



Development of Protected Area Management



Standard Operational Procedures (SOP)

St. Kitts and Nevis

SOP 4

Rangers' functional content

Final draft July 2017

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Rangers' functional content

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Purpose and scope

Protected Areas Park Rangers started to be recruited in 2016 for existing and envisaged SKN PAs. The initiative was undertaken under the United Nations Development Programme (UNDP/GEF) project *“Conserving Biodiversity and Reducing Habitat Degradation in Protected Areas and their Areas of influence.”*

Park Rangers perform the following tasks:

- Monitor the activities within the Protected Areas to ensure compliance.
- Enforce Protected Areas Legislation and Regulations.
- Maintain the Protected Areas facilities and equipment.
- Engage in conservation programs.
- Place and maintain interpretive, directional and location signs.
- Participate in the demarcation/zoning and mapping of Protected Areas.
- Conduct trail development and maintenance exercises in the Protected Areas.
- Facilitate and participate in the ecological inventory and research activities within terrestrial Protected Areas.
- Monitor and control invasive species.
- Provide first aid assistance.
- Assist in search and rescue missions.
- Conduct educational tours for residents (especially of schools) and visitors.
- Perform basic clerical duties in the terrestrial Protected Areas office.
- Collaborate with other park management organizations in the region.

- Participate in relevant training and workshops.
- Collaborate with the Forestry Officers in the Department of Agriculture and Environmental/Conservation Officers in the Department of Environment.

The Powers of Park Rangers as expressed in SKN framework law¹ include the following:

- Stop, board, enter or search a person or vehicle which the park ranger suspects of transporting, removing or in possession of any specimen, species, plant, artefact, object or similar material from a protected area;
- Seize any specimen, species, plant, artefact, object or similar material which the park ranger has reasonable grounds to believe has been removed from a protected area in contravention of the Act or these Regulations;
- Require a person who has committed a minor breach, whether of the Act, these Regulations or condition of a permit, to rectify or remedy such breach within a reasonable time;
- Order a person to stop or cease a specific activity if such activity is carried out in contravention of the Act or these Regulations;
- Seize, detain or confiscate any equipment or gear used in the commission of an offence and issue a receipt for such seizure, detention or confiscation.

This Park Rangers SOP starting from the baseline defined in the described framework policy, crossing with examples from other parts of the world, IUCN international standards and International Rangers best practices, will provide further guidance and procedures for rangers. These will cover a Code of Practice, outlining the core roles of the Ranger, professional best practice and the skills and competencies required to do the job.

✓ **Assessing rangers' roles and competencies:**

| Rangers role | Competency |
|---|---|
| Provision of information | Recreation and visitor management Information on land management activities Information on acts and activities regulation |
| Advice & activities | Outdoor learning and interpretation of the natural and cultural heritage Formal and informal environmental education activities Guided walks and treks about the natural and cultural heritage Community and other stakeholder |
| Management of sites & facilities | Working to ensure protected area objectives are integrated with other land management operations Ensuring good quality management of sites and facilities enjoyed |

¹ Protected Areas Regulation, 2017 (draft)

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| | by visitors |
| | Providing a welcoming, reassuring and visible presence |
| | Planning, monitoring, and management of sites and facilities |
| | Responding appropriately to emergencies and incidents |
| Responsible behaviour | Recreation and visitor management |
| | Ensuring site and ecosystem integrity |
| | Enforcing existing legislation while exercising personal safety and protection of others |
| | Delivering training to others |

To fulfil these competencies, you should:

Step 1: Check your competency areas

- Recreation and visitor management
- Information on land management activities
- Information on acts and activities regulation
- Outdoor learning and interpretation of the natural and cultural heritage
- Formal and informal environmental education activities
- Community and other stakeholder information, consultation and facilitation
- Outdoor learning and interpretation of the natural and cultural heritage
- Guided walks and treks about the natural and cultural heritage
- Ensuring site and ecosystem integrity
- Ensuring good quality management of sites and facilities enjoyed by visitors
- Providing a welcoming, reassuring and visible presence
- Monitoring, and management of sites and facilities
- Monitoring of habitats and species
- Responding appropriately to emergencies and incidents
- Enforcing existing legislation while exercising personal safety and protection of others
- Delivering training to others

Step 2: Check your major functions

- Providing information to anyone who needs it, on landscape, biodiversity and geodiversity and activities taking place;
- Carrying out interpretation of their area to explain the special qualities and set them in context
- Developing and leading opportunities for environmental education for all ages
- Planning for and protecting the natural and cultural resource they manage, including monitoring and advising on conservation issues
- Managing access, managing other recreation and monitoring visitors
- Emergency and safety planning
- Meeting with other local interests, such as other land owners, user groups and the local community to represent the interest of managing the area
- Involvement in controlling wild animals, protected species while discouraging antisocial and non-civic behaviors

- Monitoring
- Organization and working with volunteers.

Step 3: Check your skills and qualities

- Knowledge and understanding of your area of work, its needs and the interests and needs of users
- Abilities to carry out the required tasks, usually with limited resources
- Communication skills are central to the Ranger's work - clear thinking and essential diplomatic skills
- Rangers work revolves around changing other people's attitudes. Rangers need to be persuasive. To achieve this, you must be – and must be seen to be – genuinely convinced of their purpose and in full possession of the facts and authority to act. Rangers may have legal powers of enforcement but usually rely on convincing people of the right thing to do.
- Rangers need to be outgoing and inclusive in their approach to others, particularly to members of the public
- The Ranger is required to understand and care for the inherent qualities of their area. The Ranger needs a thorough knowledge of environmental issues, ecology and biology of the species and habitats in their care and the possibilities for improvements and hazards of decline or invasion by other species they face.
- Rangers are often the main, or only, source of information and regularly keep methodical records for sharing with the public later. The ability to make records and keep them in a useful way, whether it is photographs, wildlife sound recordings, measurements or anecdotes, is a skill many Rangers use daily.

✓ **Rangers' service professional best practice**

The following checklist is intended to help assess your ranger service.

- Adopting a professional learning and self-development approach, by:
 - Seeking to improve your skills by attending relevant work based or off site courses; if such courses are not available, pursue online training or reading technical publications;
 - Keeping up to date with advances in policy or research through training, technical web sites, reports and publications and specialist groups within professional bodies.
- Adhering and implementing legislation and regulations, by:
 - Pursuing the national outcomes relevant to the PAs organization's goals;
 - Using SOPs in an effective manner to help achieve outcomes;
 - Encouraging new standards, where appropriate procedures do not exist.
- Ensuring you are up to date with the substance and content of legal and regulatory frameworks applying to your work;
- act at all times in ways which comply with obligations and encourage their colleagues to do likewise;
- Seeking professional advice at an early stage if they have any doubts about the appropriate application of the law or regulations;
- In all aspects of their work comply with non-discriminatory legislation in the areas of race, ethnic origin, sexual orientation, disability or age.
- Acting with professionalism by:
 - Maintaining and enhancing your knowledge by, for example, reading relevant literature, attending conferences and seminars, meeting and maintaining contact with other leading practitioners and through taking an active part in appropriate professional bodies;

- Evaluating new activities, assessing their potential benefit and recommend their use where appropriate;
- keeping in close touch with and contribute to current developments, particularly within the organization and the wider Ranger profession;
- Exercising a sense of social responsibility in your work;
- Helping keeping colleagues informed of new thinking, policies and advice;
- Being aware that most people do not share your expertise and knowledge of technical jargon. Communication should be in terms that can be commonly understood;
- Keeping up to date with new methods and the tools;
- Requesting the necessary resources to complete work plans within agreed time scales;
- Utilizing professional judgment and act with professional objectivity at all times;
- Providing constructive criticism aiming to improve work quality;
- Accepting constructive criticism of their work, appreciating that others may have valid view points and better solutions;
- Maintain good working relationships with colleagues, customers and users, even though they may disagree with them;
- Be aware of the interaction of your work with that of others involved in complementary activities like access, planning, biodiversity, education or outdoor pursuits;
- Seek to identify potential hazards, failures and risks associated with yours and their work or work place, and seek to ensure that they are appropriately addressed;
- Ensure that the well-being of those working (or volunteering) under your or their supervision or direction is appropriately considered;
- Help to promote a culture within the organization which strives for continuous improvement; seek involvement and participation in best practices at all levels;
- When problems arise, take responsible corrective actions, even when such actions are beyond their responsibility;
- Take every opportunity to make a positive contribution to formal quality management systems and fully understand quality and commercial practices within the organization;
- Contribute to public education, so that the public can be aware of and form an objective and informed view on Ranger Services;
- Ensure that all complaints from members of the public are dealt with properly through to resolution.

Dress code:

Rangers, while in the performance of their official duties, dress in a professional manner to promote the consistent identification of its members and create a professional public image.

Rangers shall report for duty neatly dressed, well-groomed and in appropriate attire for the assignment.

While on duty, members will maintain a neat, clean and professional appearance to the extent the daily assignment will allow.

- ✓ Uniforms provide a standardized form of dress and a common identity for rangers. They represent the ideals and goals of the organization, both to the members of SKN PAs rangers and to broader society. Uniform Classes and Components are defined by the PA Authority.

Step 4: Check responsibilities with surveillance and patrolling

Surveillance and patrolling means visiting, driving, walking through vulnerable places and zones in the PA.

It comprehends basically two functions:

- To control the different activities in the area
- To monitor resources.

This should be done periodically, in a routine way but different every time, in key places and at key times:

- By verifying the practice of infractions, by considering the legal dispositions in subject areas, e.g. water domain, environment, natural resources and natural heritage, and by preparing incident reports of the infractions witnessed or verified;
- By making a citation, by executing an embargo, or other coercive actions determined by the competent PA Authorities, of the works or actions that incur in violation of the law.
- By ensuring that the patrolling activity will serve as a database for the management of the PA.

Step 5: Check Patrol best practices

- Prepare a weekly work plan;
 - Patrol in groups of two or more people;
 - Change the route whenever possible, at least weekly;
 - Organize with supervisor or person responsible, a work plan where you define the area, attributes and foreseen activities you are going to engage in while indicating times of departure and return;
 - Plan day and night patrols;
 - Take a note pad, mobile phone and/or photo machine to record relevant data or take notes you consider necessary;
 - Take the necessary equipment;
 - Inspect and report on the state of conservation of the infrastructures and equipment of PAs;
 - Make monitoring and surveillance/patrolling reports on a regular basis;
- ✓ Monitoring is an important part of the rangers' work:
- Do it on a regular basis feeding and updating PA management and constructing an on-going database for future revisions of the PA Management Planning;
 - The PA ranger and supervisor should identify the most important elements to be monitored in the area.
 - You should collect field data during rounds. Keep a detailed record of what is occurring with habitats and species- plants, animals, streams, water systems, forests, sea/ocean, as well as climate data. Everything observed should be noted down in your field pad for later use as a basis for your report.
 - Monitor flora and habitats.

Monitoring the flora will be advantageous for managing and protecting the species under threat, for controlling exotic, endemic or rare species. It should also take into account marine plant life in coastal and marine areas;

- Monitor fauna and species.
Check any change (reduction or increase) in the characteristics of the area. Rangers should identify the key animal species in the PA, Inland and marine. The data collected in the field through direct observation and/or interviews will allow you to suggest and adapt management;

Data covered should include dates with:

- *Observation of animals.*
- *Signs or prints of animals found, the place and date.*
- *Identification of migratory species (period of observation).*
- *Places preferred by the species for their nesting and reproduction.*
- *Periods of nesting and reproduction of the different species of the area.*
- *Any irregularities found during land or water patrolling.*

Step 6: The surveillance/patrolling regular report should contain

- *Names of people patrolling*
- *Date and time of patrol*
- *Places or sites visited*
- *Approximate distance and time of patrol*
- *Means of transport used (boat, on foot, etc.)*
- *Activities done*
- *Problems and irregularities*
- *Observations and state of some areas/zones*
- *Suggestions and improvements.*

Step 7: When needed, an Incident Report is a short account of an incident written immediately following an event.

An incident is any event, internal or external to you, that is unusual, suspicious, or in violation of procedure, rules, regulations or laws governing the PA jurisdiction.

An incident can range from a safety concern, to a shortfall in equipment, to any type of illegal activity.

An incident report should contain:

- *The names of all people involved in the incident. If you are not able to get the names of those involved, record as much physical description as possible, such as sex, race, approximate height, weight, eye and hair color, clothing, and scars/tattoos. If you can interview those involved, ask for IDs to record first and last names.*
- *Explanation of what occurred during the incident.*
- *Record as precisely as possible where the incident took place. This includes information about any vehicle involved in the incident*
- *Record the time or timeframe as accurately as possible.*
- *If this information is available, explain how the incident occurred.*
- *Sign and date the form.*

Step 8: A citation is a legal document prepared by the PAA or a legal officer that is issued to an individual who is breaking the law.

A citation may be filled out for all illegal infractions, ranging from minor violations to major transgressions, including arrests. A citation should be filled out and issued immediately following a violation and while an incident report takes place.

Step 8: Summarizing, upon detection or notification of a **violation** occurring or having occurred in the PA, you will need to open and maintain a case folder.

The case folder should hold all the important documents and evidence related to the case

- Incident Report
- Citation
- Officer Notes
- Photos

Other items in the case folder may include:

- Supplement Reports
- Witness statements
- Maps
- Crime scene evidence
- Video footage
- GPS readings

- ✓ The case folder will be forwarded to a legal officer or other official of the PA Authority with a mandate to proceed with the case.

Legislation

In SKN ranger's powers, role and tasks are framed by the **Protected Areas Regulation, 2017** (draft), namely paragraphs 32, 33,34,35,40 and 42.

- ✓ This guiding document will be the legal operational framework that will bound the PA Standard Operational Procedures and will replace the existing NCEPA. **Nevertheless, until it is replaced NCEPA is still legally in place.**
- ✓ When implementing this SOP, these acts/guidelines must be verified by current legislation (including enacted versions of the draft referenced).

References

International Rangers Federation:

<http://www.internationalrangers.org/>

<http://www.internationalrangers.org/ranger-toolkit/>

Management Plan for Central Forest Reserve National Park 2007-2011. Federation of St. Kitts and Nevis. The Organization of Eastern Caribbean States (OECS)

Lotter, W.D., Roberts, K., Singh, R., Clark, K., Barlow, C., de Kock, R., Steiner, K., Mander, D., Khadka, M. and Guerrero, J. (2016). Anti-poaching in and around protected areas: Training guidelines for field rangers. Best Practice

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|  | PA Authority Division/Function | SOP # | 4 Marine |
| | | Preparation Date | June 2017 |
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| | | Last Reviewed/Update Date | |
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Purpose and scope

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Rangers perform the following tasks:

- Monitor the activities within the Protected Areas to ensure compliance.
- Enforce Protected Areas Legislation and Regulations.
- Maintain the Protected Areas facilities and equipment.
- Engage in conservation programs.
- Place and maintain interpretive, directional and location signs.
- Participate in the demarcation/zoning and mapping of Protected Areas.
- Conduct trail development and maintenance exercises in the Protected Areas.
- Facilitate and participate in the ecological inventory and research activities within terrestrial Protected Areas.
- Monitor and control invasive species.
- Provide first aid assistance.
- Assist in search and rescue missions.
- Conduct educational tours for residents (especially of schools) and visitors.
- Perform basic clerical duties in the terrestrial Protected Areas office.
- Collaborate with other park management organizations in the region.

- Participate in relevant training and workshops.
- Collaborate with the Forestry Officers in the Department of Agriculture and Environmental/Conservation Officers in the Department of Environment.

Powers of Park Rangers as expressed in SKN framework law² include the following:

- Stop, board, enter or search (as the case may be) a person or vehicle which the park ranger suspects of transporting, removing or in possession of any specimen, species, plant, artefact, object or similar material from a protected area;
- Seize any specimen, species, plant, artefact, object or similar material which the park ranger has reasonable grounds to believe has been removed from a protected area in contravention of the Act or these Regulations;
- Require a person who has committed a minor breach, whether of the Act, these Regulations or condition of a permit, to rectify or remedy such breach within a reasonable time;
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✓ **Assessing ranger’s roles and competencies:**

| Rangers role | Competency |
|---|---|
| Provision of information | Recreation and visitor management |
| | Information on marine management activities |
| | Information on acts and activities regulation |
| Advice & activities | Outdoor learning and interpretation of the natural and cultural heritage |
| | Formal and informal environmental education activities |
| | Community and other stakeholder |
| Management of sites & facilities | Working to ensure that MPA objectives are integrated with other spatial management operations and sectors |
| | Ensuring good quality management of marine sites and facilities |

² Protected Areas Regulation, 2017 (draft)

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| | enjoyed by visitors |
| | Providing a welcoming, reassuring and visible presence |
| | Planning, monitoring, and management of marine sites and facilities |
| | Responding appropriately to emergencies and incidents |
| Responsible behaviour | Recreation and visitor management |
| | Ensuring site and ecosystem integrity |
| | Enforcing existing legislation while exercising personal safety and protection of others |
| | Delivering training to others |

To fulfil competencies, you should:

Step 1: Check your competency areas

- Recreation and visitor management
- Information on marine management activities
- Information on acts and activities regulation
- Formal and informal environmental education activities
- Community and other stakeholder information, consultation and facilitation
- Outdoor learning and interpretation of the natural and cultural heritage
- Ensuring site and ecosystem integrity
- Ensuring good quality management of sites and facilities enjoyed by visitors
- Providing a welcoming, reassuring and visible presence
- Monitoring, and management of sites and facilities
- Monitoring of habitats and species
- Responding appropriately to emergencies and incidents
- Enforcing existing legislation while exercising personal safety and protection of others
- Delivering training to others

Step 2: Check your major functions

- Providing information to anyone who needs it, on seascape, biodiversity and geodiversity and activities taking place;
- Carrying out interpretation of their area to explain the special qualities and set them in context
- Developing and leading opportunities for environmental education for all ages
- Planning for and protecting the natural and cultural resource they manage, including monitoring and advising on conservation issues
- Managing access, managing other recreation and monitoring visitors
 - Carrying out programmed operational activities related to departmental vessels operating in the MPAs, in accordance with management plans, interim guidelines, budgeting requirements, prescriptions and other departmental requirements. These may include:

- participating in patrols via vessel for raising public understanding of marine park values, regulations, compliance, management intervention, research and monitoring;
 - participating in implementing the marine and coastal annual works program;
 - undertaking deckhand activities and the operation of associated marine infrastructure and equipment including small engines, cranes, ropes and winches on vessels;
 - maintaining and skippering departmental vessels in accordance with PAA superiors.
- Emergency and safety planning, participating in emergency incident rosters and responses that may be related to search and rescue, or wildlife, as appropriate
 - Meeting with other local interests, user groups and the local community to represent the interest of managing the area
 - Involvement in controlling wild animals, protected species while discouraging antisocial and non-civic behaviors
 - Monitoring
 - Assisting with the implementation of marine and coastal annual works programs.
 - Organization and working with volunteers

Step 3: Check your Skills and qualities

- Knowledge and understanding of your area of work, its needs and the interests and needs of users
- Abilities to carry out the required tasks, usually with limited resources
- Communication skills are central to the Ranger's work - clear thinking and essential diplomatic skills
- Rangers work revolves around changing other people's attitudes. Rangers need to be persuasive. To achieve this, you must be – and must be seen to be – genuinely convinced of their purpose and in full possession of the facts and authority to act. Rangers may have legal powers of enforcement but usually rely on convincing people of the right thing to do.
- Rangers need to be outgoing and inclusive in their approach to others, particularly to members of the public
- The Ranger is required to understand and care for the inherent qualities of their area. The Ranger needs a thorough knowledge of environmental issues, ecology and biology of the species and habitats in their care and the possibilities for improvements and hazards of decline or invasion by other species they face.
- Rangers are often the main, or only, source of information and regularly keep methodical records for sharing with the public later. The ability to make records and keep them in a useful way, whether it is photographs, wildlife sound recordings, measurements or anecdotes, is a skill many Rangers use daily.

✓ **Rangers' service professional best practice**

The following checklist is intended to help assess your ranger service.

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 - o Seeking to improve your skills by attending relevant work based or off site courses; if such courses are not available, pursue online training or reading technical publications;
 - o Keeping up to date with advances in policy or research through training, technical web sites, reports and publications and specialist groups within professional bodies.
- Adhering and implementing legislation and regulations, by:

- Pursuing the national outcomes relevant to the MPAs organization's goals;
 - Using SOPs in an effective manner to help achieve outcomes and encouraging new standards, where appropriate procedures do not exist.
 - Ensuring you are up to date with the substance and content of legal and regulatory frameworks applying to your work;
 - act at all times in ways which comply with obligations and encourage their colleagues to do likewise;
 - Seeking professional advice at an early stage if they have any doubts about the appropriate application of the law or regulations;
 - In all aspects of their work comply with non-discriminatory legislation in the areas of race, ethnic origin, sexual orientation, disability or age.
- Acting with professionalism by:
- Maintaining and enhancing your knowledge by, for example, reading relevant literature, attending conferences and seminars, meeting and maintaining contact with other leading practitioners and through taking an active part in appropriate professional bodies;
 - Evaluating new activities, assessing their potential benefit and recommend their use where appropriate;
 - keeping in close touch with and contribute to current developments, particularly within the organization and the wider Ranger profession;
 - Exercising a sense of social responsibility in your work;
 - Helping keeping colleagues informed of new thinking, policies and advice;
 - Being aware that most people do not share your expertise and knowledge of technical jargon. Communication should be in terms that can be commonly understood;
 - Keeping up to date with new methods and the tools;
 - Requesting the necessary resources to complete work plans within agreed time scales;
 - Utilizing professional judgment and act with professional objectivity at all times;
 - Providing constructive criticism aiming to improve work quality;
 - Accepting constructive criticism of their work, appreciating that others may have valid view points and better solutions;
 - Maintain good working relationships with colleagues, customers and users, even though they may disagree with them;
 - Be aware of the interaction of your work with that of others involved in complementary activities like access, planning, biodiversity, education or outdoor pursuits;
 - Seek to identify potential hazards, failures and risks associated with yours and their work or work place, and seek to ensure that they are appropriately addressed;
 - Ensure that the well-being of those working (or volunteering) under your or their supervision or direction is appropriately considered;
 - Help to promote a culture within the organization which strives for continuous improvement; seek involvement and participation in best practices at all levels;
 - When problems arise, take responsible corrective actions, even when such actions are beyond their responsibility;
 - Take every opportunity to make a positive contribution to formal quality management systems and fully understand quality and commercial practices within the organization;
 - Contribute to public education, so that the public can be aware of and form an objective and informed view on Ranger Services;
 - Ensure that all complaints from members of the public are dealt with properly through to resolution.

Dress code:

Rangers, while in the performance of their official duties, dress in a professional manner to promote the consistent identification of its members and create a professional public image.

Rangers shall report for duty neatly dressed, well-groomed and in appropriate attire for the assignment.

While on duty, members will maintain a neat, clean and professional appearance to the extent the daily assignment will allow.

- ✓ Uniforms provide a standardized form of dress and a common identity for rangers. They represent the ideals and goals of the organization, both to the members of SKN PAs rangers and to broader society. Uniform Classes and Components are defined by the PA Authority.

Step 4: Check responsibilities with surveillance and patrolling

Surveillance and patrolling means visiting vulnerable places and zones in the MPA. It comprehends basically two functions:

- To control the different activities in the area
- To monitor resources.

This should be done periodically, in a routine way but different every time, in key places and at key times:

- By verifying the practice of infractions, by considering the legal dispositions in subject areas, e.g. water domain, environment, natural resources and natural heritage, and preparing reports of the infractions witnessed or verified;
- By executing the embargo, or other coercive actions determined by the competent authorities, of the works or actions that incur in violation of the law.
- By ensuring that the patrolling activity will serve as a database for the management of the PA.

Step 5: Check Patrol best practices

- Prepare a weekly work plan;
- Patrol in groups of two or more people;
- Water patrolling must focus on: boats observed, the activities occurring, the number of divers, fishermen, other users and changes in habitats and species, like reef mass (both in number as well as in health of the reefs: color, etc.);
- Organize with supervisor or person responsible, a work plan where you define the area, attributes and foreseen activities you are going to engage in while indicating times of departure and return;
- Plan day and night patrols;
- Take a note pad, mobile phone and/or photo machine to record relevant data or take notes you consider necessary;

- Take the necessary equipment;
- Inspect and report on the state of conservation of the infrastructures and equipment of MPAs;
- Make monitoring and surveillance/patrolling reports on a regular basis;
- ✓ Monitoring is an important part of the rangers' work:
 - Do it on a regular basis feeding and updating MPA management and constructing an on-going database for future revisions of the PA Management Planning;
 - The PA ranger and supervisor should identify the most important elements to be monitored in the area.
 - You should collect field data during rounds. Keep a detailed record of what is occurring with habitats and species- plants, animals, streams, water systems, forests, sea/ocean, as well as climate data. Everything observed should be noted down in your field pad for later use as a basis for your report.
 - Monitor flora and habitats.
Monitoring the flora will be advantageous for managing and protecting the species under threat, for controlling exotic, endemic or rare species. It should also consider marine plant life in coastal and marine areas;
 - Monitor fauna and species.
Check any change (reduction or increase) in the characteristics of the area. Rangers should identify the key animal species in the MPA. The data collected through direct observation and/or interviews will allow you to suggest and adapt management;
Data covered should include dates with:
 - *Observation of animals.*
 - *Signs or prints of animals found, the place and date.*
 - *Identification of migratory species (period of observation).*
 - *Places preferred by the species for their nesting and reproduction.*
 - *Periods of nesting and reproduction of the different species of the area.*
 - *Any irregularities found during coastal and water patrolling.*

The following are two examples related to Protected Species monitoring³:

Coral Reefs

It is important that a monitoring site is well located and permanent. The reading of a GPS will be the coordinates used to identify a monitoring site at all times, since it will be a site regularly visited to take a number of measurements. Check the basic parameters to monitor coral reefs:

- *Time of visit*
- *Name of location*
- *Site ID*

³ Information adapted from: Conservation and sustainable use of the Mesoamerican barrier reef systems project (MBRS) manual for training rangers of marine protected areas in the MBRS region. Project coordinating unit coastal resources, Belize

- *Description of the site: topography, inclination, shape (coral formations, channels, others)*
- *GPS Coordinates*
- *Collectors' names*
- *Weather conditions*
- *Air and water temperature*
- *Rain, wind, ocean conditions*
- *Depth*
- *Direction: windward or frontal reef and leeward or posterior reef*
- *Salinity, light, turbidity, ph, OD dissolved oxygen, nutrients*
- *Sedimentation*
- *General description of the site*
- *Video (can be through your smartphone)*

Some of the specific parameters to monitor may include:

- *Percentage of space coverage*
- *Percentage of coverage of algae, sponges, gorgonaceans, and corals at the gender level*
- *Community composition*
- *Distribution by size, height of the colony, average diameter*
- *Whitening degree*
- *Coral illness frequency*
- *Mortality rate*
- *Damage caused by storms*
- *Abundance of corals at the gender level and if possible their specie*
- *Abundance of selected species of fish that indicate the health of the ecosystem*
- *Abundance of sea urchins Diadema*

Turtles:

If you are going to monitor or patrol zones inhabited by turtles, you should know the different threats to them, which can be classified as follows:

- **Incidental fishing:** It is called incidental or accidental since fishermen are looking for other species. Many turtles get caught in drag nets and drown. Also, with the same net, fishermen can destroy sea grass, as well as the feeding and breeding grounds of the species. On the other hand, turtles are caught in long fishing lines used commercially to capture fishing species.
- **Hunting:** They are threatened by men that may hunt them for meat and jewelry, such as the hawksbill.
- **Illness:** Little is known about the illnesses plaguing sea turtles; Parasites, both internal and external; fibropapillomas, a cancerous mass which appears as a broccoli on the turtles' skin. These illnesses are more common when turtles are in captivity.

On nesting grounds

Collecting eggs: For industrial and nutritional use, the production of oil and the belief that they possess medicinal and aphrodisiac qualities, but this depends on cultural and historical issues that must be demystified when occurring.

Construction and Infrastructure: Man-made artificial structures block the way for females when they are going to lay their eggs, they compact sand in all the areas, modify natural movement of sand along the coast and affect their life cycle. Another problem can be sand extraction, which changes the topography of the nesting grounds.

Lights: Lights from houses and hotels or urban illumination near the coast makes it difficult for turtles to lay their eggs, since they do it in the dark dark. Also, when lights on the beach make small turtles go inland instead of towards the ocean, where they can be run over by cars, eaten by dogs and other domestic animals, or die from sun exposure. (Patrol to reduce and remove lights during the time when eggs are laid).

Tourism and Ecotourism: Presence of large number of vessels near the shore and tourists on beaches where turtles lay their eggs causes them to return to sea without laying their eggs. Using flash cameras, not allowing the turtles to pass when they reach the beach, stepping over, upsetting nests and touching the turtles causes serious problems. Other common activities that disturb turtles are the use of light, standing in front of the turtle when it is laying its eggs, speaking loudly or smoking.

Solid and liquid wastes in beaches: Wastes thrown into the ocean and the coast such as cans, plastics, plastic bottles, hooks, glass and styrofoam; recreation and work equipment such as chairs, umbrellas, vehicle parts, tubes and other obstacles have the potential to delay and even stop turtles from reaching the safest nesting grounds. Also, plastics and wastes can also cause their death if they eat them or they get caught in them.

Chemical pollutants: oil, waste water, pesticides, industrial discharge and agricultural wastes are responsible for some turtle deaths.

Predators: Danger to eggs comes from predators such as crabs, snakes, mammals, including pigs, cats and dogs. Once the turtles have hatched, the small turtles are easy prey for land and sea predators such as crabs, birds, fish and some mammals.

Weather impacts: Tropical storms and hurricanes can alternate the migration patterns of turtles. Also, copious rainfall can flood and eliminate nests from the beach and result in food shortage, reducing the growth and fertility of sea turtles.

Check areas where turtles are laying eggs:

Incubation of the eggs should be as natural as possible. To avoid predation, you can help hide nests and erase the tracks of turtles when they arrive on the beach. Also:

- Don't walk on the beach with a flashlight and don't shine it on the turtles' face.
- Don't take pictures with a flash.
- Stay away from the turtle's sight line until it starts laying its eggs.
- For your safety, keep away from the turtles' heads.
- Don't handle the eggs, and don't put foreign object in the nest.
- Don't touch and don't sit on turtles.
- When young turtles hatch, follow these instructions:

- The small turtles come out of the nest by themselves. Don't aid them.
- The youngsters come out to the beach at sunset on the same day they are born. Broods will be released at one hundred-meter intervals from each other, both next to the turtle nursery.
- Protect them from predators at the beach, such as birds, crabs, cats, dogs, etc.

Step 6: The surveillance/patrolling report should contain:

- *Names of people patrolling*
- *Date and time of patrol*
- *Places or sites visited*
- *Approximate distance and time of patrol*
- *Means of transport used*
- *Activities done*
- *Problems and irregularities*
- *Observations and state of some areas/zones*
- *Suggestions and improvements.*

Step 7: When needed, an Incident Report is a short account of an incident written immediately following an event.

An incident is any event, internal or external to you, that is unusual, suspicious, or in violation of procedure, rules, regulations or laws governing the MPA jurisdiction.

An incident can range from a safety concern, to a shortfall in equipment, to any type of illegal activity.

An incident report upon detection or notification of a violation occurring or having occurred in the MPA, should be made with:

- Note date, time, and location of violation; Location shall be established via issued GPS. Information shall be collected on the following list:
- Length and type of vessel.
- Vessel name or home port.
- Number of persons on board.
- Identifying the captain or owner, and by what means identification was obtained (i.e. Passport, vessel registration etc.)
- Names of any and all violators or witnesses to the incident.
- If the violation involved destruction of the coral reef environment, all efforts should be made to identify the means of navigation/location available to the suspect vessel (i.e. Charts, GPS, local knowledge).
- Pictures should be taken of the suspect vessel occupants and any exhibits necessary to prove or establish the crime.
- All exhibits collected in support of the alleged violation will be photographed and properly tagged
- Record the time or timeframe as accurately as possible.
- If this information is available, explain how the incident occurred.
- Sign and date the form.

Step 8: A citation is a legal document prepared by the PAA or a legal officer that is issued to an individual who is breaking the law.

A citation may be filled out for all illegal infractions, ranging from minor violations to major transgressions, including arrests. A citation should be filled out and issued immediately following a violation and while an incident report takes place.

Step 9: Summarizing, upon detection or notification of a **violation** occurring or having occurred in the PA, you will need to open and maintain a case folder.

The case folder should hold all the important documents and evidence related to the case

- Incident Report
- Citation
- Officer Notes
- Photos

Other items in the case folder may include:

- Supplement Reports
- Witness statements
- Maps
- Crime scene evidence
- Video footage
- GPS readings

- ✓ The case folder will be forwarded to a legal officer or other official of the PA Authority with a mandate to proceed with the case.

Legislation

In SKN ranger's powers, role and tasks are framed by:

The **Protected Areas Regulation**, 2017 (draft), namely paragraphs 32, 33,34,35,40 and 42.

This guiding legal documents, still in draft mode, will be the legal operational framework that bound the MPA Standard Operational Procedures and will replace the existing NCEPA. Nevertheless, until it is replaced NCEPA is still legally in place.

Saint Christopher and Nevis **Fisheries Aquaculture and Marine Resources Act**, 2016 namely Part III.

Please note that these Fisheries, Aquaculture and Marine Resources Act declared a 2 miles radius as Marine Managed Area and within it there are three Conservation Zones: Sandy Point, Keys and the Narrows, which are areas also defined by the UNDP Prodoc Biodiversity project for MPAs.

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