

## Grenadines Seabirds: Preserving a Caribbean Treasure

The Grenadine Islands form an archipelago of dozens of islands, many of which harbor regionally and globally important breeding colonies of seabirds. The extensive habitat and relatively remote location of many of these islands make them an ideal place for seabirds to nest. However, the islands are not immune to human impacts. Development, introduced predators, litter, and harvest by people are problems throughout the region which have a negative impact on seabirds.

Research by Environmental Protection in the Caribbean (EPIC) has indicated that this key seabird nesting area faces a significant threat in the form of harvesting of seabirds and their eggs and chicks. In addition, it is not known what introduced predators, such as rats, are present on many of the islands.

### *Introduced Species*

The impact of introduced species has become a major conservation issue. Once one has witnessed the devastation caused by species such as rats to a once-prolific seabird colony, it is topic difficult to ignore. Seabirds lay their eggs during the dry season when there is often less forage available for animals like

rats. These predators then rely on seabird eggs and chicks to survive, with the result that far fewer birds are able to successfully reproduce. Over the years, this has meant a continuous decline in seabird populations where introduced predators are present.



Figure 1. Known seabird harvest locations shown by sunburst symbol.

### *Seabird Harvest*

Seabird harvest is an issue throughout the West Indies but one that has not received as much attention despite its potential for significant impacts.

The relationship between fishers and seabirds is likely as deep-rooted as fishing itself. Fishers use seabird congregations over the sea to indicate good fishing areas and even which species of fish may be present (Grant 2006). The seabirds themselves and their eggs also provide food for sustenance. While seabird harvests are not as prevalent as was reported historically, the activity is still widespread in the Grenadines of St. Vincent and Grenada. However, the conservation and socio-economic

implications of this activity is not understood. No studies have been conducted on the ecological, cultural, and economic issues surrounding seabird harvests or their sustainability over time.

Recent publications indicate that Caribbean seabird populations are in decline (Bradley and Norton 2009, Lowrie et. al. 2012). The impacts of hunting pressure on seabird colonies is exacerbated by other threats facing seabirds, including invasive predators, human disturbance (particularly tourism), declining fisheries, and rapid development of coastal areas. The widespread use of motorized boats has made distant breeding colonies easier to access, while declines in fish populations force fishers to travel farther from port to harvest sufficient fish, likely expanding the impact of seabird harvest on remote areas.

Some of these remote islands classify as globally or regionally Important Bird Areas under Birdlife International criteria, meaning they represent >1% of the global or regional breeding population for a species. These remaining breeding colonies are crucial to declining seabird populations, ensuring their continued viability in the Antilles and beyond. It is also essential to note that harvesting has likely suppressed or extirpated populations at many other sites which historically may have met IBA criteria. With appropriate management of threats, including harvests and invasive species, restoring seabird population levels is feasible.

Surveys of seabird breeding colonies conducted by Environmental Protection in the Caribbean (EPIC) over several months during 2009–2010 provided confirmation of significant harvests in at least a dozen Grenadine islands (Fig. 1). Evidence included burning of Petit Canouan to facilitate egg or chick collection by maintaining a landscape of low grasses instead of thick brush. “Shoot-outs” were reported to occur on the island between rival fishermen seeking to harvest eggs and birds. On Les Tantes, the researchers found a pile of over 40 tropicbirds and boobies and 22 decapitated Brown Booby chicks. They also observed one man harvest 39% of Brown Booby chicks in a single day. Magnificent Frigatebirds and Red-footed Boobies were found dead in traps placed on Diamond Rock and The Sisters. On Dove Cay, two men with buckets gathered all visible Laughing Gull eggs and then attempted to sell eggs to the researchers. Battowia, where traps were observed with dead birds, is reportedly targeted for Red-footed Booby chicks and adults. Dozens of booby carcasses were found at Baliceaux. Eggs were reportedly taken from the Tobago Cays Marine Park. A diver in St. Vincent reported that he and his friends travel to the Grenadines to collect eggs, indicating that, while fishers are probably more frequently harvesting seabirds and eggs, the practice is not limited to fishers alone (Lowrie et. al. 2012).

**Table 1. Grenadine islands where evidence of seabird harvests were observed during EPIC’s 2009–2010 surveys, showing IBA status, Wildlife Reserve classification, and type of harvest activity observed.**

| Grenadines Island   | Global IBA* | Regional IBA*          | Wildlife Reserve† | Harvested Adults | Harvested Chicks | Harvested Eggs | Burning |
|---|-------------|------------------------|-------------------|------------------|------------------|----------------|---------|
| <b>St. Vincent</b>  |             |                        |                   |                  |                  |                |         |
| Petit Canouan   |             | RBTR, SOTE             | x                 | x                | x                | x              | x       |
| Battowia  | RBTR, RFBO  | RBTR, BRBO, RFBO, LAGU | x                 | x                | x                |                |         |
| West Cay, Bequia  |             |                        | x                 |                  |                  | x              |         |
| Tobago Cays Marine Park   |             |                        | x                 |                  |                  | x              |         |
| Mustique  |             |                        |                   |                  |                  | x              |         |
| Savan Islands   |             |                        | x                 | x                |                  |                |         |
| Dove Cay  |             | LAGU                   |                   |                  |                  | x              |         |
| <b>Grenada</b>  |             |                        |                   |                  |                  |                |         |
| Les Tantes  | RBTR        | RBTR                   |                   | x                | x                | x              |         |
| Diamond Rock  |             | RBTR, BRBO, RFBO, LAGU |                   | x                |                  |                |         |
| The Sisters   |             |                        |                   | x                |                  |                |         |
| *Indicates the island meets global or regional Important Bird Area criteria (>1% of the global or regional population for a species). |             |                        |                   |                  |                  |                |         |
| †Listed among the 20 wildlife reserve islands/island groups in the 1987 Wildlife Protection Act in St. Vincent and the Grenadines.    |             |                        |                   |                  |                  |                |         |
| BRBO=Brown Booby, LAGU=Laughing Gull, RFBO=Red-footed Booby, RBTR= Red-billed Tropicbird, SOTE=Sooty Tern                             |             |                        |                   |                  |                  |                |         |

With reported declines in nearshore fish stocks, it is possible that fishers must search further offshore for their catch. Seabirds and their eggs offer an opportunistic way to augment meager catches. The burning of Petit Canouan, which enables the “farming” of Sooty Tern eggs, would suggest that seabird harvests are also conducted intentionally and on a regular basis. If seabirds and their eggs are supplying significant economic or nutritional supplement to fishing communities, the sustainability of seabird breeding colonies becomes not just an ecological issue but an economic one as well.

### *Litter*

Despite being far from civilization, these distant islands are inundated with trash coming in from the open ocean. Birds are found entangled in this litter with no way to get out. While foraging at sea, they will also consume trash that looks like their typical foods, causing severe health problems or death. By removing trash from these wildlife refuges, we can reduce the risk of litter entanglement and consumption.

## Training

The government lacks funding to protect these remote refuges, so volunteers from nearby islands are stepping up. This program will train Community Rangers to measure seabird populations, check for illegal hunting and invasive predators, clean up harmful trash, and empower their communities to save seabirds.

## Research

In order to properly address the issue of seabird harvest in the Grenadines, further research is needed. Community members will be trained and empowered to assess basic information on harvest rates and monitor seabird nests through periodic surveys. Investigations will also be made to determine if introduced predators are present on the islands.

## Outreach

Rangers will be provided with outreach materials, presentations, activities, and media campaigns so they can effectively advocate for local wildlife. A targeted media campaign combined with community advocacy will instill a sense of pride and stewardship for the amazing seabirds which depend on offshore islands as nesting sites.

Rangers will serve as ambassadors for seabirds and nearby wildlife refuges in their local communities, with the ability to train others and magnify the project's impact now and in the future. The development of ecotourism at refuges will be an alternative source of income in this economically challenged region. After the project takes root in the Grenadines, it can be expanded to other islands where similar problems are occurring.

## Planning for the Future

An adaptive management plan based on in-depth consultation and cooperation of the seabird harvesting community is the most effective route forward. Anecdotal reports from fishers themselves indicate they are observing a decline in the number of seabirds. Since fishers are accustomed to limits on fishing, and are even encouraging a limit on nearshore fishing in the Grenadines, establishing limits on seabird harvests within this community would appear feasible (K. Baldwin, pers. comm. 2012). Management of seabird harvest is also supported by government and NGO partners, including the Forestry Department of St. Vincent and the Grenadines, Grenada Forestry and National Parks Department, and Sustainable Grenadines Inc.

The literature shows that in 1907, Jamaica began to regulate seabird harvests, taking a variety of forms over the years, including a quota and licensing system, harvest seasons, and no-take zones (Haynes 1987). Seabird harvest regulation has not been reported from other islands. It is time to address this widespread and generally ignored issue before it is too late for seabirds and the communities which depend upon them.

Management plans can be developed for islands where introduced predators are found. The removal of introduced predators from Caribbean islands has been gaining momentum in recent years with several successful projects showing dramatic increases in seabird populations.

Given the importance of the Grenadines to regional and global seabird populations, the alarming decline in seabird breeding colonies, as well as the significance of seabirds as a food source for people, the issue of seabird harvesting demands immediate attention.

## About EPIC

EPIC as established in 2000 with the mission to protect the Caribbean environment through research and community-based action. Over the past 13 years, we have worked on nearly every island in the region, conducting research, building partnerships, and using outreach to empower communities to care for their land, their water, and their wildlife.

In 2009, EPIC began the first comprehensive and standardized survey of seabird colonies in the Lesser Antilles region of the Caribbean. Every island, islet, or cay above the high-tide level

capable of supporting seabirds was surveyed by land and/or sea. The study covered 3,162 nautical miles and over 200 islands. EPIC worked with local partners to spread the word about seabird conservation and train advocates in seabird research techniques.

The result of this ground-breaking project is the book *The Seabird Breeding Atlas of the Lesser Antilles*, which outlines every recorded seabird colony and sets conservation priorities. One of the primary priorities in the Atlas is to address the issue of seabird harvest in the Grenadines. This project aims to meet this objective, based on a regional perspective on the most important seabird conservation concerns.

A full seabird population survey for this region had never previously been undertaken. Existing records were often based on anecdotal notes, sometimes dating back to the early 19th century. The standardized methods and results from the *Seabird Breeding Atlas of the Lesser Antilles* provide a baseline for the future monitoring of seabirds within the region and guide conservation priorities.

“Covering so many islands, so comprehensively over just a two-year period, this “snapshot” baseline is simply unprecedented in the context of Caribbean ornithology...The results are truly astounding.”

-David C. Wege, Senior Caribbean Programme Manager, BirdLife International

## **Bibliography**

Baldwin, K. Personal Communication. 9 May 2012.

Bradley, P. E., & Norton, R. L. (2009). Status of Caribbean Seabirds. In P. E. Bradley, & R. L. Norton, *An Inventory of Breeding Seabirds of the Caribbean* (pp. 270-280). Gainesville, Florida, USA: University Press of Florida.

Grant, S. 2006. Managing small-scale fisheries in the Caribbean: the surface longline fishery in Gouyave, Grenada. Thesis. Natural Resources Institute, University of Manitoba, Winnipeg, Manitoba.

Haynes, A.M. 1987. Human exploitation of seabirds in Jamaica. *Biological Conservation* 41 : 99-124.

Lowrie, K., D. Lowrie, and N. Collier (2012). *Seabird Breeding Atlas of the Lesser Antilles*. CreateSpace.

**BUDGET**

| ITEM                               | UNIT COST | # UNITS    | TOTAL               |
|------------------------------------|-----------|------------|---------------------|
| Water taxi to islets year 1        | \$ 130.00 | 28         | \$ 3,640.00         |
| Water taxi to islets year 2        | \$ 130.00 | 28         | \$ 3,640.00         |
| Field supplies and tools           | varies    | varies     | \$ 540.00           |
| Volunteer per diem year 1          | \$ 20.00  | 28         | \$ 560.00           |
| Volunteer per diem year 2          | \$ 20.00  | 28         | \$ 560.00           |
| Locations for training, rental     | \$ 50.00  | 6          | \$ 300.00           |
| Supplies for training sessions     | \$ 50.00  | 6          | \$ 300.00           |
| Educational handouts/printing/maps | varies    | 500 people | \$ 460.00           |
| Trainer travel costs               |           |            | \$ 2,000.00         |
| <b>TOTAL</b>                       |           |            | <b>\$ 12,000.00</b> |