

Queen conch *Strombus gigas*

Taxonomy and Range

Kingdom: Animalia, Phylum: Mollusca, Class: Gastropoda, Order: Mesogastropoda, Family: Strombidae
Genus: *Strombus*, Species: *gigas*

In the Cayman Islands, the genus *Strombus* is represented by the Hawkwing conch *Strombus raninus*, the (Florida) Fighting conch *Strombus alatus*, and the Milk conch *Strombus costatus*. Queen conch *Strombus gigas*, is the most common and economically significant.

Status

Distribution: Greater Caribbean tropical zone, including, Mexico, southern Florida, and the Bahamas, north to Bermuda.

Conservation: Conch are subject to quantitative annual survey by the *Department of Environment*. Data collected 1988-2006 indicate fluctuating but decreasing populations, with a ca.50% relative decrease in observed average conch densities in the Cayman Islands.

Legal: Queen conch *Strombus gigas* is protected under the Marine Conservation Law (2007 Revision), and subject to bag limit and closed season (1st May-30th Oct). During open season, bag limits are five conch per person, or ten per boat per day (whichever is least). No one may purchase or receive more than five conch from Cayman waters per day. Conch are also protected under the Endangered Species (Trade & Transport) Law (Parts 1 & 2). It is listed internationally on CITES (Appendix II) and SPAW (Annex III). Pending legislation, all *Strombus* species would be protected under the National Conservation Law (Schedule II). The *Department of Environment* is the lead body for enforcing the legal protection.

Natural History

Queen conch *Strombus gigas* is a large marine snail. Adults attain a length of over twelve inches, and may weigh in excess of five pounds. Conch feed on algae. Specimens are found in sandy and hard-bottomed lagoons, coral rubble fields, and occasionally *seagrass beds*, at depths ranging from 5 to 500 feet. On hatching from the egg, conch undergo a twenty-one day planktonic larval stage, before taking up their benthic lifestyle. During this planktonic phase, larval veligers may be distributed widely by local and regional currents of the *open sea*. Juvenile conchs are predated by a variety of species; burrowing into the sand and sediment by way of defence.

The Queen conch has been harvested for human consumption since prehistoric times. It represents one of the most commercially exploited marine resources in the Caribbean. This exploitation has led to over-fishing and depletion of most known shallow water stocks.

Associated Habitats and Species for Queen conch

ASSOCIATED HABITAT PLANS	ASSOCIATED SPECIES PLANS
1. Open sea 3. Lagoons 4. Seagrass beds 5. Dredged seabed 9. Mangrove	Whelks & Soldier crab <i>Cittarium pica</i> & <i>Coenobita clypeatus</i> Spiny lobster <i>Panulirus argus</i>

Current Factors Affecting Queen conch

- *Habitat loss:* damage to key areas of habitat, particularly *mangrove* and *seagrass beds*, have reduced the availability of nursery areas for young conch.
- *Poaching:* illegal take, in combination with legal take, currently appears to be sufficient to prevent population recovery, despite almost two decades of protection. The evolution of drug-culture, the advent of crack cocaine, and the development of an unemployable subclass within local society has contributed, in large part, to a new poaching element for whom jail-time offers little by way of

functional deterrent. Individual poachers have the capacity to inflict significant damage on remnant populations.

- *Habitat management*: sub-juvenile habitat is suspected to be shallow Turtle grass *Thalassia testudinum* beds but these areas are currently unidentified and unsurveyed in the Cayman Islands.
- *Critical depensation threshold*: when *Strombus* populations drop below a critical density reproduction ceases to be effective. Due to the complex nature of juvenile dispersal patterns, and reliance on high density breeding populations for successful breeding, Cayman conch populations cannot be considered “healthy” until population density has significantly increased above current levels. If the Cayman population should ever fall below the critical depensation threshold, intensive restoration management will be required for basic stock maintenance.
- *Fishing*: conch have long represented one of our most significant fisheries. Currently, conch are still taken for food, and to a much more limited extent, as shell for the curio trade. The majority of shell take is, however, a by-product of the fishery.
- *Larval stage*: planktonic dispersal makes local conch populations dependent, to some extent, on regional current regimes and healthy international populations.
- *Tourist potential*: as availability of conch becomes limiting, demand for conch meat and shell products may be expected to become a greater.
- *Natural predators*: young conch are prey to many species, however, only a few, such as rays and Loggerhead turtles *Caretta caretta*, are able to crush the thick shell of a fully grown adult conch.
- *Value*: a combination of economic and cultural value, in addition to biological significance, make threats to the viability of the Queen conch of particular concern.

Opportunities and Current Local Action for Queen conch

Conch are protected under the Marine Conservation Law (2007 Revision) and subject to a bag limit and season.

Queen conch *Strombus gigas* are the focus of several international and regional initiatives, including the CITES Review of Critical Trade in Conch Products, and the Caribbean Fisheries Management Council’s International Queen conch Initiative.

The *Department of Environment* undertakes an annual Conch survey, from which management recommendations are drawn.

Local and wild conch are listed as a seafood to “Avoid” under the Cayman Sea Sense education programme. Farmed conch are listed as a “Good Alternative”. In practice, however, point-of-sale determination of the origin of seafood is not always simple.

SPECIES ACTION PLAN for Queen conch

OBJECTIVES	TARGET
1. Stabilize or positivise all surveyed conch population trends.	2015
2. Develop sustainable conch fishery, through effective conservation action, and responsive regulation and enforcement.	2015
3. Ensure sustained support for the conservation of Whelks through targeted education and awareness programmes.	ongoing

	LEAD	PARTNERS	TARGET	MEETS

Queen conch PROPOSED ACTION				OBJECTIVE
Policy & Legislation				
PL1. Pass and implement the National Conservation Law.	CIG	DoE	2006	1,2,3
PL2. Implement the Endangered Species (Trade & Transport) Law.	DoE	CIG	2006	1,2
PL3. Protect <i>Strombus gigas</i> under Schedule II of the National Conservation Law, through establishment of conservation regulations.	DoE	CIG	2006	1,2,3
PL4. Consider amendment of Marine Conservation Law legislation to reduce daily catch limits and harvesting season, and increase minimum size limit for collection.	DoE MCB	CIG	2009	1,2
PL5. Consider amendment of Marine Conservation (Marine Parks) Regulations to incorporate greater protection for critical replenishment habitat for Conch.	DoE MCB	CIG	2009	1,2
PL6. Amend Marine Conservation Law as necessary, to close established enforcement loop-holes, to facilitate necessary enforcement and prosecution.	DoE MCB	CIG	2010	1,2
PL7. Assess need for a temporary moratorium on harvesting to enable population recovery.	DoE MCB	CIG	2010	1,2
PL8. Establish policy of discouraging Cayman Islands' involvement in activities likely to contribute to an increase in pressure on local or regional stocks of threatened marine species e.g. "Conch eating contests".	DoE DoT NT	CIG CITA SITA	ongoing	3
Safeguards & Management				
SM1. Continue active enforcement of Marine Parks and conch fishery limits.	DoE	RCIP	ongoing	2
SM2. Develop contingency plan should conch populations ever drop below biologically viable limits.	DoE MCB	CIG	2010	1,2
SM3. Investigate and encourage the potential for commercial farming of conch, for augmentation of wild population, or towards sustainably meeting local demand.	DoE	IntC	ongoing	1,2
SM4. Implement associated HAPs.	DoE		2015	1,2
Advisory				
A1. Inform Marine Police on issues relating to the legal harvesting of Whelks, towards assisting in enforcement of local regulations.	DoE	RCIP	2009	1,2
A2. Maintain Cayman Islands involvement in regional conch research and management such as the Caribbean Fisheries Management Council's International Queen conch Initiative, CITES Review of Significant Trade in Queen Conch, and SPAW.	DoE	CIG	ongoing	2
A3. Targeted awareness of the need for the National Conservation Law and the Endangered Species (Trade & Transport) Law.	DoE	CIG NT	2006	1,2

Queen conch PROPOSED ACTION	LEAD	PARTNERS	TARGET	MEETS OBJECTIVE
Research & Monitoring				
RM1. Continue annual conch population surveys.	DoE		ongoing	1
RM2. Investigate possible sub-juvenile population monitoring methods.	DoE		2009	1
RM3. Establish commercial value of conch fishery in the Cayman Islands.	DoE		2010	2
RM4. Engage and participate in regional mapping, research and management initiatives.	DoE	IntC	ongoing	1
Communication & Publicity				
CP1. Continue constant reminders of Marine Park & fishery rules.	DoE MCB	MP	ongoing	3
CP2. Targeted awareness campaign to key sectors of the local community, to inform groups which are prone to non-sustainable practice, regarding the need to manage harvesting sustainably.	DoE	MP	ongoing	3
CP3. Targeted awareness campaign to key sectors of Government to assist in adopting management and legislation recommendations.	DoE MCB	CIG	ongoing	3
CP4. Raise awareness of sustainable alternatives to threatened fisheries amongst members of the public through involvement with educational programmes e.g. Cayman Sea Sense.	NT	DoE DoT CA MP	ongoing	3
CP5. Utilise native flora and fauna, and associated preservation efforts, in the international promotion of the Cayman Islands.	CIG	DoE MP NT DoT	2010	3

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