ORGANIZATION OF EASTERN CARIBBEAN STATES (OECS) SECRETARIAT
ENVIRONMENT AND SUSTAINABLE DEVELOPMENT UNIT (ESDU)
PROTECTING THE EASTERN CARIBBEAN REGION'S BIODIVERSITY (PERB) PROJECT

Protected Area Management Plan for the Proposed Nevis Peak National Park and Camps River Watershed Area

FEDERATION OF ST. KITTS AND NEVIS

JUNE 2009

Cover Photo: View from Round Hill looking SE toward Nevis Peak across the Camps Ghaut Proposed Protected Area

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MINISTRY OF PHYSICAL PLANNING, INFRASTRUCTURAL DEVELOPMENT, ENVIRONMENT AND NATURAL RESOURCES

NEVIS ISLAND ADMINISTRATION

Protected Area Management Plan for the Proposed Nevis Peak National Park and Camps River Watershed Area

PREPARED FOR THE ORGANISATION OF EASTERN CARIBBEAN STATES BY:

Tortola, British Virgin Islands ♦ St. Thomas, U.S. Virgin Islands ♦ Washington, DC

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List of Acronyms and Key Definitions

Biodiversity	Biological diversity, including within species, between species and of ecosystems
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
EDRR	Early Detection and Rapid Response
EIA	Environmental Impact Assessment
IRF	Island Resources Foundation
IUCN	The World Conservation Union
Management Plan	Protected Areas Management Plan for the Proposed Nevis Peak National Park and Camps River Watershed Area
NCEMA	National Conservation and Environmental Management Act (Draft)
NCEPA	National Conservation and Environmental Protection Act
NGO(s)	Non-Governmental Organisation(s)
NHCS	Nevis Historical and Conservation Society
NIA	Nevis Island Administration
NNT	Nevis National Trust
NPDP	Nevis Physical Development Plan, 2008 (Draft)
OECS	Organisation of Eastern Caribbean States
PERB	Protecting the Eastern Caribbean Region's Biodiversity Project

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Protected Area Management Plan for the Proposed Nevis Peak National Park and Camps River Watershed Area

1. INTRODUCTION

1.1 Purpose of the Plan and Authority for Its Preparation

The Federation of St. Kitts-Nevis, among other member states of the Organisation of Eastern Caribbean States (OECS) is a signatory to the St. George's Declaration of Principles for Environmental Management (2001), which provides the framework for environmental management in the region. Goal 3 of the revised St. George's Declaration (2006) is to "Achieve the Long-Term Protection and Sustained Productivity of the Region's Natural Resource Base and the Ecosystem Services it Provides." This goal recognizes that the socio-economic structure of the OECS islands is intrinsically dependent on its biodiversity to support its agricultural productivity and to serve as the foundation of the tourism sector. Consequently, the need for biodiversity management to provide a sustainable socio-economic environment is well acknowledged in government policy papers.

The development of the Protected Areas Management Plan for Nevis Peak National Park and Camps River Watershed Area is supported by the OECS Environment and Sustainable Development Unit, in partnership with the USAID, through the OECS Protecting the Eastern Caribbean Region's Biodiversity (PERB) Project. The PERB Project focuses on those biodiversity issues that are linked most closely to Member States' priorities, and includes a component that aims to improve biodiversity protection, management and conservation through interventions in selected sites.

1.2 Linkages to Other NIA Plans and Sustainable Development Projects

As noted in its Foreword, the Draft Nevis Physical Development Plan (NPDP, 2008) is the island's "foundation for sustainable development and land use policies for the next 15 years and beyond." It is worth reiterating here that Plan's vision and the five key principles used to formulate its strategic objectives (see Box, page 2).

Vision for Nevis

Source: Draft Nevis Physical Development Plan (2008)

Nevis will be a distinctive place where everybody is able to enjoy an improving quality of life in a way that respects the environment and culture of the island and keeps it special for future generations.

Principles:

1. **sustainability:** ensuring that development takes place to provide for the needs of the present without compromising the ability of future generations to meet their own needs;
2. **inclusion:** making sure everyone is able to take part in Nevis society and in planning for its future, regardless of gender, age or ability;
3. **partnership:** encouraging Departments, Non Government Organisations, interest groups, businesses, communities, the voluntary sector and individuals to work together;
4. **flexibility:** making sure the Plan is able to adapt to changing economic, environmental, social and cultural circumstances; and
5. **equity**: making sure that the impacts of development are beneficial for every section of the community.

The NPDP identifies the Nevis Peak area and the Camps River Wetland area as two of the four Designated Areas of Protection within which "conservation and enhancement of the natural environment should take precedence over development". Policy 15 makes this more explicit, stating that in these areas "there will be a presumption against any development." This Management Plan includes those two areas, as well as a proposed Marine Protected Area. Policy 16 of the NPDP states that within Coastal Conservation Areas, "Development may be possible, but it must reflect the importance and significance of the natural environment, habitats and local landscape features."

1.3 Process Used to Prepare the Management Plan

The OECS contracted with Island Resources Foundation to prepare a Management Plan for the Proposed Nevis Peak National Park and Camps River Watershed Area, including a Biodiversity Inventory and Status Assessment. Accordingly, the development of this Management Plan followed the approach described in the implementation documents and reiterated as follows:

Task 1: Prepare an Inception Report including Work Plan. January 18 to 27, 2009, Island Resources Foundation held discussions and meetings with NIA representatives and other interested parties to prepare the project Inception Report and Workplan. This process included an open public meeting voluntarily organised for the Department of Physical Planning by the Nevis Historical and Conservation Society. Based on these meetings and discussions, Island Resources Foundation, in open consultation with all the stakeholders, enlisted a Core Committee1 of approximately 17 members. The Core Committee held detailed discussions on:

[1] As of April 15, 2009, the membership of the Core Committee included: Althea Arthurton <*econplanning@yahoo.com*>, Angela Walters-Delpeche <*nevplan@yahoo.com*>, Kevel Lindsay

The process for conducting the assignment; the roles and responsibilities for consultants and personnel involved in the project;

Preliminary background information related to the assignment; and

The construction of an e-mail group for the "Nevis Peak Project" and associated web site <http://groups.yahoo.com/group/NevisPeakProject/> to promote information sharing among the identified stakeholders and other interested parties.

The e-mail group currently has 71 subscribers from among homeowners, NGOs including notably the Nevis Historical and Conservation Society, various economic interest groups such as hoteliers, dive shops, forest guides, local communities and several government agencies. The "Files" archive of that site has over 55 documents available for downloading, and the FLICKR photo web site at <http://sn.im/nevispeakproject [www_flickr_com]> currently has a preliminary, open archive of over 120 photos and other graphics of areas of interest for the Nevis Peak Project.

It is the intention of Island Resources Foundation to continue to support the e-mail group and photo web site indefinitely beyond the conclusion of the Management Plan and Inventory project.

As a result of that first site visit, and in consultation with the Core Committee, and subsequent to discussions and approval of the NIA Department of Physical Planning, Island Resources Foundation finalized an Inception Report and Work Plan for the approval of the OECS-ESDU. The Core Committee is complemented with a technical staff team that includes 11 members, most of whom are also on the Core Committee: Kevel Lindsay, Jim Johnson, Jennifer Lowery, Jean Pierre Bacle, Bruce Potter, Bruce Horwith, Melanie Pearson, Carolyn Thomas, Violet Clark, Michelle René Walters, Lemuel Pemberton, and Greg Philips.

Task 2: Identify and Delineate Boundaries for the Proposed Protected Areas. The Core Committee reviewed previous plans and boundaries including the Planning Department's proposal to OECS/ESDU/PERB. The Terms of Reference for the Nevis Peak and Camps River Watershed area described a "site of approximately 2330 ha [approximately 25% of the total land area of Nevis], consisting of volcanic formations and encompassing rainforest and the island's major watersheds, springs and freshwater lagoon, which feeds into the largest living reef system around Nevis."

As a result of long discussions among all of the Nevisian stakeholders, the 700-foot contour was changed to the 1,000-foot contour ascending to the 3,232-foot Nevis Peak. The proposed protected areas also include the watershed and springs on the NNE of the peak area, descending via Camps Ghaut and wetlands into, and including, the reef system.

This definition, in combination with detailed video graphic studies of the near shore marine environment results in an approximate boundary as highlighted below in Figure 1.

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Task 3: Conduct a Literature Review. Island Resources Foundation consulted with the Core Committee and compiled information on the biodiversity and resource issues within the proposed protected areas, and submitted an annotated bibliography (*Literature Review for the Proposed Nevis Peak National Park and Camps River Watershed Area*) of pertinent documents to OECS.

Task 4: Conduct Field Research on the Biological Resources within the Proposed Protected Area

Four local experts, three community informants, and several students joined four expert-consultants from the NE Caribbean and the USA to conduct field research on the most ecologically significant biodiversity within the study area (ecosystems as well as migratory and resident species), with special emphasis on all endemic, rare and invasive species. The group:

Assessed the current status of the resources;

Assessed the sustainability of current uses;

Assessed threats including overexploitation, habitat loss, impacts of invasive species and global warming;

Produced maps of the characteristic vegetative communities and habitats, with special attention to threatened, rare, or endangered biodiversity priorities;

Identified potential measures to mitigate the threats;

Collected herbarium specimens to be housed at the National Herbarium of Trinidad and Tobago at the University of the West Indies, St. Augustine campus.

[The Acknowledgements section lists the people that participated in the research phase of the project.]

Task 5: Prepare a management plan for the proposed protected area. Recognizing the need to integrate community concerns into the management of the proposed protected area, Island Resources Foundation contracted to interview people in three different areas of the island that would be most impacted by this initiative. Their findings, which are detailed in Appendix C, helped guide the development of this draft Management Plan. The draft Management Plan was presented to the Core Committee on May 19 for review. Reviewers had an additional three weeks to provide comments to Island Resources Foundation, which submitted a "final" draft to the Nevis Island Administration and the Protecting the Eastern Caribbean Region's Biodiversity (PERB) Project of the OECS Environment and Sustainable Development Unit (ESDU) dated 19 June 2009.

Task 6: Submit a Final Project Report to the OECS/ESDU/PERB and the Nevis Island Administration Department of Physical Planning that identifies and discusses lessons learned while conducting this assignment.

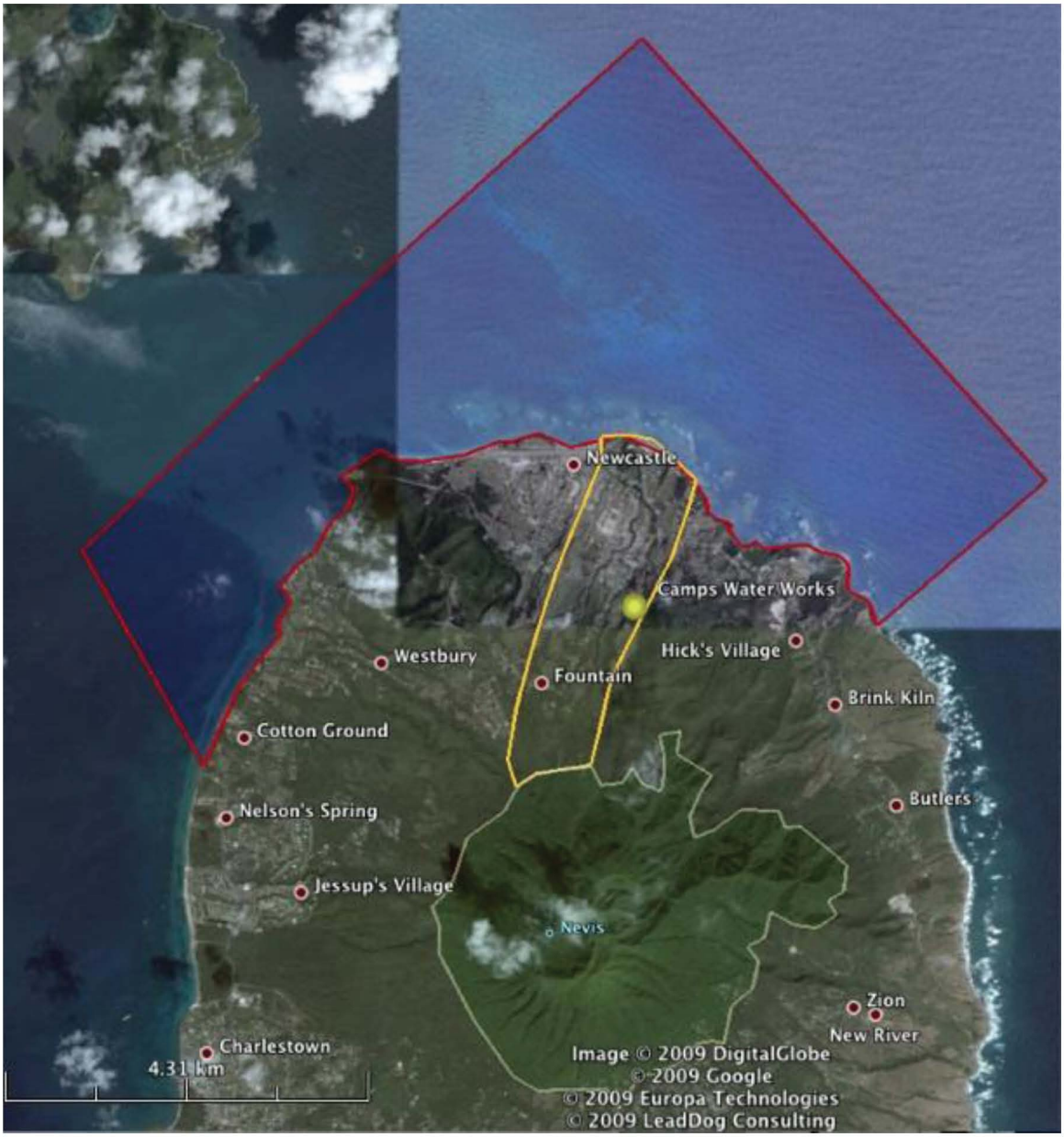


Figure 1. Map of Proposed Protected Areas

(source: Google Earth, April 2009)

Green is 1000' contour boundary proposed for Nevis Peak Park

Yellow is the approximate boundary of Camps River Ghaut proposed protected area

Red is boundary of Nevis coastal and marine protected area

2. MANAGEMENT GOALS AND OBJECTIVES

2.1 Overall Goals for Management of the Protected Area

The core areas being proposed for protection in this Management Plan can be considered a Category IV: Habitat/Species Management Area, within the IUCN Protected Areas and World Heritage Programme scheme. This category is defined as an "area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or meet the requirements of specific species." The site has been subdivided into management units, each with recommended management interventions needed to address the demands being placed on its resources.

Modern protected areas typically share the common goal of partitioning and regulating resources and activities in a manner compatible with sustainable multiple uses. They provide a framework to preserve an area's biodiversity, the rich storehouse of life forms contained within the area. Another common goal is to provide a refuge for education and scientific research. Protected areas also provide a lasting opportunity for all people to see a part of the planet in a natural state, an opportunity all too quickly disappearing in non-protected areas.

2.2 Objectives for Management of the Protected Area

Protect the biodiversity of Nevis;

Protect the island's ability to provide ecosystem services sustainably;

Protect the unique historical, social and cultural resources of Nevis, many of which are still actively used by local populations;

Increase the public's appreciation and awareness of these resources, in particular by developing educational and training opportunities that enhance their sustainable use;

Protect the scenic landscape so important for tourism and so integral to the quality of life of Nevisians.

2.3 Main Principles Guiding this Management Plan

The underlying principles guiding this Management Plan are two-fold and inter-related:

1. Active management is required today to ensure the survival of the natural resources within the protected area; and
2. To be successful, management will require the support of both the community stakeholders and the NIA. In recognition of this requirement, every step of this plan from its inception to its implementation is based on the active participation of the public and the relevant government management agencies.

2.4 The Dynamic Quality of the Management Plan

All natural resource management plans are, or should be, dynamic. In the case of the Protected Areas Management Plan for Nevis Peak National Park and Camps River Watershed Area, the natural resource base, the demands and expectations of users, and the resources to deal with the

Management Plan will vary over time. The Plan and managers and policy makers must be responsive to the shifting priorities required by alterations in both the natural and institutional environments. A principal value of the management plan is in the mechanisms it proposes for reviewing and adjusting management to allow adaptation to the continually changing future.

The organisational arrangements and managerial/jurisdictional tasks leading to sustained use of sensitive public natural resources such as the Nevis Peak National Park and Camps River Watershed Area have rarely been undertaken in Nevis. This plan recommends a deliberately scheduled period of training, testing, and reviewing, and if necessary adapting, under the direction of the Advisory Committee. The "interim management period" is a trial-and-error process that will allow fine tuning to the institutional arrangements for the Park as the project proceeds.

3. SITE DESCRIPTION

As the project suggests, an underlying concept central to this initiative to establish the island's first protected areas, is the realization that the raindrop that supports life at the peak is part of the fabric of the marine environment that supports the rich biodiversity of the sea. Using the 300 metre (1,000 ft) contour as the basic fundamental boundary for the Peak area protects much that warrants being protected, however, it has some major limitations for the protection of the island's wider biodiversity and cultural resources. The lower the contour used as a boundary, the more it protects, but the greater the social and management challenges that are created. The lower slopes include many communities and settlements, and dramatically increase the size of the Park and the scope of work.

If the Park boundaries are based on a more dynamic approach, it may be possible to design the protected areas system to include key habitats, resources and issues, while still addressing the needs of residents and their communities.

In the section that follows, we include not only the core areas of the proposed park, but several other sites that it is important to consider as part of a comprehensive effort to safeguard the natural resources of the island.

3.1 Nevis Peak

The Nevis Peak area refers to all the land above the 300 metre contour (1,000 ft). It contains approximately 12.9 square kilometres (5 square miles) of steep and rugged land. The peak itself is like the hub of a wheel, the highest and most prominent point on the island. The slopes radiate outward like spokes reaching to the coast, and the island's circular shape, gives it an almost perfect conical profile.

If one was to chart his/her way from any point along the coast, up the slope to the peak, the environment becomes wetter and wetter. As the humidity increases, ferns begin to appear, the forests get taller, and the environment appears lush and verdant. The island has over 101 species and varieties of ferns and fern allies, most of which are limited to slopes above 300 m (1,000 ft), where the environment is more moist and cool.

This too is true for the island's birds. The wetlands of the west and northern coasts provide sanctuary to many aquatic species, many limited to coastal flooded environments. Moving further inland, as the wet forests are approached, many forest species become abundant, and many are in fact limited to these upland moist environments. Birds such as the Brown Trembler (*Cinclocerthia ruficauda*) and the Lesser Antillean Flycatcher (*Myiarchus oberi*) are Lesser Antillean endemics, limited to upland forest environments.

But the apparent natural disparity between the species' preferences and the landscapes highlights one of the great challenges of conserving the island's biodiversity and landscapes: should the proposed Park include as much of the critical habitats, representative ecosystems, historical resources and unique and special landscapes of Nevis? If yes, then how can this be accomplished without causing anxiety and opposition from residents?

At 985 metres (3,232 feet), the Peak and adjacent smaller summits are often hidden in cloud cover throughout the day. This gives the area a certain mystique and a sense of remoteness and dark mystery.

These peaks are clothed in a thick blanket of verdant foliage. The forests and woodlands above 300 metres (1,000 feet) consist of evergreen-deciduous and deciduous forests on areas receiving between 127-152 cm (50-60 inches) of annual rainfall, and rainforest, montane forest, palm brake and cloud forests in areas above about 250 cm (90 inches, IRF 1991, p.16) of annual rainfall.

Much of the soils of the proposed park at some distance from the central cone of Nevis peak consist of Rawlin's Gravelly Loam, Nevis Peak silty clays and Hilltop Sandy Loam. The main cone is a volcanic formation, formed sometime after the Pliocene period, and is composed of mainly andesitic deposits, Great Dome docite, Butlers Mountain dacite, intra-crateral dome dacite, volcanic deposits such as lohars, and undifferentiated deposits. The thick clouds and mist of the mountains often hide the fact that the tallest peaks of Nevis, surround the central crater, and create a dramatic jagged landscape when the weather allows unobstructed views of the highest points.

Some of the island's most important freshwater reserves occur above the 300 metre (1,000') level, including parts of Butlers, Camps/Jessups, and the Source. Once the primary sources of public water supplies, these may become important again if population pressures or climate change effects lead to the loss of groundwater supplies from saltwater instrusions into the current groundwater well fields and aquifers. These upland springs are also important cultural and recreational sites for local residents and tourists alike.

Among the other features of the proposed Park are the Camps and New River springs, nature and hiking trails, virgin forests, abandoned plantation roads and ancient settlemens,, lush vegetation that includes giant tree ferns, bamboos, sarsaparilla vines, and medicinal plants. This area also provides habitats for various animals including the Vervet monkey, doves, pigeons, and many invertebrates.

3.1.1 The Source

The Source, as it is locally known, is a natural surface water runoff and spring situated on the southeastern slopes of Nevis Peak above the Rawlins Community, originally tapped for potable water provisions. The area includes hundreds of hectares of montane forests, palm brake and small tracts of rainforests, trails, steep valleys, and wildly dramatic vistas. On the upper slopes, the whistles of tree frogs (Eleutherodactylus johnstonei), the calls of the Lesser Antillean Flycatcher (Myiarchus oberi), and the Brown Trembler (Cinchlocertia ruficauda) intertwine with the ghostly Bridled-Quail Dove (Geotrygon mystacea). This area is home to some of the island's most enigmatic species, many of which are regional endemics.

3.1.2 The Crater

The Crater, as its name suggests, is the remnant of a volcanic cone, the southwestern and western walls of which have collapsed. The area offers dramatic vistas, which hearken back to a distant past when the slopes of Nevis Peak smoked and sizzled from immense volcanic activities.

Today, the Crater walls are clothed in verdant forest, which is the best example of rainforest remaining on Nevis.

3.2 Camps Ghaut and the Coastal Lagoons and Associated Wetlands

The coastal wetland system at the mouth of the Camps River is approximately 3.9 square kilometres (1.5 square miles). It consists mainly of mangrove swamp that provides attractive coastal landscapes and habitats that supports a rich assemblage of birds and invertebrates. It is also a fish nursery, and provides protection to this section of windward coast from erosion by waves and storm surges. The mangrove also protects the marine environment from sedimentation from upland sources.

The Camps River Ghaut provides "communication lanes" from upland areas to the coast, and as a "slice" through the variety of environments encountered between the shore and the 300 metre elevation. In addition, this Ghaut is readily accessible and the springs that feed the water system are a well-known and frequently used recreational site.

3.3 Proposed Marine Protected Area

In the course of investigations for the marine portion of the proposed Nevis Peak National Park and Camps River Watershed Area, we became aware of submarine reconnaissance surveys that had been conducted for the Federal Government by Nevis residents Judith and Bob Foster-Smith, on behalf of Envision <envision.co.uk>. Based on the results of this survey and other data reviewed by the Foster-Smiths, the following description and justification were developed for the marine segment of the Nevis Peak National Park and Camps River Watershed Area.

The remit of the Peak Project is to include a marine element in the proposed National Park. The inclusion of an intertidal and offshore area in the Park will ensure that the complete range of the island's natural habitats is represented. It will also encompass an important cultural aspect of the island's economy: fisheries.

The proposed Marine Protected Area is illustrated in Figure 1 above. It is an area of approximately 35.25 square kilometres (13.6 square miles) bound to the northeast by the outer edge of the stony coral reef, encompassing the 'drop-off' into deep water. The southeastern boundary is situated at right angles to the shore from Hick's Cove (to the south of St James's Church). The northwestern boundary is the mid-line between Nevis and St Kitts, passing through Cow Rocks. The southwestern boundary coincides with the line taken between Nag's Head on St Kitts and St Thomas's Church at Paradise. The site includes approximately 7 miles of coastline.

The coordinates of the principal points of the proposed marine protected area are:

On the northwestern Nevis coast (low tide line) START at:

***17°10'20" 62°37'40"** , north northwest to the centre of the Narrows Channel;*

***17°11'43" 62°38'30"** , north east up the Narrows, to the Cow Rocks*

***17°12'53" 62°37'14.5"** , continuing on the same course, to the corner;*

***17°15'0" 62°34'45"** , turning 90 degrees to the next corner;*

***17°12'10" 62°32'0"** , turning 90 degrees to intersect the NE coast of Nevis at*

17°11'12.7" 62°33'7"

The boundary then follows the low-tide line of the coast to the START point.

3.3.1 Justification for the Boundary

This particular boundary for the proposed Marine Protected Area has been suggested to include the ecological integrity of the site as follows:

The area contains a wide range of marine habitats, namely robust stony coral reef, a distinctive patch of the shallow water 'Elkhorn' coral (which is considered to be one of the most important reef-building corals in the Caribbean), soft coral and algal communities, two types of sea grass beds, and a variety of sediment types. Certain marine organisms are dependent on different types of habitat during the course of their life cycle and so it is essential to include the whole 'mix.' Sandy beaches, rocky shore and mangrove communities form the intertidal zone, further increasing the habitat diversity within the suggested protected site. Importantly, the site also includes a range of exposure levels, from very exposed to sheltered. Together these factors create the basis for a potentially very high diversity of marine life. (See Figure 2 at the end of this sub-section for the preliminary investigations by Envision (UK), although further research is required to fully confirm this).

The outer reef is important for reducing coastal erosion. It acts as a barrier, protecting the island from the impacts of northerly ground swells and waves.

Because of the directional nature of the sea currents around Nevis (Figure 2.4 from the Caribbean Conservation Association/Island Resources Foundation's *Country Environmental Profile for St. Kitts-Nevis*, 1991), the quality of the proposed site has a direct impact on other offshore areas around the island, particularly along the western coast. The fate of the larval stages of many organisms carried to the island from the open ocean, for instance, is largely determined within this proposed marine protected area site; those that survive will continue on along the west coast of the island, providing an important niche in the food chain that sustains the commercial species. Any pollutants or sediment originating in the area (such as from the watershed) will also be carried towards the more sheltered western coast.

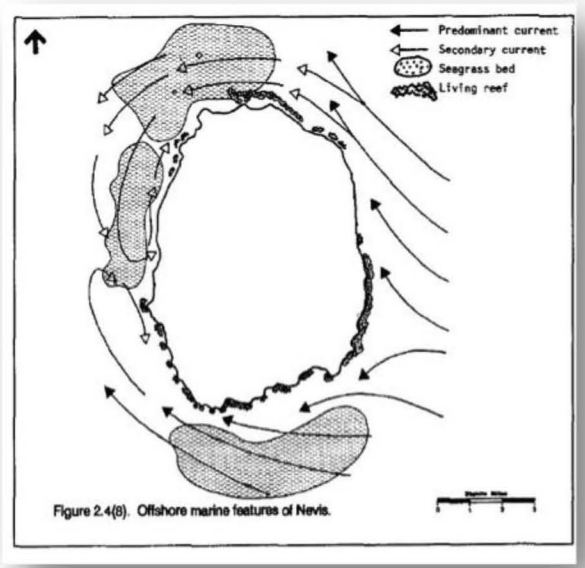


Figure 2.4(8). Offshore marine features of Nevis.

The deep water immediately to the north east of the stony reef is subject to up welling, and this helps to increase the nutrient source within the immediate locality (*i.e.*, the proposed area).

Contained with the proposed area is a nursery ground for both conch and lobster. The conch fishery is important to the local community, contributing approximately EC$ 500,000 annually.

However, it is increasingly in need of an effective ecosystem-based management. Inshore stocks have been depleted. The nursery area plays a vital role in replenishing stocks to over-fished areas. Sustainable management of the nursery should restore productivity, providing spillover additions to adjacent areas. Initial consultations with conch divers indicate that they are beginning to accept the notion that a "no-take" management scheme might eventually generate increased income as a result of increased productivity.

The majority of the intertidal sandy bays included in the proposed area are important Turtle nesting sites. Three species of sea turtle nest on the shores of Nevis: the Hawksbill, the Leatherback and the Green. The waters within the proposed site provide year-round foraging habitat for a fourth species, the Loggerhead. All of these species are considered endangered or critically endangered (IUCN), and each is protected against international trade (CITES).

The process of defining the boundaries also takes into account the need for landmarks so that fishermen and others, who don't have positioning capability on their vessels, can determine their position in relation to the proposed site. Thus, Cow rocks, and St Thomas's Church and Hick's Cove should be specifically mentioned and placed on the map of the site. 2

3.4 Fountain Ghaut and Butlers

Fountain Ghaut and Butlers is located on the northeastern side of Nevis, to the east of the more developed Camps River Ghaut. The Fountain Ghaut drains a deeply indented and steep valley, and is also the location of Madden's Spring, which provides portable water for parts of the island. Several lower volcanic vents are located on both sides of this valley. These peaks are little explored and the biodiversity of this quarter is less well known than other parts of the island.

On the slopes below 300 metres, evergreen-deciduous forest quickly gives way to montane, rainforest and palm break. The area provides a dramatic backdrop and is popular with hikers.

2 Adapted from a report submitted to the Core Committee by Judy and Robert Foster-Smith.

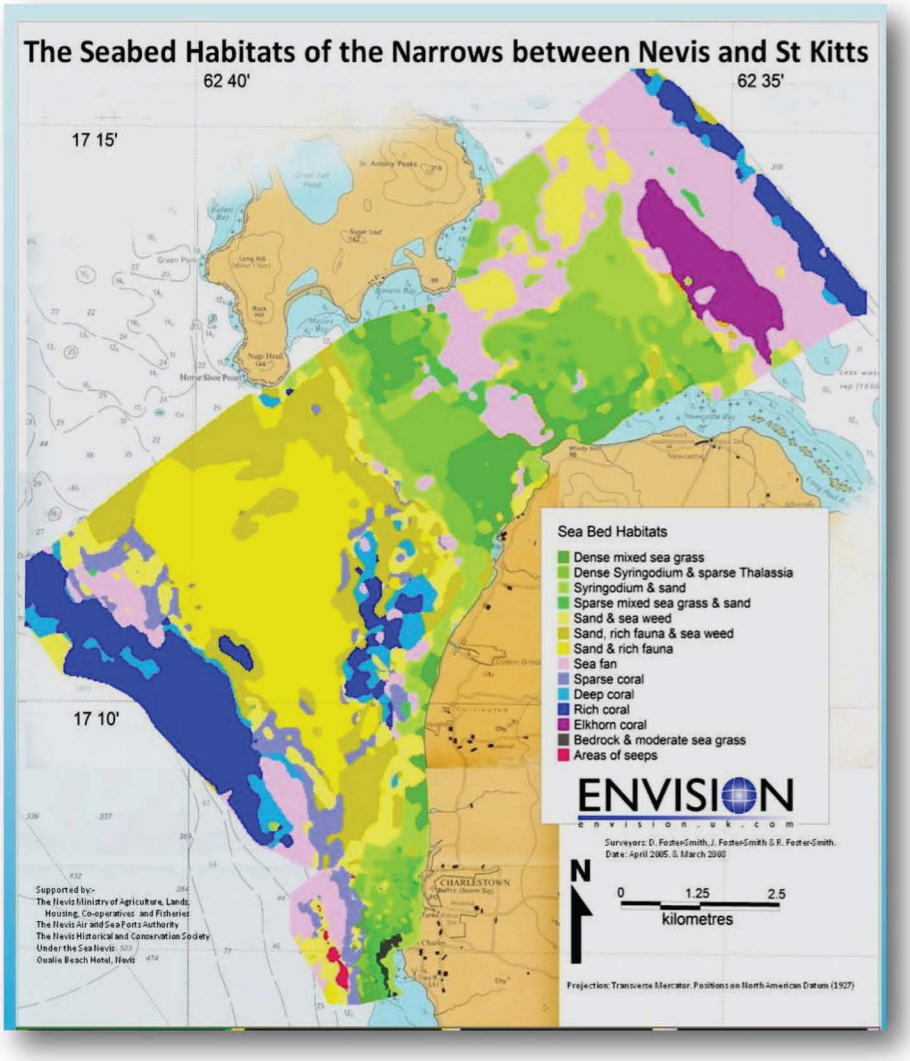


Figure 2. Seabed Habitats of the Narrows between Nevis and St. Kitts. Original map product by Envision.co.uk.

3.5 Endangered Coastal Habitats: Bath Bogs, Pinneys Pond, Page Pond, Parish Pond, Cades Pond and Nelson's Spring

Being close to major towns and urban areas, and located on the coast where development pressures and natural forces are at work, these wetland habitats have undergone severe alterations over the last 400 years. They still provide several important ecological services, however, and are a unique part of Nevisians' natural heritage that if lost cannot easily be replaced. They contain fresh and brackish water, a mixture of marshes, mudflats, estuarine mangroves, and ghauts which serve as connective circuits between the sea and the peak.

These lagoonal habitats are important refuges for both resident and migrant birds, crustaceans, adult and juvenile fish, and myriad other invertebrates. The Draft Nevis Physical Development Plan of 2008 highlights their function as a nursery and sanctuary for juvenile fish.

These coastal lagoons should be managed as part of a complex coastal wetlands system to preserve and protect the biodiversity richness and representative uniqueness they represent. Eventually this should be part of a national Nevis watershed management plan and strategy developed under the auspices of the Park, but quick and effective protection from coastal development incursions is essential. They are of tremendous value, and cannot be replaced once they are lost.

3.6 Round Hill

Round Hill, a dry coastal volcanic remnant located on the northern slopes of the island, has some of the best examples of Lesser Antillean Caribbean dry forest on Nevis, especially on the northern, northeastern and northwestern slopes of the Hill. These areas are critically endangered and much of the steeper upland areas of the hill are already being developed. Protecting the remaining areas of this unique forest community is a priority and should be included in the protection offered by the Park.

4. CONSERVATION TARGETS

CONSERVATION TARGET SITE	STATUS	ACTION OPTIONS AND OTHER RECOMMENDATIONS
The Source	There are no major threats from development to the Source and surrounding area. However, freshwater capture may have adverse impacts on the environment, the species, the ecological services and the processes that are connected to the natural runoff of water. (See Appendix C.2. for community survey results.)	• In the long-term, studies should determine the effects of harvesting the water at the source on biodiversity, ecosystem integrity and other adverse impacts. Depending on findings, it may be necessary to implement various reduce the impacts of harvesting on the area's biodiversity, for example, creating a series artificial pools along the ghaut.
The Crater	No major development threats are known.	• It may be necessary to include some areas of forests along the Crater ghaut below the 300 metre contour in the Nevis Peak National Park in order to maintain the integrity of the Crater area.
Camps Ghaut (and its Coastal Lagoons and Associated Wetlands)	The wetland system of Camps is threatened by development on the east and by agriculture on the west. Poorly regulated sediment and erosion control on construction sites, and inadequate stormwater runoff controls permit major pulses of sediments that impact sea grass and coral reef systems with especially severe repercussions given increased stresses anticipated from global warming effects. (See Appendix C.3.)	• Establish a strict buffer zone along the coastal lagoons and wetlands to reduce the impact of development pressures on the ecology of the ecosystems. • Remove solid waste from the lagoons. Efforts will also need to be made to discourage residents from using the wetlands for disposing of waste. • Reduce land clearing on the upper slopes to help to minimize excessive sediment runoff.
Marine Protected Area	Fishermen and local residents have generally supported the idea of protected marine areas to preserve the local fishery (see survey results in Appendix C.1.), as long as livelihoods are supported. The Federation government has had specific discussions about a marine protected area, but authority over such a shared resource is not clear, especially in view of the new conservation legislation.	• Determination of management structure for the Nevis Marine Protected Area, and its relationship to both Nevis terrestrial protected areas and the Federation control of marine areas.
Fountain Ghaut and Butlers	No specific threats are known.	• In this area, the Park boundary should be adjusted downward to the 229 metre contour to include evergreen-deciduous forests and woodlands.

CONSERVATION TARGET SITE	STATUS	ACTION OPTIONS AND OTHER RECOMMENDATIONS
Coastal Lagoons: Bath Bogs, Pinneys Pond, Page Pond, Parish Pond, Cades Pond and Nelson's Spring	All of these coastal lagoon and wetlands are under tremendous development pressures and severe pollution. In particular, the Bath Bog and spring is reportedly threatened by groundwater harvesting, which affects the level of runoff from the spring.	• These coastal lagoons should be offered some form of formal protection as part of the overall Nevis Peak National Park system of protected areas. • They should be part of an island-wide watershed management plan to protect and manage all remaining lagoon habitats and riparian corridors, to protect the biodiversity richness and representative uniqueness they represent. • Consider special regulations and controls for pesticide, herbicide and fertilizer application to lawns and pastures adjacent to lagoons.
Round Hill	The forest of Round Hill is fast disappearing, and on the upper slopes of the southern, western and northeastern upper areas, much of the forest is now fragmented and slated for development.	• Protect the remaining forests of Round Hill.

5. MANAGEMENT ISSUES

5.1 Institutional Arrangements

5.1.1 Ministry of the Environment

A management and administrative framework for protected areas in Nevis has been developed in the National Conservation and Environmental Management Bill (NCEMA 2005). That bill would place protected areas in Nevis within the portfolio of the Department "to which responsibility for the environment is assigned", and it allows the Minister to delegate management responsibility to "the Nevis National Trust or any other duly constituted organisation with an interest in conservation and the competence to manage the protected area, as appropriate".

5.1.2 Nevis National Trust

Although NCEMA (2005) provides for the creation of the Nevis National Trust as a statutory corporation, it does not provide information about this Trust. Those details are offered in the draft Nevis National Trust Ordinance (2007).

The draft Nevis National Trust Ordinance (2007) calls for a Council to administer the affairs of the Nevis National Trust. The Council of the NNT would consist of 17 members: 9 elected from among the membership at the annual general meeting of the NNT; 6 shall be appointed by the Deputy Governor-General after consultation with the Cabinet of the Nevis Island Administration; 1 shall be appointed by the University of West Indies 1 student representative appointed by the Council.

The Council would have an executive committee composed of four officers and the Executive Director.

5.1.3 Nevis Peak National Park Advisory Committee

Given the criticality of stakeholder participation, an Advisory Committee, with a mandate to advise the NNT on matters specifically pertaining to the proposed Park, should be established. Until such time that the NNT or some comparable body is established, the Advisory Committee should lead the implementation of the Park project. The Core Committee that was created at the onset of this project is the obvious foundation for this Advisory Committee. Its membership includes representation of the appropriate Government agencies, business interests, conservationists, and local stakeholders.

Since many residents do not yet feel a part of the Park initiative, representatives of the community-based organisations have a key role to play to organize and present these concerns to the Advisory Committee. The Advisory Committee, with its links reaching out to the wider Nevis community, can ensure that the public is informed about, and involved in, stewarding and protecting the Park.

5.1.4 Agency Coordination

As indicated by the presence of several NIA agencies on the Core Committee, the protected areas system will necessarily involve overlapping roles and responsibilities within the Government. Coordinating the actions of these agencies will be critical in order to avoid (1) wasting limited

resources through duplication of efforts, (2) potential conflicts and (3) allowing necessary actions to go ignored by falling through bureaucratic gaps.

In addition, it would be useful for each of these regulatory bodies to review its operating procedures through a "Park lens" to ensure that, at a minimum, its actions are consistent with the Management Plan, and more constructively, that its actions actively promote the protected areas system.

For example, if it has not already done so, the Physical Planning Department should consider requiring contractors to make advance payments to allow adequate review, inspection, and monitoring of all major development activities that might impact the Park; and to provide bonds and/or proof of insurance to redress potential environmental damages. The Department of Agriculture, in collaboration with Ports Authority, could develop inspection and quarantine protocols that would lessen the risk of introducing non-native invasive species and diseases. There could be incentives and/or requirements that would encourage local nurseries to produce landscaping materials that will be needed for major developments.

5.2 Park Administration

It is premature in the process of creating the Park to provide meaningful recommendations about how to administer it. We recommend that the project undergo a separate needs assessment at the appropriate time in the future, to better match staffing, training, infrastructure and equipment requirements to the availability of financial resources to sustain them.

5.3 Biodiversity Management Issues

5.3.1 Invasive Species

The issue of what is "native" and what is "introduced" can be complex. Amerindians in Nevis may have had a role in introducing several species that we today consider "native" to the island. Species such as the Red-footed Tortoise (*Geochelone carbonaria*), the Green Iguana (*Iguana iguana*), the Lesser Antillean Iguana (*I. delicatissima*), the Agouti or Coney (*Dasyprocta* sp.), native rodents (*Megalomys*, formerly *Oryzomys*), snakes (Boa constrictor), as well as many plants such as the pineapple, wild peppers, papaya, grasses and sedges, soursap, sugar apple, tobacco and roucou (*Bixa* sp.) most likely were moved widely within the Caribbean by Amerindians. But the impact of these new species on whatever flora and fauna they encountered is thought to be very limited, perhaps because these peculiarly West Indian animals are easily moved from island to island by storms and ocean currents.

With the arrival of Europeans, and subsequently African slaves, to the shores of Nevis nearly 400 years ago, came a set of species that acted quite differently. Many of these species were more invasive and posed significant new challenges for the native biodiversity of the island. The colonists brought many new plants and land practices, most notably sugarcane and monocultural agriculture.

Vervet Monkeys (*Chlorocebus sabaeus*) were an early introduction, and with no natural predators to control them, their population has swelled. Accidental introductions occurred of Old World rodents, the Black or Tree Rat (*Ratttus rattus*), the Brown or Roof Rat (R. *norvegicus*) and the House Mouse (*Mus musculus*). These species are associated with human habitation, but they can survive in the wild. By the 19th Century, wildlife in Nevis were being impacted by the deliberate

introduction of the Indian Mongoose (*Herpestes javanicus*), brought to the island to control sugarcane losses to rats. Another deliberate introduction was the Marine Toad (*Bufo marinus*), brought in the 19th Century from Central America, to rid the island of the sugarcane boring beetle. The Toad ignored the beetle and instead began devouring native species.

In the mid-1990s, the Cuban Tree Frog (*Osteopilus septentrionalis*) was unwittingly introduced around the Four Season's Resort, as a hitchhiker in potted plants, from where it quickly spread throughout the entire island. The Palm blight affecting many of the island's coconut trees may have the same origin. In both of these cases, early action to control these pests would have been simple and inexpensive. Once that opportunity passes, control can become prohibitively expensive and in some cases, the damage may be irreversible. Invasive species have been identified as the second leading cause of the loss of biodiversity in the US, according to that country's largest conservation organisation, The Nature Conservancy. The backbone of the group's effort to deal with this global threat focuses on early detection and rapid response (EDDR).

The impacts of invasive species are more thoroughly documented and explored in Appendix A.

Recommendations for Action:

Consider establishing the Early Detection and Rapid Response (EDDR) protocol for invasice species control.

Control programmes for selected species such as the mongoose (especially in sea turtle nesting areas) and Green Monkey.

5.3.2 Ensuring Ecological Integrity: Reef to Peak

The Nevis Peak and surrounding summits are as connected to the sea as a finger is to the heart of a person. The rhythms of life move up and down the corridors of the ghauts that connect the forest to the shore and the sea. The water from rains rushes downhill to the coast, carrying sediments, nutrients, seeds, and other vital matter, but the connection runs both directions thanks to the animals that use these corridors. The seemingly discrete components of the landscape exists only in the mind, nature does not operate in this way. For example, bats use the wetlands for freshwater and for prey, while using the upland forest for cover, shelter and food. They move easily between both environments under the sanctuary of the riparian corridors. The same can be said for many bird species.

During severe dry periods, as has just occurred between February and early May 2009, many species abandon the drier areas lower downslope and along the coast, and move up into the steeper and wetter hinterlands to find shelter, water, food and sanctuary.

In the steep upland areas the Nevisian water authority captures natural runoff and spring flow. Permanent surface runoff is scarce on Nevis, and several plants and animals depend on the habitats that these sources of water create. There is reason to suspect that some species of birds, invertebrates, bats, reptiles and plants are vulnerable to reductions in this water supply, though to what extent is not known since it has not been researched and monitored.

Recommendations for Action:

Protect the ridge to reef networks of wetlands and riparian corridors, which connect the marine communities with the wet foggy peaks of the interior.

Investigate possible impacts of water source capture on the biodiversity of the island and develop a mitigation plan (*e.g.*, creating permanent pools in the upland areas and reducing water harvesting in some areas).

Restore coastal wetland areas to include native flora and invertebrate fauna such as freshwater prawns, fish, and micro-invertebrate species.

5.4 Management Tools

5.4.1 Community Engagement

As noted elsewhere in this Management Plan, successful stewardship of the natural resources of Nevis requires the participation of those that use these resources. Participation in this context means assisting in the Plan's development and its implementation — and covers the gamut of activities from assisting in identifying the resources, to sharing perceptions on their value, threats, and acceptable management options. The agency given responsibility to manage the Park must have representation from the communities most affected by that agency's decisions. Those representatives serve as the two-way link between the agency and the community, informing and shaping the actions of both ends of the link. Community members engage in consensus building, collaborate on management tasks, and serve in a "watchdog" role.

5.4.2 Interpretation/Education

As with Parks Administration, it is recommended that there be a needs assessment conducted at a later stage to develop an appropriate Interpretation and Education programme. Each settlement/village/town on Nevis has a connection to Nevis Peak, historically and to the present, and this should be highlighted and incorporated into the Park's education and awareness programme. Other components include developing a youth education focus, especially in the schools and through youth groups.

5.4.3 Research

For research to be effective, relevant and meaningful to the development of the Park, an institutional structure is required to support and maintain research foci and initiatives. There will be several areas of research focus, including cultural/heritage, ecological, social, etc.

To support research initiatives, the Park should have an ecologist on staff, as well as a conservator in charge of cultural/heritage issues.

Information from research should help guide management options, involve local residents and communities, inform, always be a high priority, and focus on the needs of the Park.

Research foci and initiatives should be spelt out as part of the overall annual programme review and long-term planning for the Park. Each department should provide a plan for its research focus.

5.4.4 Monitoring and Adaptive Management

The monitoring plan should provide accurate and relevant information on changes in key physical, biological and socio-economic parameters within the Park, to allow for effective management in support of the Park's goals and objectives. The NPDP notes that "Development is a dynamic process and the economic, social and environmental context within which it takes place is changing at a seemingly increasing rate. ... It is essential that the [Nevis Physical Development] Plan is monitored in order that it can respond to changing circumstances." This statement is as relevant for this Parks Management Plan as it is for the NPDP. The Monitoring section of the NPDP is commendable for its simplicity, relevance and feasibility; we have drawn from it liberally as a model for the Parks Management Plan to revise and refine as the project proceeds.

The Plan should be reviewed annually, to consider:

The effectiveness of the Plan in achieving its goals and objectives;

Whether the Plan remains relevant to the needs of the Island and that is responsive to the needs of the community; and

Proposals for any alterations or additions to the Plan which appear to be appropriate.

A series of indicators need to be established and an annual monitoring report prepared by the agency responsible for the Park after 12 months of the Plan's formal adoption. To be effective indicators need to be clear and measurable. The list below is preliminary and is just meant to be illustrative:

A list of applications received by the Planning Department for development with the Park and their status; i.e., the decisions made by the Planning Department; whether EIA was required; for those refused, the number of applications subsequently upheld on appeal;

The number of planning decisions made for development within the Park where Park Agency had not been consulted;

The number of tour operators using the Park; the number of their clients;

Changes in the population of key indicator conservation species and changes in abundance and health of priority conservation communities.

6. IMPLEMENTATION STRATEGY

Appoint Advisory Committee: Presumably this would involve renaming/transforming the Core Committee. This group would have lead responsibility for ongoing implementation of the Parks project, dealing with matters such as maintaining the source documents and bibliography.

Decree for Interim Management Period: Some sort of NIA formal approval for the Park project enabling it to continue beyond the end of the OECS grant. This "approval" could be from the Planning Department in a public meeting/notice explaining how it proposes to implement the project.

Determine Interim Regulations.

Develop staff through hire and/or assignment: This is an interim step in advance of an administration needs assessment.

Conduct an administration needs assessment.

Submit legislative authorisation for NNT.

Submit legislative authorisation for the Park.

APPENDICES

Appendix A	Detailed Biophysical Characteristics, including list of Important Flora and Fauna within Proposed Park: this is the separate deliverable for this project: ***Terrestrial Biodiversity Inventory and Status Assessment for the Proposed Nevis Peak Protected Area***	
Appendix B:	Boundary Recommendations, the separate project deliverable: **BOUNDARY RECOMMENDATIONS: Nevis Peak National Park and Camps River Watershed**	
Appendix C:	Community Surveys	
	St. James	Survey and Analysis by Lemuel Pemberton
	Gingerland-Rawlins	Survey and Analysis by Violet Clarke
	Camps River Ghaut	Survey and Analysis by Greg Philips

Appendix C.1.
Attitudes of Residents of St. James Parish to the Creation of a Marine Protected Area

Survey administered and analyzed by Lemuel Pemberton

Introduction

The Organization of Eastern Caribbean States (OECS) in conjunction with the United States Agency for International Development (USAID) and the Nevis Island Administration (NIA) are exploring the feasibility of creating a marine protected area off the north coast of Nevis. The main aims of this effort are to conserve biodiversity and the creation of sustainable livelihoods for all resource users. Preliminary work involved a process of local consultations. In the case of the Proposed Marine Protected Area (MPA) a total of 42 self administered questionnaires (see appendix) were completed. Residents of coastal communities and resource users in the St. James area from Mosquito Bay to Butlers Village were interviewed.

(a) Age Group of interviewees

Most of the interviewees were in the 31 to 50 age group with no person in the under 19 age group been interviewed. However, the 19 – 60 age group that made up the bulk of the interviewees were the main resource users in the area (Figure 1).

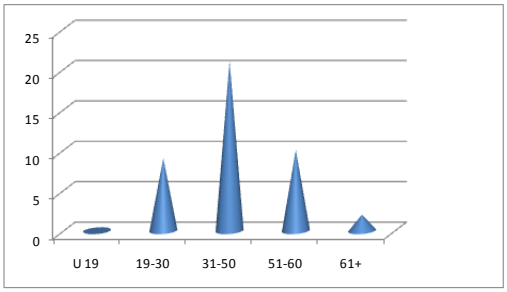


Figure 1: Age distribution of interviewees

(b) More males than females were interviewed (Figure 2). The males are the main marine resource users though females to use marine resources though mainly from a consumer rather than a harvester perspective.

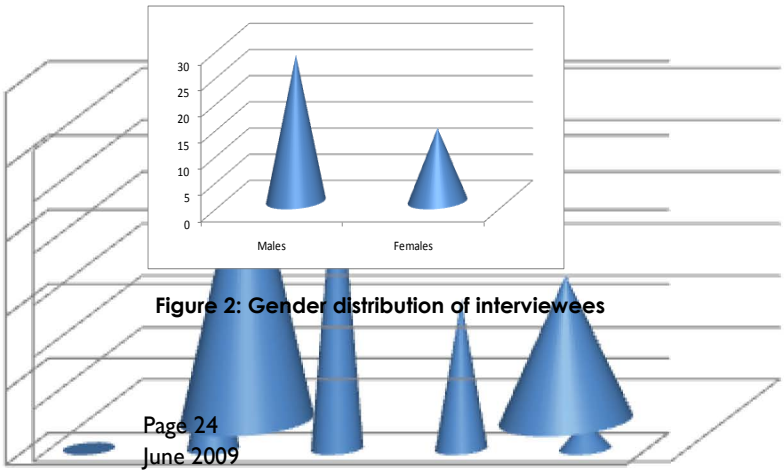


Figure 2: Gender distribution of interviewees

(c) Interviewees by residence

Residents were fairly well distributed across the communities with the largest number been residents of Newcastle.

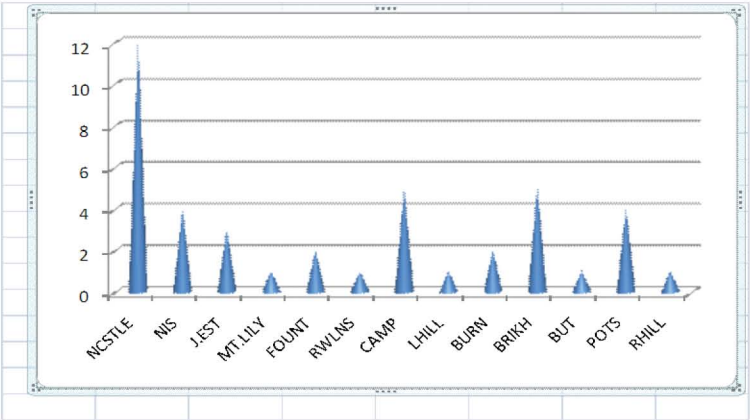


Figure 3: Place of residence of interviewees

(d) The vast majority of the interviewees were born in Nevis (Fig. 4)

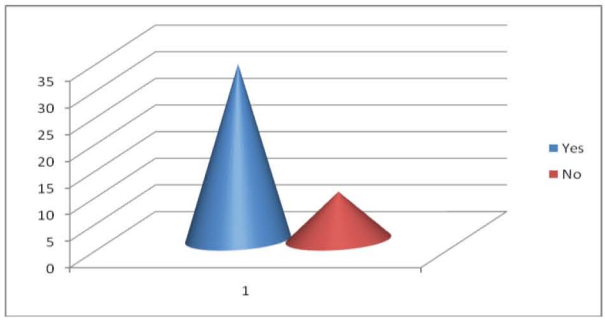


Figure 4: Indication of whether interviewees were born in Nevis

(e) The largest number of interviewees was fishermen (Table 1).

Fishermen	Business Persons	Civil Servants	Construction Workers	Hotel Workers	Farmer	Sailor	Retired	Total
14	09	08	04	04	01	01	01	42

Table 1: Interviewees by occupation

(f) A small number of the interviewees **owned or used land in the Camps River Valley** (Figure 5).

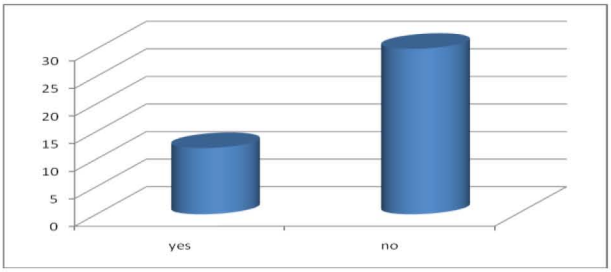


Figure 5: Interviewees ownership or use of land in Camps River Valley

(g) The **greatest use of land** in Camps River Valley was Residential (Table 2).

Residential	Farming	Industrial	Hotel	Other	Total
06	03	00	01	02	12

Table 2: Interviewees use of land in Camps River Valley

(h) The majority of the interviewees were **in favour of the establishment** of the MPA.

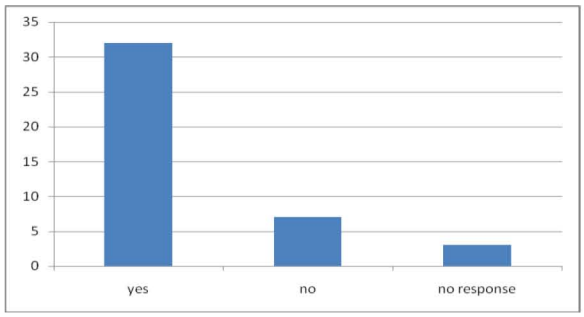


Figure 6: Interviewees attitudes to proposed protected area

(i) Generally speaking interviewees frequently **use Camps River Valley** and sea nearby (Figure 7).

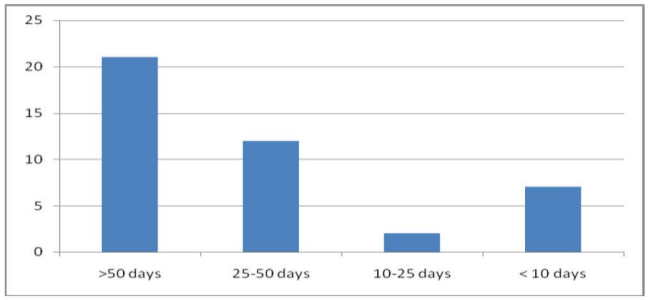


Figure 7: Number of days per year interviewees use Camps River Valley area or sea nearby

(j) **Resources of the Camps River valley and the sea nearby that were used** most by interviewees were fish, the beach, fruits and vegetables, hotel services and water (Table 3). The fish and the beach are apparently extremely important to residents.

Charcoal	Fish	Fruits and Vegetables	Pottery	Hotel Services	Beach	Water	Timber	Other	Total
02	37	23	07	27	35	20	01	03	155

Table 3: Residents use of resources in the Camps River Valley area and the sea nearby

(k) Just over 50% of interviewees **did some fishing** in the proposed MPA (Table 4) indicating that they would be affected directly by its creation.

Once per week	Twice per week or more	Hardly ever	Not at all	Total
04	12	10	16	42

Table 4: Frequency with which interviewees fish in Newcastle area

(l) Most interviewees asserted that that **fish catch in the Newcastle area had decreased** over the years (Table 5).

Increased	Decreased	No change	Do not know	Total
04	29	05	04	42

Table 5: Residents perceptions of fish catch in Newcastle area

(m) The largest number of respondents believed that the amount of coral cover in the sea offshore the Newcastle area has decreased over the years (Table 6).

Increased	Decreased	No Change	Do not know	Total
02	22	07	11	42

Table 6: Residents perceptions of the amount of coral cover in sea off Newcastle area

(n) Respondents were of the opinion that death of the coral reefs, cutting of the mangroves and global warming were the main reasons for coastal erosion in the Newcastle area (Table 7).

Airport	Global warming	Cutting of mangroves	Death of coral reefs	other	Total
02	13	13	15	09	52

Table 7: Reasons for coastal erosion in Newcastle area

(o) 50 % of the respondents believed that the proposed **MPA was currently overfished**. However, about 26% were undecided on the issue and 21% disagreed that the area was overfished (Figure 8).

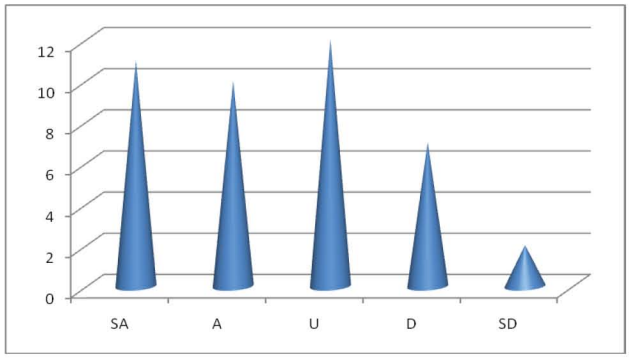


Figure 8: Perception of overfishing in proposed marine protected area

(p) The vast majority of respondents believed **that destructive practices should not take place** in the Camps River Valley and Newcastle wetland (Figure 9).

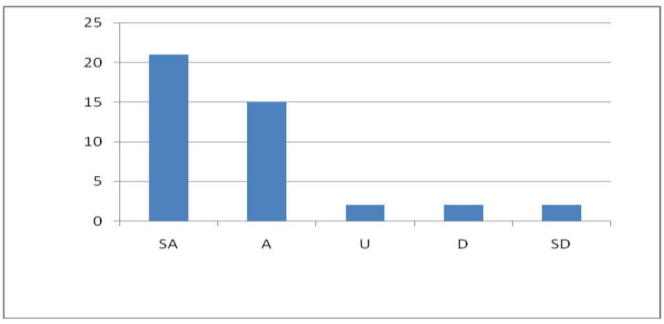


Figure 9: Destructive practices should not take place in Camps River Valley and Newcastle wetland

(q) Most respondents believed that a **marine protected area will result in an increase in fish stocks** in the proposed marine protected area and places nearby (Figure 10).

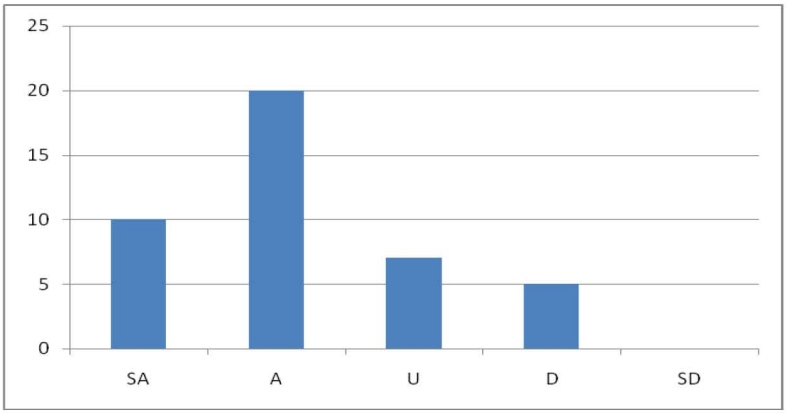


Figure 10: Perception that proposed MPA will result in increased fish stocks

(r) Most residents believed that a **proposed MPA will benefit the people** of St. James (Figure 11).

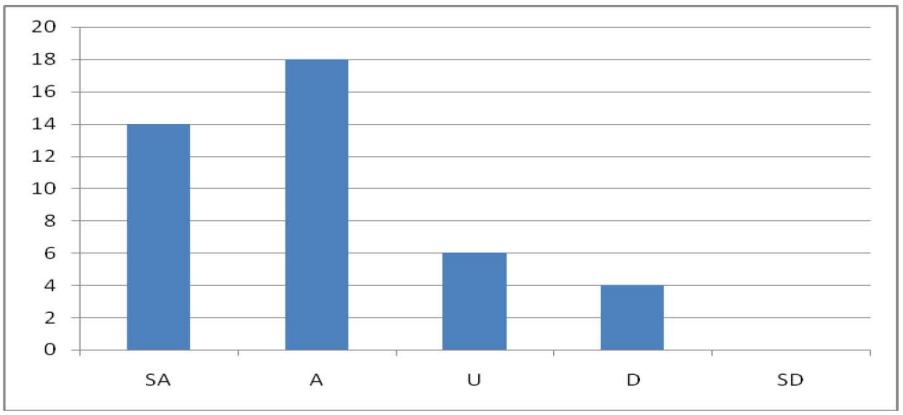


Figure 11: Residents perceptions of a marine protected area benefitting the people of St. James

(s) Most residents believed **that stocks of fish lobster and conch could be exhausted** (Figure 12).

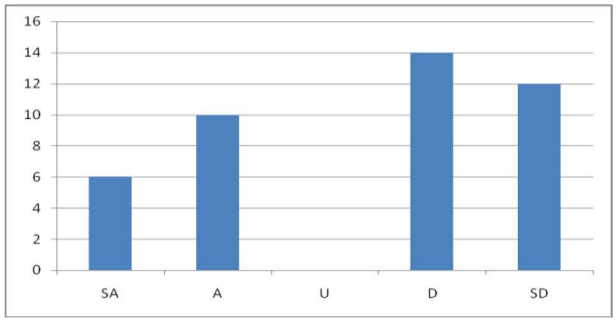


Figure 12: Stocks of fish, conch and lobster can never be exhausted

(t) Most residents agreed that fishing pressure on fish stocks offshore the Newcastle area has increased over the years (Figure 13).

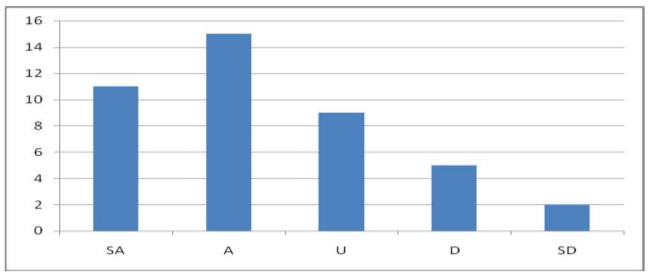


Figure 13: Residents perceptions of increased fishing in Newcastle area in recent years

(u) 55% the residents believed that the **government was the best institution** to manage the proposed marine protected area with 31 % disagreeing and 14 % undecided (Figure 14).

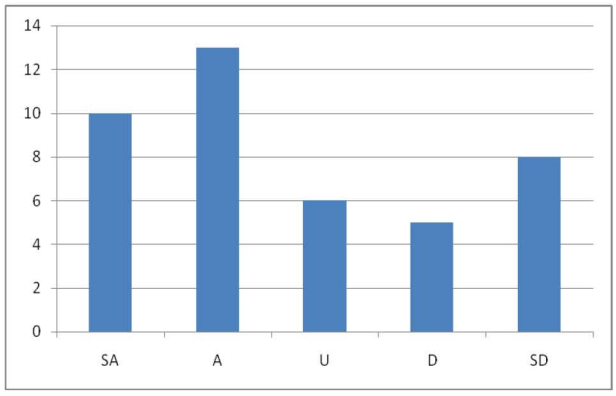


Figure 14: Residents perceptions of government as best institution to manage proposed marine protected area

Appendix C.2.
A Survey and Analysis of the Need for a Terrestrial Protected Area by Residents of Rawlins, Nevis

By Violet Clarke
Vice President of the Maroon Community Group
April 22nd 2009

The following survey analysis is part of an OECS project funded by USAID to assist Member States in the protection and maintenance of the biodiversity of the Eastern Caribbean region. The project entitled 'Protecting the Eastern Caribbean Region's Biodiversity' (PERB) recognises the socio-economic impact biodiversity has on all of the OECS islands. The importance of preserving and cultivating a rich biodiversity brings enormous benefits from greater levels of agricultural productivity, richer sources of fuel, construction materials, and raw material for medicine along with the aesthetic value a thriving ecosystem has in attracting tourists. However the United Nations General Assembly has expressed concern for the Caribbean's unique terrestrial systems such as coastal and rain forests, and marine systems such as mangrove wetlands, and coral reefs. It was noted that the threat to these this systems was mainly associated with 'poorly planned developments, population growth, unsustainable agricultural and tourism activities, pollution and overexploitation of natural resources.

The sustainable use of the environment in promoting the heritage and culture of an island is a strategy many Government Ministries are exploring and promoting. Along with this is the increasing pressure on the environment from hotel developers, tourists and a growing population, with recreational needs. The need therefore to assist Government Ministries in the development and implementation of national policies supported by the appropriate legislation to manage and conserve the region's biodiversity is a critical feature of this project.

The project consists of 4 components. Component 1 looks at assisting countries to develop national harmonised legislation relating to biodiversity conservation. Component 2 focuses on biodiversity conservation at the site level and Member States have been asked to identify sites within their countries to receive financial and technical support. The site selected for Nevis is Nevis Peak and Camp River Watershed Areas. Component 3 seeks to enhance the responsibility of the private sector in biodiversity management through policies, institutional guidelines, along with visitor infrastructure design and law enforcement with appropriate indicators for monitoring the impact of tourism on the region's biodiversity. Component 4 aims to improve the capacity of Member States to increase public awareness. This will be done by producing and distributing public awareness products that highlight biodiversity issues of the region.

This survey was born out of the express need of a local NGO group to inform their community and acquire the views and opinions of residents in an area most likely to be affected by the establishment of a protected area. Violet Clarke, the Vice President of The Maroon Community Group was commissioned to share information concerning this project and conduct face to face interviews using a questionnaire. The survey was conducted from April 6th 2009- April 17th 2009, with a sample size of 40 community members.

The summary findings are as follows:

- The most popular category for protection was a National park, followed by a Managed Resource Protected Area and a Protected Landscape/Seascape.

- 57.5% of the respondents express a wish to maintain the 1000ft mark as the level from which the designated protected area should begin. 27.5% conclude it should be revised to commence at 1250ft.

- 32.5 % were in favour of the establishment of a group consisting of The Government, an NGO and an appointed Conservation Commission, to manage the protected area.

- The majority of the respondents did not feel that the proposed area was endangered.

- 25% of the respondents claim to owned land within the protected area from between 1000ft and 1300ft

- The respondents reported that they visited the proposed protected area occasionally, with walking/hiking being the most common activity undertaken.

- 65% of the respondents expressed their willingness to be involved in future discussions concerning the proposed protected area

Recommendations

- Continue plans for the proposed protected area in the form of a National Park

- Educate the community about the current laws concerning building above the 1000ft contour

- Provide structures that monitor and enforce laws concerning biodiversity conservation.

- Cultivate the willingness of the community to engage in dialogue concerning conservation issues through local community groups and public service announcements.

- Begin to formulate the structure and function of a management team who will reflect key aspects of our society i.e. Government Ministries, Conservationists, NGO, and Community Groups.

Methodology

The survey was conducted between April 6th 2009 and April 17th 2009 in face to face interviews averaging 25 minutes each. This method was chosen to ensure a high response rate and to obtain a higher level of interaction with the local community. The respondents were given an outline of the project detailing the purpose of the survey being conducted and the importance of their contribution in preserving the natural beauty of Nevis. The respondents were selected from the Rawlins Village and surrounding areas as these areas have residents who live in and border the proposed protected area. Respondents were also selected from a range of professions and stakeholders including Hoteliers, Shopkeepers, Home owners, Farmers, Developers and Tour Guides, to provide a diverse perspective of the conservation needs in the area.

Figure 1 presents the annotated questionnaire.

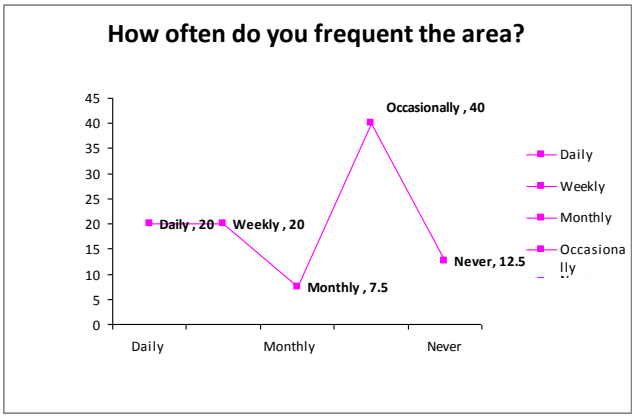


Figure 1: Frequency of area usage.

The majority of the respondents ranged between age 30 and 50. 40% of the respondents reported that they visited the area 1000ft and above sea level on occasion, with walking/hiking being the most common activity undertaken. A correlation between age and the frequency at which people are using the area is yet determined. However reasons given by respondents for the occasional use of this area included time restraints due to work commitments, lack of interest in the area for recreation and the difficulty in accessing forest areas. When asked whether their family had lived or worked above the 1000ft contour, 30% of the respondents said yes and claimed to own land between 1000ft and 1300ft. Only 27.5% of the respondents believed the area was endangered yet despite this, the occasional use of Nevis Peak and land ownership within the protected area, an overwhelming 87.5% of the respondents agreed to the identified area becoming a Nevis Protected Area.

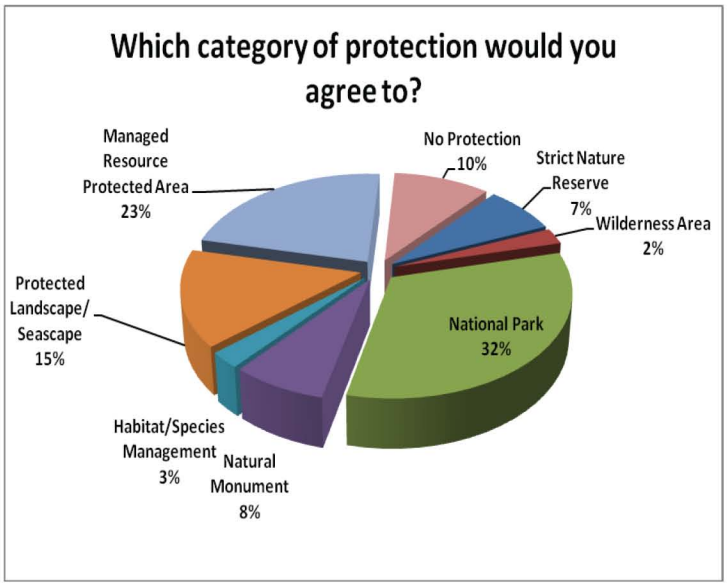


Figure 2: The proposed category of protection

Thirty-two percent (32%) wanted this area to be designated as a National Park, 23% preferred a Managed Resource Protected Area and 15% considered it becoming a Protected Landscape and Seascape. 50% of the current activity centred on walking and hiking, while 15% was shared equally with the activity surrounding private homes and Herbert Heights, a recreational eco-site. There seemed to be some correlation between the type of activity residents were engaged in and the level of protection chosen. Residents are reported to have a socio-economic link with the proposed protected area and carefully considered the levels of protection that would sustain that link along with protecting and more importantly preserving their rich natural heritage for future generations. Residents conveyed the importance of a National Park in the sustainable development of their community through harnessing the possible revenue provided by large numbers of visitors frequenting the area to access the mountain trails. They discussed the Park's importance in generating jobs for the community, such as tour guides, forestry officers, eco-site managers, park rangers, researchers, administrators and community police. The importance of monitoring and directing the number of visitors to the protected area was well discussed as a means of protecting Natural Monuments, such as The Source. Many residents express their discomfort concerning visitors having unsupervised access to a main water source. It was advocated that the Source be considered as a Protected Natural Monument, within the National Park. This would involve having someone posted at the location to assist in maintenance and monitoring while also being able to provide information and assistance to visitors.

Much discussion was generated concerning the management of a protected area. 32% of the respondents wanted to see a management group created for the sole purpose of developing, monitoring and managing all aspects of the park. The response varied between not having a managing group, having a group consisting of The Government and an appointed Conservation Commission and giving the responsibility to an appointed Conservation Commission, ensuring that such a group would include Government forestry officers and local environmental groups. Residents wanted to be assured that such a management group should reflect aspects of their local communities and would not come under sole control of a single previously established group. Their political persuasion was a major factor in opting for a combined group management system.

When asked if they would like to be involved in future discussions concerning the proposed protected area, 65% of the respondents agreed. The survey sample size proved to be a disadvantage as residents expressed an interest in participating in the study long after the number of respondents was acquired. This demonstrates the level of interest and concern local resident have for their environment. Any further development concerning a protected area should seek to cultivate this interest and allow local residents to take ownership of the conservation issues that directly affect their community.

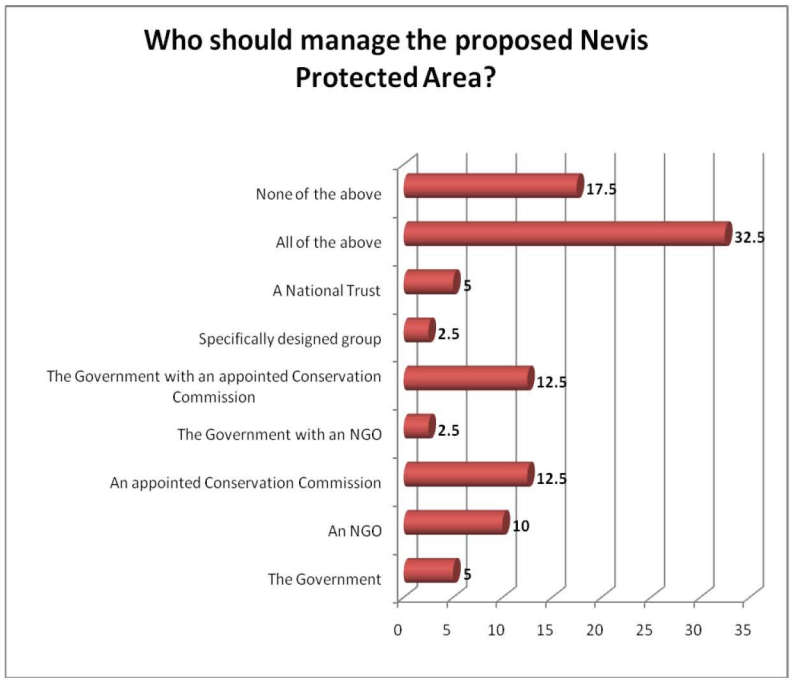


Figure 3: Management of the proposed protected area

In conclusion, this project has highlighted a need for strategies that will conserve our natural and cultural heritage. It has created a direct forum for discussions with local communities and demonstrated their significance in this process. This level of quality interaction must be cultivated and maintained to ensure local education, participation and ownership of the conversation efforts here on Nevis. I would like to say a special thank you to all the residents of Rawlins Village and the surrounding areas for their enthusiastic participation and wish the development of a Nevis protected area continued success.

Appendix C.3.
Attitudes of Residents of Fountain and Camps River Ghauts to a Protected Area Proposal

Survey and Analysis by Greg Phillip

NEVIS PEAK NATIONAL PARK

done by
Greg Phillip
April 2009

SAMPLE

The Sample size is thirty (30) individuals, the majority of whom live in close proximity to the protected area.

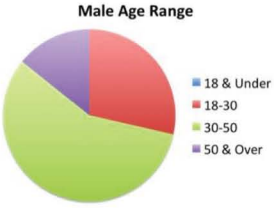
DEMOGRAPHICS

MALE	FEMALE
15	15

Demographic (Cont'd)

MALES:

- Eight (8) or 53% males are in the age group 30-50.
- Three (3) or @0% males are in the age group 50 and over.
- Four (4) or 27% males are in the age group 18-30.

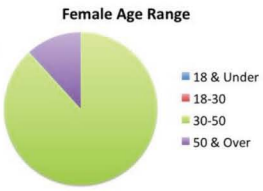


Two (2) males were not of Nevis origin, but live here year round.

Demographic (Cont'd)

FEMALES:

- Nine (9) or 60% females are in the age group 30-50.
- Six (6) or 40% females are in the age group 50 and over.



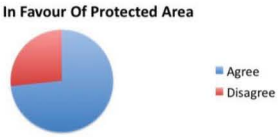
Two (2) females were not of Nevis origin, but live here year round.

EMPLOYMENT AND LAND OWNERSHIP

None of the individuals surveyed, worked, has family who worked, or owned land above 1000 feet.

AGREEMENT WITH NEVIS PROTECTED AREA

Eight (8) or 27% individuals did not agree with having a Nevis Protected Area above 1000 feet (4 males and 4 females).



Agreement With Nevis Protected Area (Cont'd)

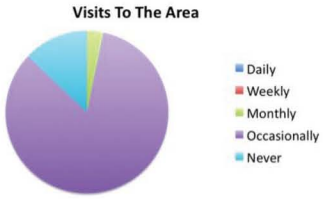
Those in agreement that is, twenty-one (21) individuals, agreed for reasons ranging from water concerns, preservation of the trees and the beauty of Nevis.

Those who disagreed did so because they believe that the level is a good place to live and do farming. Two (2) or 7% felt that the area was already protected or did not need protection.

DO YOU FREQUENT THE AREA?

The majority of individuals visited the area occasionally. There was only one (1) or 3% who visited monthly and this was the highest level of frequency. This individual was a male. No females visited monthly or more frequently. There were also four (4) females who have never visited that area.

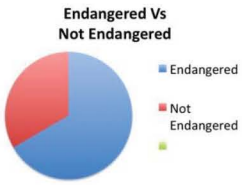
The following chart shows overall frequency of visits:-



Those who frequented the area did so mostly for hiking.

IS THE AREA ENDANGERED?

- Ten (10) or 67% of males felt that the area was not endangered.
- Five (5) or 33% felt that the area was endangered. Two (2) for reasons relating to deforestation, two (2) for construction reasons and one stated erosion as the reason.
- Ten (10) or 67% females felt that the area was not endangered.
- Five (5) or 33% felt that the areas was endangered. One (1) for reasons of pollution two (2) because of construction and two (2) for deforestation reasons.



The overall results are shown in this chart.

WOULD YOU ADJUST A NEGATIVE ACTIVITY?

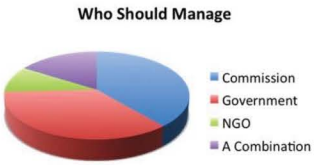
Four (4) persons will not adjust an environmentally negative activity.

Three (3) females felt that same way.

WHO SHOULD MANAGE THE AREA?

Among the males, nine (9) felt that a commission should manage the area. One (1) felt that an NGO should and a like number felt that a combination of NGO, government and a commission should manage the area.

Among the females, seven (7) felt that the government should manage the area. Two (2) felt that an NGO should, three (3) felt that a commission should and four (4) felt that it should be a combination.



WOULD YOU LIKE TO BE INVOLVED IN FUTURE DISCUSSIONS?

All said that they will like to be involved in the future except for one who said may be.

CONCLUSION?

It is clear that the area is not visited by many individuals. When the area is visited, it is visited mainly for hiking which is assumed to be an activity accepted in a protected area. Also, most are in favor of having a Nevis Protected Area.