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Bonefish Dundee

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"Sculler Roderick Winer Malone," from an original oil painting by Abaco artist Alton Lowe. Courtesy of the Wyannie Malone Historical Museum.

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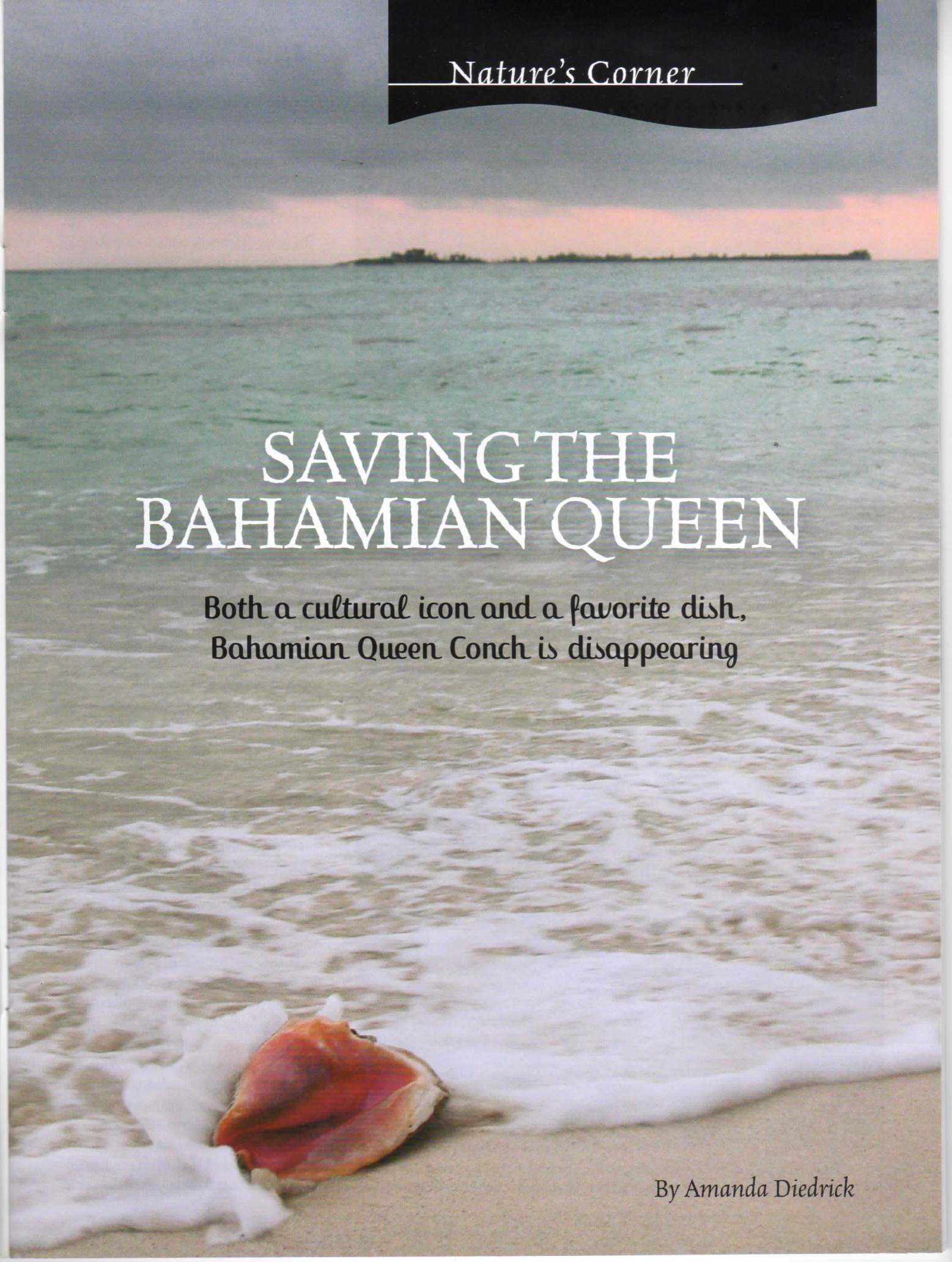


SAVING THE BAHAMIAN QUEEN

Both a cultural icon and a favorite dish, Bahamian Queen Conch is disappearing

By Amanda Diedrick

The conch's body consists of a tube-like mouth, two eyes at the end of protruding stalks, a smaller set of tentacles, and a muscular foot with a black claw. Photo: Shane Gross

A vendor removes a Queen Conch from its shell by hammering a hole in the right spot and using a sharp knife to sever the muscle from the shell interior. Photo: Tom Walters

As teenagers in the 1940s, Green Turtle Cay's Vertrum Lowe and his friends collected queen conch shells to be sold as souvenirs. "We would dive for them up and hang them overnight," Vertrum remembers. "In the morning, the conch would be dead and we could just pull it out. That way, we didn't need to make a hole and damage the shell."

What did they do with the firm, white meat? Vertrum shrugs. "We threw it into the sea," he says. "There were thousands and thousands of conchs back then. We never thought they'd get so scarce."

Neither did Lurey Albury, whose father, Herman Curry, farmed on nearby Munjack Cay nearly a century ago. "Daddy kept hogs for fertilizer," Mrs. Albury said. "Before school each morning, I would have to break one or two dozen conchs to feed the hogs. If we didn't have time to go and get them from the sea, we could buy a big bunch for a thruppence."

Though it's difficult today to imagine the conch as trash or hog fodder, it's easy to understand how Bahamians could take its abundance for granted. The Queen Conch (Strombus gigas) has been a staple of Bahamian living for centuries. The Lucayan Indians, who first inhabited these islands centuries ago, relied on conch meat as a source of protein. From the shells they fashioned horns, jewelry and tools for scaling fish and hollowing tree trunks for canoes. Shell fragments were used to temper their traditional red-soil pottery, known as Palmettoware.

During the late 1640s, a group of religious pilgrims arriving from Bermuda shipwrecked off the coast of Eleuthera. With their vessels and provisions lost, they were forced to take shelter in a cave and survive on what they could harvest from land and sea. So heavily did these Eleutheran Adventurers rely on the Queen Conch for sustenance that, more than a century later, the British Loyalists who came seeking refuge after the American Revolution disdainfully dubbed them "conchs."

The contempt of the Loyalists was short-lived, however. When their cotton and tobacco plantations failed, they were left with little choice but to turn to conch for sustenance themselves. Seeking new occupations, they also began exporting conch shells to the U.S., Canada and Europe for use in home and garden décor and the

production of curios and jewelry. With its rusty brown exterior, delicate white and peach layers and elegant pink interior, the Queen Conch shell was a favorite for carving the cameos that were fashionable at the time.

By the mid-20th century, records show that 2,200 tons of Queen Conchs were being harvested annually in the Bahamas. Fine jewelry stores along Nassau's Bay Street sold rings, pendants, earrings and cufflinks featuring rare pink conch pearls. Throughout the Bahamas, souvenir shop shelves were lined with conch shells and the curios and trinkets fashioned from them.

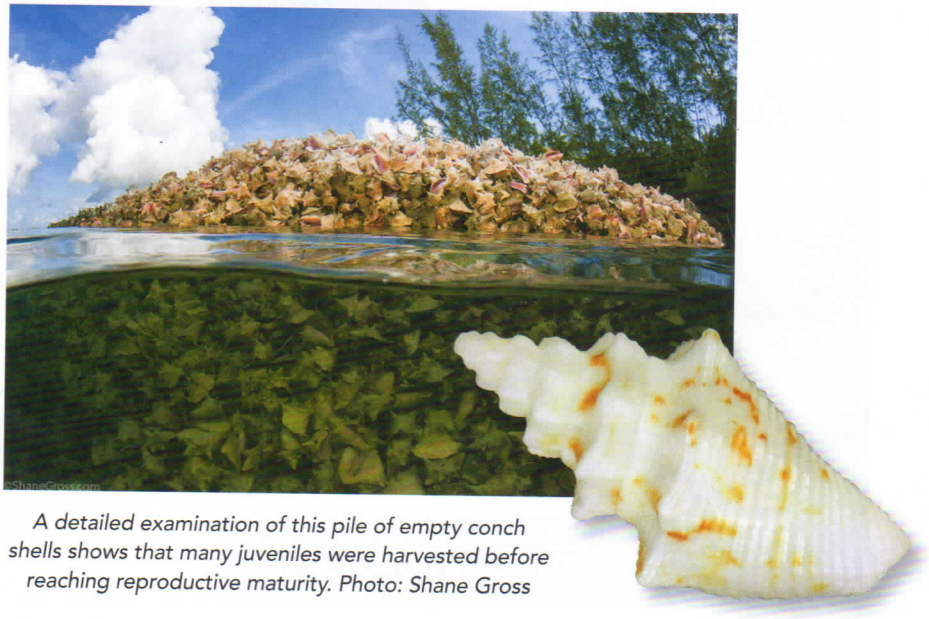
Having sustained their ancestors for generations, the Queen Conch was regarded by many Bahamians as the country's native dish. No island gathering was complete without a pot of stewed conch or platter of steaming fritters. Fresh conch salad took its place on the menus of Nassau's finest restaurants. And virtually every Bahamian youngster knew the fun of diving up a conch, cleaning it on the beach and eating it raw, drenched in sour orange juice.

By the time the Bahamas achieved independence in 1973, the modest mollusk had achieved such economic and cultural status that a Queen Conch shell sat atop the country's newly minted coat of arms. Annual conch harvests exploded, reaching 7,300 tons by 1990, according to the *Nassau Tribune*. A fisheries census conducted during the mid-1990s showed that more than 9,300 Bahamians earned their livings as conch fishermen.

It wasn't long, however, before those fishermen began complaining that conchs were becoming more difficult to find. They had to travel further afield, they said, and into deeper waters. The conchs they did harvest were smaller than in the past. Evidence of over-fishing would soon be more than simply anecdotal. By 1999, just 5,500 tons of Queen Conchs were brought ashore. Two years later, the harvest plunged to 3,100 tons.

In 2009, a group of scientists and volunteers, in collaboration with the Bahamian Department of Marine Resources, The Bahamas National Trust, The Nature Conservancy and other non-profit groups formed Community Conch. The organization's goal was to gather scientific data to gain a clear understanding of the state of the Bahamian Queen Conch population,

A vendor makes fresh conch salad at Green Turtle Cay's Island Roots Heritage Festival. Photo: Amanda Diedrick



A detailed examination of this pile of empty conch shells shows that many juveniles were harvested before reaching reproductive maturity. Photo: Shane Gross

Conch fisherman Eddie Bodie cleans the day's catch to make conch salad. Photo: Amanda Diedrick

and to lay the groundwork for a sustainable conch fishery.

Over the next five years, Community Conch conducted stock assessments in the Berry Islands, Andros, Exuma, Ragged and Jumento Cays, the Bight of Abaco and Little Bahama Bank. In particular, they studied conch density, age distribution and evidence of reproductive activity.

Conch density – that is, the number of conchs per hectare or (ha) – is a crucial factor in assessing the vitality and sustainability of the population. The Convention on International Trade in Endangered Species (CITES) recommends that for a healthy conch population, a minimum density of 100 conchs per hectare must be maintained. Studies show that in densities of fewer than 50 conchs per hectare – which many might easily mistake for a viable population density – no mating occurs at all.

Age distribution is also important. A healthy conch population usually includes an equal distribution of both genders and a range of ages. Average conch age – measured by the thickness of the flared shell lip – is higher in thriving populations. A lower average age indicates overfishing and means that less reproduction is possible.

Evidence of reproductive activity – mating pairs, egg-laying females and egg masses – is also an obvious and reliable indicator of future supply. And across all regions surveyed, the results of Community Conch's research were uniform – and uniformly alarming. In the fishing grounds west of Abaco's Moore's Island, the Queen Conch density was 10/ha. Near Sandy Point, density averaged just 6 conchs/ha. Not only were the populations very young, but of the more than 1,000 conchs encountered, only three mating pairs were found.

Throughout most of Andros, overall adult density was a mere three conchs/ha. And in Exuma, the number of conch per hectare had dropped more than 90% since 1991. In the Berry Islands, Community Conch studies identified 40 historical queen conch breeding grounds that had actually been wiped out. And the juvenile population was just one one-thousandth of that seen in the 1980s. Even within the Exuma Cays Land and Sea Park – which has been protected for more than 30 years – conch density had dropped by 35%. Most of the conchs found were juvenile. Of the few mature adults, only one percent were observed mating. And though the surveys were conducted during peak reproductive season, no egg masses or egg-laying females were seen. Community Conch's research made it clear that the Bahamian Queen Conch population is on the verge of collapse.

Conch salad. Photo: Rhonda Pearce

The complex reproductive life of the Queen Conch makes it particularly susceptible to overfishing and results in a high mortality rate. Though a Queen Conch can live 30 years or more, it takes up to five years to reach reproductive maturity. And though the male is considered mature when its flared lip reaches a thickness of roughly 3/8", the female does not reach reproductive maturity until its lip measure approximately 5/8" thick.

After mating, the female queen conch lays an egg sac containing up to 500,000 embryos. A few days later, each egg hatches into a free-swimming larva, encased in the transparent beginnings of a shell. At this stage, larval conchs – known as veligers – are so tiny that ten would fit into a single drop of water. And because they're a favorite food source for plankton eaters, such as whale sharks, turtles, jellyfish and even coral, a great many veligers never make it past this stage. Those that do survive drift for several months on the sea, feeding on plankton. Eventually, they settle on the ocean floor where, with their small, fragile shells, they become easy prey for Bahamian lobsters, crabs, sea snails, various fish, sharks and rays.

No Bahamian gathering would be complete without conch fritters. Photo: Rhonda Pearce

Bahamian Conch Chowder

Serves 4-6

6 conchs, cleaned and diced into small (1/2"-3/4") cubes*
8-10 cups water
butter or margarine
4 slices bacon, diced
1 large onion, diced
2 cloves garlic, peeled and minced
1 small green pepper, diced
2 stalks celery, diced
2 carrots, peeled and diced or thinly sliced
1-2 teaspoons dried thyme
2 tablespoons tomato paste
2 large potatoes, peeled and diced
1 can diced tomatoes, undrained
8-oz can tomato sauce
2-3 bay leaves
Salt and pepper to taste
Tabasco sauce or cayenne pepper, if desired

Place diced conch, water and 1 tablespoon of butter in a large pot. Bring to a boil, reduce heat to medium and cook for 60-90 minutes or until conch is tender. (Watch pot carefully as conch foams and boils over very easily.)

Drain conch, reserving the liquid. Set both conch and liquid aside.

In the same pot, heat a tablespoon of butter or margarine. Sauté bacon for 1-2 minutes, then add onions, green pepper, celery, carrots, a teaspoon of thyme, and salt and pepper. Cook until bacon begins to crisp and vegetables soften. Add tomato paste and sauté for a minute or two.

Stir in the water in which the conch was cooked. Add undrained diced tomatoes, tomato sauce, diced potatoes, another teaspoon or so of thyme, bay leaves and a little more salt and pepper. Bring to a boil and simmer 20-30 minutes or until vegetables are tender.

Adjust seasonings to taste. For a spicier chowder, add a dash of Tabasco sauce or cayenne pepper. If chowder is too thick, add a little warm water. If you prefer a thicker chowder, use a fork to mash some of the potatoes against the side of the pot, then stir.

** If you can't find conch, clams or calamari make good substitutes. You'll need approximately two cups of shelled clams or diced calamari for this recipe.*

In an attempt at self-preservation, very young conchs burrow in the sand around seagrass beds for up to a year, coming out only at night to feed. When their white and brown-streaked shells are about 3" in length, they emerge, better prepared to defend against marine predators. But juvenile Queen Conchs soon fall victim to larger and more sophisticated hunters – human beings. Though found in waters as deep as 300 feet, they prefer the shallows, where available light results in optimal growth of the sea-grass and algae on which they feed. Unfortunately, this makes them easy prey for locals, tourists and commercial fishermen. And where deep waters once offered refuge, the use of compressed air by today's fishermen enables them to dive to much greater depths, leaving fewer areas for Queen Conchs to feed, mature and reproduce.

In light of all this, only a small fraction of the original 500,000 conch embryos from an egg mass ever reach maturity and reproduce.

Some argue that establishing protected areas or closed seasons would enable the Bahamian Queen Conch population to recover. However, evidence suggests this is not the case. In 1975, Florida's Queen Conch fishery collapsed, resulting in a prohibition on all commercial and recreational conch fishing in state waters. Bermuda's conch fishery met a similar fate. Despite strict bans, neither fishery has ever recovered.

The effects of a failed Bahamian conch fishery cannot be overstated. The loss of the Queen Conch – an important food source for many species of marine life – would resonate up and down the food chain, affecting the delicate balance of the local marine environment.

The conch industry generates millions of dollars toward the Bahamian economy annually. Just one large Nassau resort uses roughly 20 tons of conch meat a year. A single conch stall at Nassau's Arawak Cay goes through 3,000 conchs per month. Fishermen, shippers, chefs, servers, crafts-people, souvenir vendors and artists – all would suffer economically if the conch fishery folded, as would Bahamians in small, out island communities where conch is a diet staple during times of financial hardship.

And the loss of the Queen Conch on Bahamian culture can't be measured in just dollars and cents. Conch festivals like those staged annually in Grand Bahama, Andros and Eleuthera would be no more. Young

Since the early 1880s, jewelry fashioned from Queen Conch shells and pearls has been popular with Bahamians and visitors alike. Here, conch shell jewelry made by Dandria Miller, an artisan in Nassau. Photo: Dandria Miller

Bahamians would no longer learn to blow conch shell horns. Mothers and grandmothers would no longer hand down their prized family recipes. As legendary Bahamian musician Eddie Minnis laments in his cautionary tune, "No More Conch,"

"No more conch salad.
No more stewed conch.
No more steamed conch.
No more conch fritters.
No more conch n' grits.
No more scorched conch.
No more conch chowder.
Oh Lord, what we ga' do?"

In 2013, responding to the alarming results of Community Conch's research, the Bahamas National Trust launched a three-year, nationwide "Conchservation" campaign, aimed at protecting and preserving the Bahamian Queen Conch fishery. Campaign components included a public education program, a national telephone survey measuring Bahamians' knowledge, attitudes and practices related to conservation issues and focus groups with fishermen, retailers and others who directly impact the state of the industry.

A final report on the Conchservation program is expected soon. And while it will no doubt include a series of recommendations and proposed legislative changes, the reality is that the law is only as dependable and effective as the people it seeks to regulate.

EDITOR'S NOTE: *Writer Amanda Diedrick, lives on Green Turtle Cay.*

Here's what we as individuals can do to protect and preserve the Bahamian Queen Conch:

- Know and obey the current conch fishing regulations:
- All non-Bahamians (whether on foreign or Bahamian-registered boats) are required to have a sports fishing permit and may have a maximum of SIX conchs aboard at any one time. Note that this is six conchs per vessel, not per person.)
- Harvesting, possessing or selling conchs without a well-formed lip approximately 5/8" thick is strictly prohibited.
- For more information or to purchase fishing permits, contact the Marsh Harbour office of the Department of Marine Resources at (242) 699-0202.
- Patronize restaurants and vendors committed to harvesting only mature conchs. (If in doubt, check the shell pile outside.)
- Never take conchs from designated marine protected areas or national parks. There are approximately 50 of these sites in the Bahamas, including five in Abaco: Black Sound Cay National Reserve, Tilloo Cay National Reserve, Abaco National Park, Pelican Cays Land and Sea Park and Fowl Cays National Park.
- Support environmental protection efforts in general, since pollution of any kind can threaten the marine environment and the conch fishery. Studies show, for example, that conchs won't reproduce in waters with higher concentrations of copper and zinc, and that pesticides hinder their ability to mature and reproduce.

Ultimately, it's up to all of us – commercial and sports fishermen, locals, second homeowners and tourists – to ensure that Queen Conch remains the crowning glory on the Bahamian coat of arms, and that future generations of Bahamians can find it somewhere other than in a museum.