresholds

This Step:

- Determines acceptable levels of impact from visitor use
- Requires identifying monitoring indicators and establishing indicator thresholds
- Provides transparency to the public about management decisions



Stage 3: Identify Management Strategies



Step 8- Document the differences between existing and desired conditions, and clarify the specific links to visitor use characteristics (*amount, type, timing, and distribution of visitor use, activities, and behaviors*)

This step:

- Assesses conditions and visitor-related impacts to understand how to manage visitor use to achieve desired conditions
- Examines the gap between existing and desired conditions

Stage 3: Identify Management Strategies



Step 9- Identify visitor use management strategies and actions to achieve desired conditions

- **Site management or engineering actions**
 - area closures, temporal closures, mooring buoy installation, and parking lot design
- **Information and education interventions**
 - interpretive signage, educational videos, responsible operator certification, orientations or briefings, stewardship pledges, and positive redirection to less crowded sites
- **Regulation and enforcement changes**
 - admission fees, visitor permits, parking fees, timed entry, requirement of reef safe sunscreen, prohibition of gloves while diving or snorkeling, peer reporting, dive marshals, and anchor restrictions

Stage 4: Implement, Monitor, Evaluate & Adjust

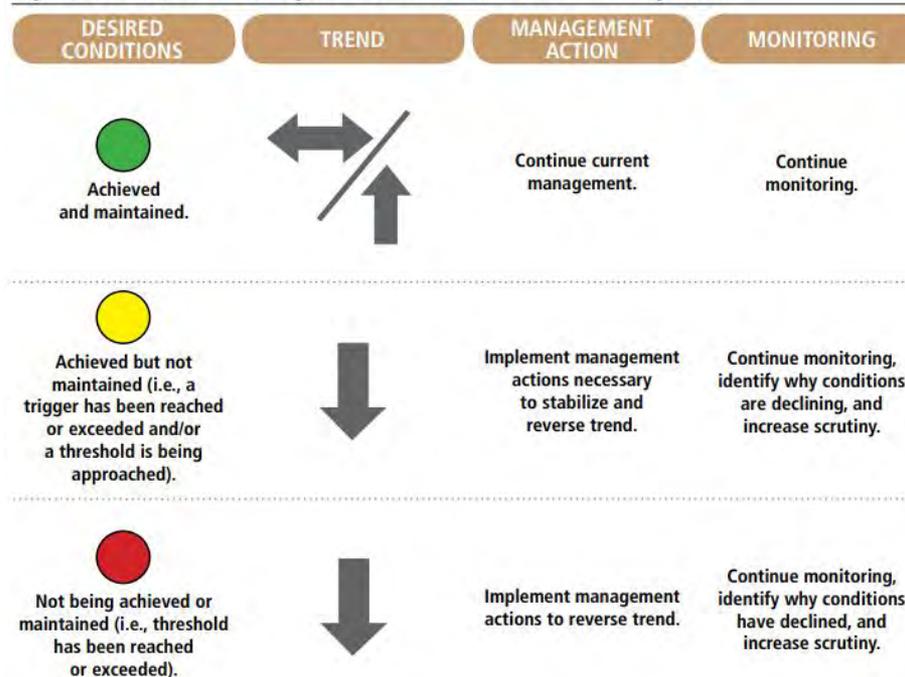


Step 12- Implement management actions

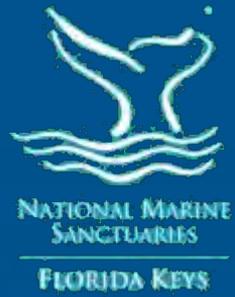
Step 13- Monitor conditions & evaluate efficacy of actions

Step 14- Adjust management actions to achieve desired conditions & document rationale

Figure 7. Use of monitoring data to inform visitor use management.



Molokini Shoals Marine Life Conservation District



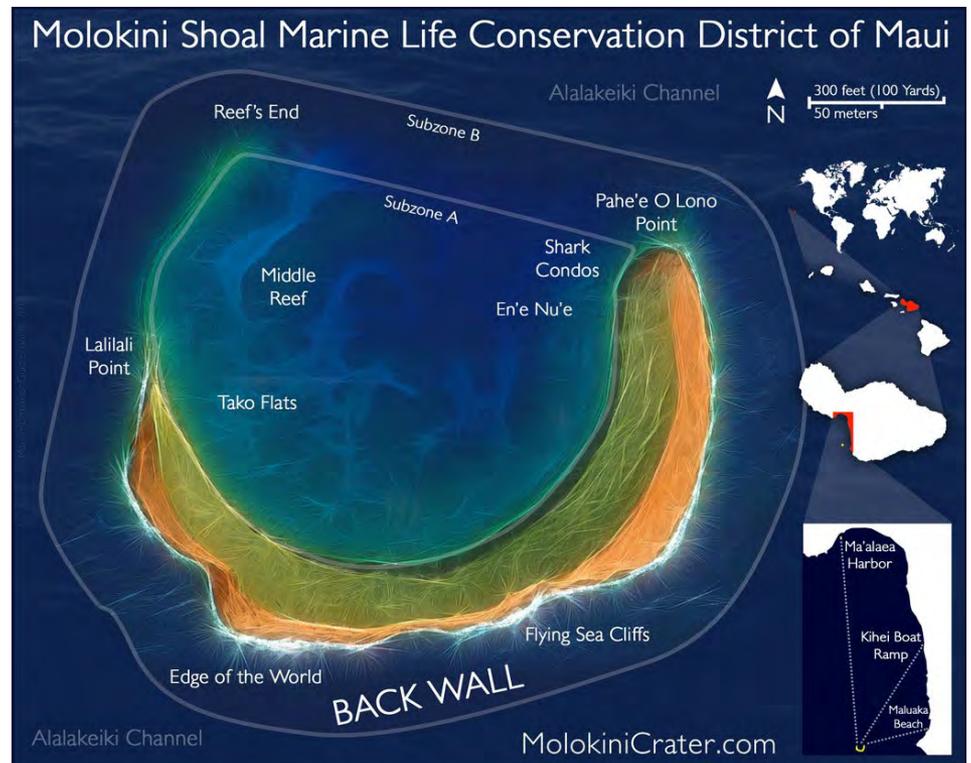
Molokini Shoals Marine Life Conservation District



1977: HI designates Molokini Shoals Marine Life Conservation District

1981: Commercial operator permitting system

- Hard cap of 42 permits distributed to active operators
- \$50 for 2 years



Molokini Shoals Marine Life Conservation District



2009: Revisions to permit system to minimize impact and collect visitor data

- Capped vessel passenger capacity at '09 Coast Guard vessel capacity
- Restricted diver to guide ratios
- Prohibited introductory diving and non-certified diver tours
- Placed depth and tether restrictions on SNUBA operations
- Required permit holders to:
 - Submit monthly use logs of time in/out, mooring used, breakdown of guest numbers and activities conducted
 - Deliver a pre-dive briefing including best practices & collect signatures from passengers verifying they received this briefing
- First come first serve moorings: 26 commercial and 2 non-commercial that do not require a permit

Molokini Shoals Marine Life Conservation District



2010: Social carrying capacity study

- Respondents considered larger boats and a greater number of boats to be less acceptable than fewer and smaller boats
 - 6 boats of any size and 12 boats that were a mix of small and large vessels were considered acceptable crowding levels
- Visitors generally supported restricting use levels by:
 - limiting the number of boats allowed per day
 - limiting number of people allowed per day
 - Restricting boat size

Molokini Shoals Marine Life Conservation District



2019- Present:

- Introduced a bill to limit access to 12 commercial vessels at one time
 - Vetoed by the governor
- Instituted a voluntary schedule with operators to reduce feelings of crowding and remain within encounter norms (≤ 12 boats)
 - Temporal zoning redistributes access over a specific period of time
- Plans to increase permit fee substantially from \$50/2 years
 - Considering offering free permits to operators who only access Molokini before or after peak hours (8-11am)

Molokini Shoals Marine Life Conservation District



The Commercial Permitting System serves as a regulatory scaffold for site management and educational visitor use management strategies

- Achieves management, data, and outreach objectives
- Limits commercial access to 40 vessels
 - Moorings limits commercial vessels at one time to 26
 - Voluntary schedule keeps boat numbers within visitor encounter norms and social carrying capacity ≤ 12 boats
- Pre-trip briefing is an educational strategy to ensure environmental and regulatory awareness
- Monthly data submission provides robust visitor use data to inform adaptive management
- **Major benefits of this approach:**
 - shrinks stakeholder pool
 - ultimate penalty for violation of any requirement is permit revocation

Summary

1. Need for action

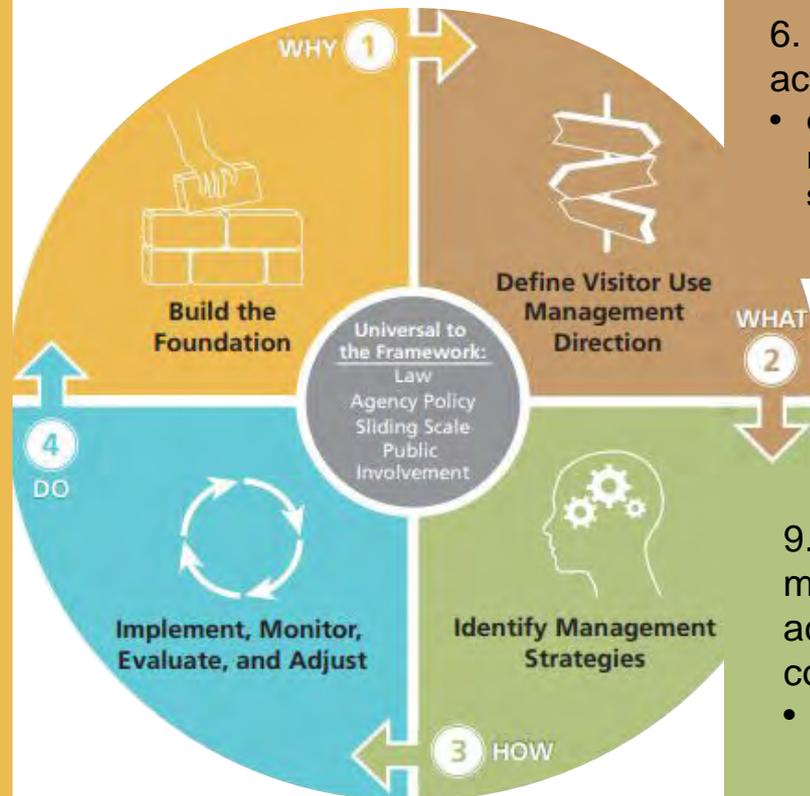
- ~5.5 million visitors
- Increasing visitor use threatens sanctuary resources
- Crowding impacts visitor experience

2. Area's purpose & applicable legislation

- NMSA, FKNMSPA, FK Revised 2007 Mgmt Plan, Marine Zoning & Regulatory Review Goals & Objectives

3. Current conditions

- 2011 Condition Report, Integrated Ecosystem Assessment, Restoration Blueprint. Mission Iconic Reef, Damage Assessment reports, Aerial Overflight Visitor Use Surveys, studies of diver impacts on coral)



6. Define appropriate visitor activities, facilities & services

- e.g. fishing, diving/snorkeling, research, mooring buoys, shipwreck trail

9. Identify visitor use management strategies and actions to achieve desired conditions

- Mooring buoys, shipwreck trail, Blue Star programs, boater education, activity specific permits, marine zones

Supplemental Slides

Koh Chang, Thailand



Scuba Zone Koh Chang

Koh Chang, Thailand



- 2002-2003: Study conducted to determine desirable biophysical and social conditions and limits of acceptable change for snorkeling in Koh Chang
- Coral condition strongly influenced visitor perceptions
 - Visitors snorkeling in areas with:
 - high mortality and low diversity were generally unsatisfied
 - low mortality and high coral diversity were more satisfied
- Feelings of crowding increased with ≥ 35 snorkelers at the site

Koh Chang, Thailand



MPA has a preservation mandate and tourism objectives:

- Limit tourism to less vulnerable reefs capable of providing high-quality tourism experiences
- Designate more vulnerable sites as ecotourism zones with access restrictions to ensure lower visitation
 - Tiered fee system with higher charge in ecotourism zones
 - Licenses for tour operator access to ecotourism zones