



WELCOME

to our summer edition of Envirotalk.

In this issue –

- Drs. Joanna Pitt and Tammy Warren introduce us to the Guinea chick lobster and outline the regulations for fishing for them in Bermuda.
- Dr. Mark Outerbridge identifies 10 of the most commonly found items of fishing industry debris seen on Bermuda's shoreline.
- Dr. Philippe Rouja describes some of the highlights to be explored within Bermuda's network of protected dive sites.
- Also See:
 - Our **News & Notices** for reminders and upcoming events
 - The **Planting Calendar** to get a head start on what to plant this summer.

Please contact:

Envirotalk mailing list: envirotalk@gov.bm to be placed on the mailing list or for suggestions for future articles.

HOW MUCH DO YOU KNOW ABOUT THE GUINEA CHICK LOBSTER, THE SPINY LOBSTER'S SMALLER COUSIN?

The lobster that we call “spiny lobster” in Bermuda is the Caribbean spiny lobster *Panulirus argus*, but it is only one of several spiny lobster species that are found around Bermuda. Another is the spotted spiny lobster, *Panulirus guttatus*, also known locally as the Guinea chick lobster. This name comes from their darker coloration and the fact that they are covered in white spots that resemble the spots on a Guinea fowl (Figure 1).



Figure 1. A Guinea chick lobster and a Guinea fowl.

Guinea chick lobsters are comparatively smaller than their cousins, only growing to about 20 centimeters (8 inches) total length, with a typical carapace length (see Figure 2) of 6 – 8 cm (<3 inches).

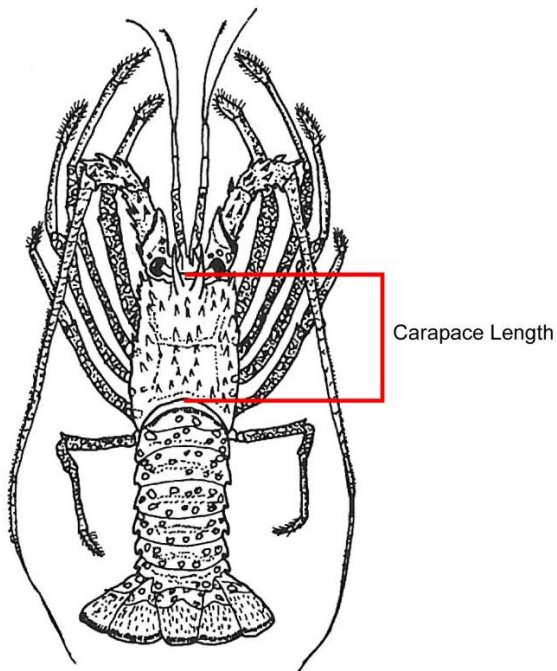


Figure 2. Line drawing of *Panulirus guttatus* showing how the carapace length is measured.

Their native range is from Bermuda to the southeast Florida coast, Bahamas, Cuba, Belize, Panama, the Caribbean islands, and the northern coast of South America as far south as Brazil. In Bermuda, they occur in reef habitats down to about 18 m (60 feet), although they are known to frequent shallower inshore waters in the more southerly part of their range.

In general, their biology and life cycle are similar to other spiny lobster species, which means a summer breeding season in Bermuda's climate. Male lobsters deposit a sperm packet, referred to as a "tar spot", on the underside of the female's carapace. When the female releases her eggs, she scratches the "tar spot" to release sperm to externally fertilize the eggs. The female then carries the fertilized eggs under her tail. In this state, she is referred to as "berried" and all berried female lobsters, regardless of species, are protected by law and must not be taken.



Figure 3. A late stage spiny lobster phyllosoma

The eggs hatch after about four weeks and the larvae, known as phyllosomas, drift away on oceanic currents. As with the Caribbean spiny lobster, these larvae will go through many morphological changes over an extended period of development, with each molt bringing a distinctive new look – most of them looking more like aliens than an adult lobster (Figure 3). The final larval molt results in a puerulus larva, which finally looks similar to an adult and is ready to settle in a shallow reef habitat.

In Bermuda, Guinea chicks were historically caught primarily as bycatch in fish pots, with some commercial fishers targeting them during the spring and summer months. However, the fishery was effectively closed in 1990 when fish pots were banned. Although restarting the fishery for Caribbean spiny lobster was the priority in the early 1990s, experimental trapping for Guinea chicks began in 1998. A few fishers who had prior experience targeting this species worked in collaboration with the Fisheries Division for several years to test the catch rates and bycatch levels of different types of traps.

Since 2008, the commercial fishery for Guinea chicks operates as a separate specialty fishery with a total of 8 licences that are available to full time fishers for an additional fee. The main trap used in this fishery is a small plastic trap with two entry funnels that is reinforced with metal bars to enable it to withstand the heavy wave action in local waters during the fall and winter months (Figure 4). Each participant in the fishery has 18 traps.



Figure 4. A Guinea chick trap with buoy rope.

The commercial Guinea chick fishery follows the same season as the spiny lobster fishery, and runs from September through March, although many participants stop fishing at the end of January as heavy weather during February can often result in the loss of traps. Over the course of a typical season, the 8 participants will haul roughly 5,500 individual traps, catching about 13,000 Guinea chicks on average.



Figure 5. Part of a commercial Guinea chick catch

Only the male Guinea chicks are kept for market because historical catch data suggested an imbalance in the sex ratio for this species (Sutcliffe, 1953; Evans et al., 1995), and this was borne out during the experimental fishery (Luckhurst et al., 2001). However, it is still not clear whether this skewed sex ratio is

a biological feature of the local population or the result of differences in the habitat preferences of the males and females that give them differential exposure to the traps. Following research conducted during the 2011-2012 season, a minimum size restriction of 57 mm carapace length (2.25 inches) was put in place formally in 2013-14 for the commercial fishery.

Recreational fishers with a valid lobster diver licence may also target Guinea chick lobsters, under the same terms and conditions that apply to the Caribbean spiny lobster. Lobster divers may also take locust lobsters, also known as slipper lobsters. However, every lobster taken, regardless of species, counts towards the diver's bag limit of two (2) lobster per day. It is also important to remember that any lobster of any species is protected from harvest while it is carrying eggs.

FAQs about catching Guinea chick lobsters recreationally:

Q: Do you need a licence to recreationally catch Guinea chick lobsters?

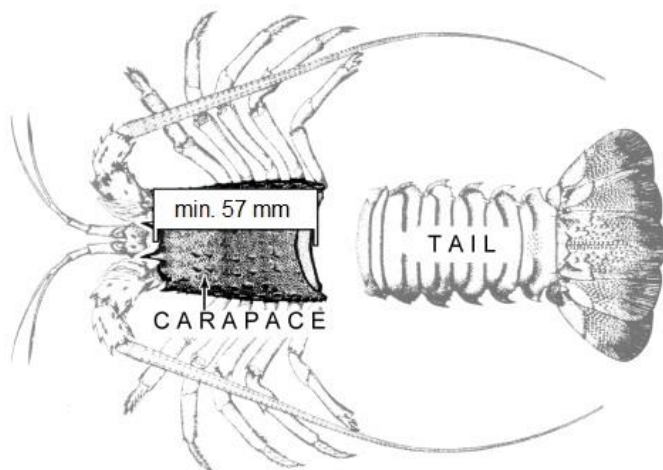
A: Yes, the Fisheries Regulations of 2010 state that a licence is required to catch a lobster in Bermuda waters, regardless of species. If you obtain a recreational lobster diver licence then you are permitted to capture Guinea chick and slipper lobsters as well as spiny lobsters. People who do not have a lobster diver licence are not permitted to take lobsters at all, should not be in possession of a lobster while at sea, and should not even be in possession of a noose or snare that could be used for taking lobsters.

Q: Assuming that you have a recreational lobster diver licence, do Guinea chicks count towards your daily catch limit?

A: Yes, the Fisheries Regulations of 2010 state that licenced recreational lobster divers may only catch two (2) lobsters within a 24 hour period, and this applies as a total across all types of lobsters.

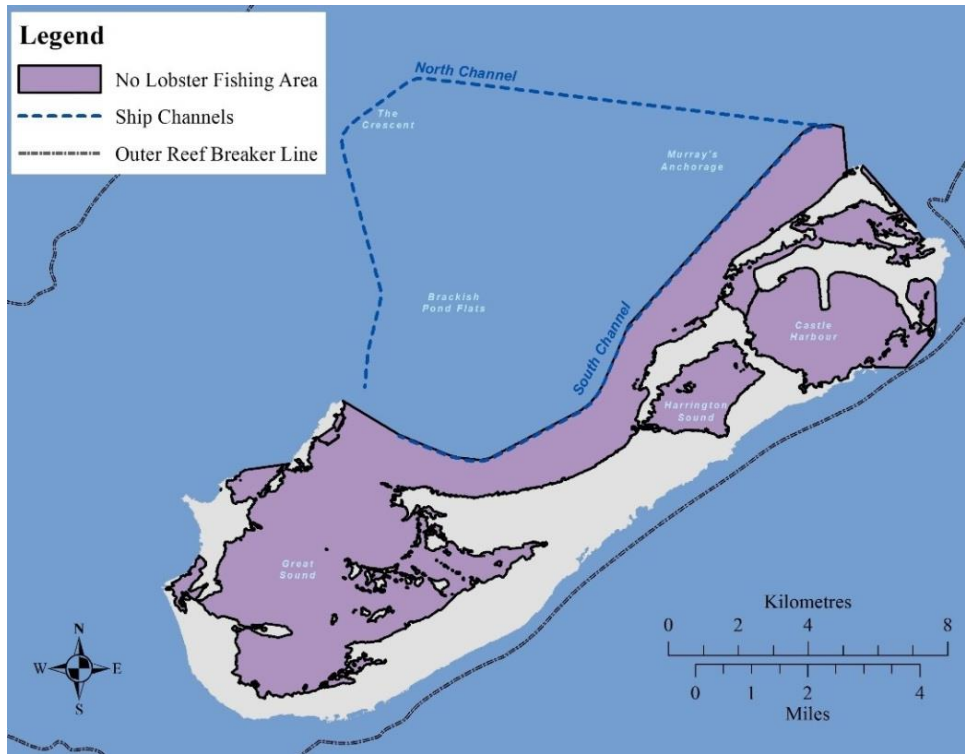
Q: Is there a minimum size for Guinea chicks?

A: Commercial Guinea chick lobster fishermen are required to release any Guinea chick lobsters under 57 mm (or 2.25 inches) carapace length. However, this is not yet a legal requirement for recreational divers. Nonetheless, recreational fishers are encouraged to release small Guinea chick lobsters under 57 mm as they are likely to be immature.



Q: Are there restricted areas when diving for Guinea chick lobsters?

A: Yes, the regulations that set out where recreational lobster divers may dive for lobsters, and where they may not, apply to all lobster species.



Q: Can Guinea chicks be caught all year round?

A: Commercial Guinea chick lobster fishermen operate from the 1st of September through until the 31st of March of the following year, however there is no legislated season for the recreational capture of Guinea chick lobsters yet. Be aware that it is an offense against the Fisheries Regulations to be in possession of egg-bearing female lobsters, regardless of the species. Guinea chick lobsters mainly reproduce during the spring and summer months so it is highly likely that females caught during this period will be carrying eggs.

Q: How do you catch Guinea chick lobsters?

A: Recreational divers are only allowed to use a noose to catch lobsters of any type, and this applies to Guinea chicks. Spearfishing lobsters is strictly prohibited.

Q: Are you allowed to use SCUBA equipment when catching Guinea chick lobsters?

A: No. Lobsters of all types may only be caught free-diving. SCUBA equipment is not even permitted to be in the same vehicle (boat or car) as captured lobsters.

Q: Can Guinea chick lobsters be taken while hunting for lionfish?

A: Yes, as long as you have a valid recreational lobster diver licence and you are in an area where lobster diving is permitted, then you can take lobsters with a noose.

***By Dr. Joanna Pitt and Dr. Tammy Warren,
Marine Resources Section***

WHAT IS THAT TRASH ON THE BEACH?

It seems impossible to walk along a beach these days on Bermuda and not encounter some form of plastic pollution. If you are like me, you may find yourself looking at a piece of flotsam wondering what it is and where it has come from. Some are more frequently seen than others and a fair amount originates from the fishing industry. Other than the ubiquitous assortment of ropes and buoys, these are the ten most common objects associated with various industrial and artisanal fisheries that you might find washed up along Bermuda's coastline. Virtually all of these items originate from foreign fishing vessels, operating within their own national waters or on the high seas.

1. Octopus shelter-pots



This pot is specifically designed for octopus fishing. Rather than using bait as the attraction, it makes use of the octopus' natural behaviour of seeking holes to shelter in. Unglazed earthenware pots were traditionally used in this fishery, however plastic has become popular because it is a less delicate and more economical material. Concrete is poured into the base of each pot to act as ballast. This passive method of fishing is commonly practiced in the Mediterranean and Eastern Atlantic and consists of roping the plastic pots together

and laying the trap lines on the seabed for several days before hauling. As a point of interest, some of the pots have identifying marks which have allowed their point of origin to be traced (see www.projectaware.org/update/octopus-pots-help-tell-story-global-marine-debris-problem).

2. Powdered fluorescent light sticks



The fisher activates the glowing light by snapping and shaking the stick. A chemical reaction produces the light, which typically lasts between 3-12 hours depending on the size of the stick. Once activated, the sticks are attached to monofilament fishing line in order to attract fish (primarily swordfish) to baited hooks at night or in deep water. An artisanal fisher might only use three or four lights during a single fishing trip whereas an industrial long lining operator can deploy hundreds of lights during a single set.

3. Crab and lobster trap funnels

These black plastic funnels, associated with various North American crustacean fisheries, normally come in two styles; a smaller oval (or occasionally rectangular) shaped funnel used in traps to catch stone crabs and a larger square shaped funnel used in traps to catch lobsters. The funnels are inserted into pre-cut holes and attached to the trap with fasteners that often rust away, releasing the funnel to float to the surface.



4. Crab and lobster trap escape vents



Internet image

Escape vents are installed on traps in order to allow under-sized crabs and lobsters as well as non-target species, like fish, to leave the traps after entering them. The rectangular vents allow crabs to leave lobster traps whereas circular vents permit lobsters to escape from crab traps. The vents can also be used in combination with ghost panels to create a larger opening which allows marine life to escape from ghost traps (i.e. traps that have been lost or abandoned and are no longer being checked by the fisher). The panels are attached with either biodegradable or ferrous fasteners and located in a position which allows easy exit from the trap once the fasteners have come undone and the

ghost panel falls off and floats away. The number and size of the escape vents vary depending on where the traps are set and hauled. For those that are interested, in the Gulf of Maine rectangular escape vents must measure at least 1 15/16" x 5 3/4" and the circular vents must measure 2 7/16" diameter. For the outer Cape Cod and southern New England regions, rectangular escape vents must measure 2" x 5 3/4" and the circular vents must measure at least 2 5/8" diameter.

5. Plastic trap identity tags

Trap tags are used to identify specific traps with licensed fishers. North American regulatory authorities usually require that each fished trap has its own tag. Plastic tags come in different shapes and colours, although most have text with raised lettering that identifies what they were used for, where they came from, and when they were used. For example, lobster traps from the Gulf of Maine have thin strip tags of

a solid colour (which changes from year to year) stamped with alpha-numeric text. Knowing this allows us to deduce that the yellow tag pictured below came from a Maine lobster trap issued in 2005. Given the fact that hundreds of thousands of traps are put into the sea each year in the Caribbean and along the Atlantic coast of North America, it is not surprising that these ID tags frequently wash up on Bermuda's shores.



6. High-flyer pole

This piece of equipment is routinely used in the swordfish and tuna longlining fisheries. It consists of a pole (aluminium or PVC) that is weighted at one end (to keep it floating in a vertical position) with some form of floatation (usually foam buoys) fixed to the centre and a flag or aluminium radar reflector attached to the top of the pole. High-flyers are used to mark the beginning and end of the baited long line sets, as well as various points along the line.



7. Plastic weak link connectors

You may find one of these lying on the beach by itself or attached to a foam buoy and assume (correctly) that the plastic snapped causing the buoy to float away from the gear with which it was originally cast into the sea. This is indeed what happened because the 'break' in the plastic ring is actually part of the design. This type of plastic connector is used by the fishing industry to attach a surface buoy to some form of fixed gear below (i.e. lobster and crab traps or baited longline). The connector has two rings, one of which is intentionally designed to be weaker than the other (ring on the right in image below). Rope is used to attach the surface buoy to the strong eye and the fishing gear to the weaker eye. The notched breakable section (weak link) is designed to snap when subjected to very heavy pull pressure, for example when a whale becomes entangled in the float line, thus allowing the buoy to break away from the fishing gear.



Internet image

8. Various plastic fish containers

These containers come in a variety of shapes, colours, and sizes. The ones most commonly seen on Bermuda are the stackable rectangular fish boxes (below left) and the round mesh baskets (below right). They are used for many different purposes by the fishing industry while at sea as well as on shore and, if they are still in good condition once they have washed ashore on Bermuda, they can be re-purposed for many non-fishing uses. I routinely use fish boxes to lug compost, manure, and seaweed (when in season) to the home garden. Just make sure the boxes do not have drainage holes before loading them up and popping them into the back of the family car.



9. Hagfish barrel traps

Large plastic barrels such as the ones shown below will occasionally wash up as marine debris on Bermuda. I was mystified by the first one I found until some online research finally allowed me to identify it as a hagfish barrel trap. The barrels are typically drilled with numerous half-inch holes and have several plastic conical funnel entrances (which are themselves sometimes found on local beaches, minus the barrel). The

barrels are baited and dropped overboard to rest on the seafloor where they catch the Atlantic hagfish, arguably one of the most unusual and repulsive fish in the ocean.



Internet images

10. Casting egg

The casting egg is basically a weight used by fishers to throw a small jig or light lure a long distance to surface feeding fish. Unlike traditional lead weights, the casting egg floats thus preventing the hook from sinking. A casting egg is used in combination with a light tackle rod and spinning reel, normally when fishing from a beach, pier, or rocky shoreline. It looks exactly like a chicken egg and can be made from either plastic or wood. In fact, its appearance inspired me to use the ones I found as dummy eggs to encourage my hens at home to lay in their nest box rather than in the garden shrubbery.



Internet image

**By Dr. Mark Outerbridge,
Senior Biodiversity Officer**

BERMUDA'S PROTECTED AREA DIVE SITES

There are now just over 30 year-round dive site protected areas on the Bermuda platform (<https://www.gov.bm/bermudas-no-fishing-areas>). The majority were established [into law in 2000](#).



Many of these dive sites pre-exist the legislation by at least two decades when a group of concerned divers decided to install moorings systems on the most popular dive sites as a way to protect them from increasing human traffic and the damage that the placing and retrieving of anchors could cause. This also coincided with the acceptance that Bermuda's reef fishery had been overexploited by the "fish pot" fishery through much of the middle and third quarter of the 20th century. These pots, essentially passive baited one way in and no way out wire

traps, were banned in 1990 but the effects of fish depopulation through this indiscriminate fishing method and the long tail impact of lost traps on reef fish populations had been acute. The decline and lack of reef fish, despite incredibly healthy coral, was especially observable by the more experienced members of the local diving community and was regularly noted by divers comparing Bermuda to other jurisdictions.

"There used to be Nassau groupers on every dive on South Shore especially at South West Breaker" – reflects one old time diver – "those were the first we saw disappear and then the ubiquitous snapper, red hinds, angel fish, Spanish hog fish and parrot fish began to decline. The Nassau in particular were incredibly tame and the tourists and resident divers looked forward to the interaction with them".



A free diver exploring Bermuda's newest protected wreck, the Niobe Corinthian (Photo by Alex Pilgrim)

The lobbying effort to create specific protected dive sites was therefore driven by concerns around the preservation of the total ecology of the areas, including the fish populations. Shipwrecks are on 70% of these designated protected areas but the rationale was to pick sites that had the most attractive and ecologically valuable set of features. This is why the protected areas around the dive sites extend past the actual diving features themselves and why they are totally protected year-round from all forms of fishing; recreational and commercial. In this way, selected diverse and healthy pieces of inshore habitat could have a rest from fishing impacts, restore themselves and consequently provide a richer experience for visitors.

It has been a success on many fronts. These areas are now iconic in the minds of many Bermudians and visitors and they represent one of the most memorable life experiences for anyone who has visited them. The branding of Bermuda through these protected dive and shipwreck sites has been an exceptional success and areas like North Rock, Eastern Blue and Western Blue Cut should be treated with the veneration that any of the world's most famous national parks and monuments inspire.



**Anemone at Eastern Blue Cut cave
(Photo by Philippe Rouja)**

Protected sites like Eastern Blue Cut, naturally rich areas where ocean and lagoon waters mix, today undoubtedly have more fish. There are significant troupes of blue parrotfish, visits by eagle rays, and, on any given visit, one to three resident black grouper - generally speeding away as one approaches from the southern entrance to the rift. On the north facing sand hole there is a strange dip about fifteen feet deep in the pale sand leading to the cave in the reef bar. Here the tidal current leaving the Bermuda platform pushes away the sand to maintain this sub reef cave or passage. As you dive into the dip there is a single rock at its bottom, in the mouth of the cave. It is a piece of fallen reef upon which resides a magnificent anemone, happily extending its tentacles. These rosy gel-like arms extend softly into the near constant current. Inside its arms, near its body, one or more long legged crabs and shrimp can usually be spotted. Living happily together, the anemone and crustaceans are mutually beneficial companions. Communalistic is the scientific term.

The sub reef passage is shaded but not dark like a cave would be. Lit up by shifting rays of sunlight coming through cracks and holes in the reef structures above, it is here that the black rockfish and schools of small shiny glassy sweepers want to congregate. Directly above them through several feet of reef the small rift or cut in the reef barrier seems to benefit from the same current which has allowed soft corals to flourish and that snappers, trumpet fish and grunts are equally attracted to. The snappers have figured out the connecting passages from the rift to the cave passage and they will appear or disappear from above and below as you dive over or under. On the right tide and moon there can be hundreds of sergeant majors gathered, maybe spawning.

During the summer, areas like Eastern Blue and Western Blue Cut, with its three shipwrecks literally piled on top of each other, are visited by anywhere from three to five commercial tour boats, easily exceeding 1000 visitors a month.

The discovery of a large multi species parrot fish spawning aggregation in 2011 at the protected wreck site of the US Civil War blockade runner Mary Celestia underlines the ecological value of these protected areas and there has been a definite increase noted in certain species at these sites since these areas were

protected. However, Nassau grouper are still completely absent and the recovery of some reef fish populations is now likely being impacted by the emergence of the lionfish, a now ubiquitous feature of these dive sites. Ironically, the conservation benefit of spearing this invasive apex predator has provided an interesting new dimension to recreational diving at these sites. Training in lionfish culling is now on the way to being its own certified dive specialty and many dives have the culling of this species as their primary focus. There are now three or four lionfish culling competitions per year.



The bow of the Niobe Corinthian (Photo by Alex Pilgrim)

There is now one additional fully protected site added to the roster through the deliberate sinking of the Niobe Corinthian. Impeccably cleaned and prepared as a dive site, it was dropped at a uniquely deep clear sandy spot inside the platform in 2017. 2.5 km southwest of the North Rock protected site, it has been designated a 200 m no fishing protection zone. It was initially thought the ship, a gambling venture gone wrong, was weakly built and would fall to pieces very quickly. However, in investigating the ship prior to committing to the project, it was discovered that the superstructure had deceived everyone; the ship was in fact a Gulf of Mexico oilrig service vessel built to withstand heavy and unpredictable seas. In preparing for her sinking, gaudy superstructure removed, she regained the nobility of her once proud heritage. She landed upright and with a high and strong seafaring bow pointing due north. From the moment it landed on the bottom in a sandy expanse, a school of endemic Bermuda Bream took up residence and she

is now hard at work providing a shelter for nature and a focal point for conscientious human environment interaction.

The original divers who put down those first moorings to save coral around popular dive sites who then lobbied for formal protection and grew the enterprise to what it is today, and the Stempel Foundation through the Bermuda Zoological Society who came forward early on and still underwrite the materials, maintenance and deployment of the moorings, are owed a huge debt of gratitude for their efforts. It was prescient of today's global concern with conserving nature and the economic benefit conservation efforts would have on tourism dependent nations who have been positively engaged in such activities. Their

work has helped build Bermuda's reputation and positive standing as a nation concerned with natural conservation of the marine space, set the example of what can be done, and hopefully initiated the recovery we all need to be invested in as we manage Bermuda's and the world's marine resources going forward.



**A boat on the mooring over the wreck of the paddlewheeler Montana, Western Blue Cut
(Photo by Philippe Rouja)**

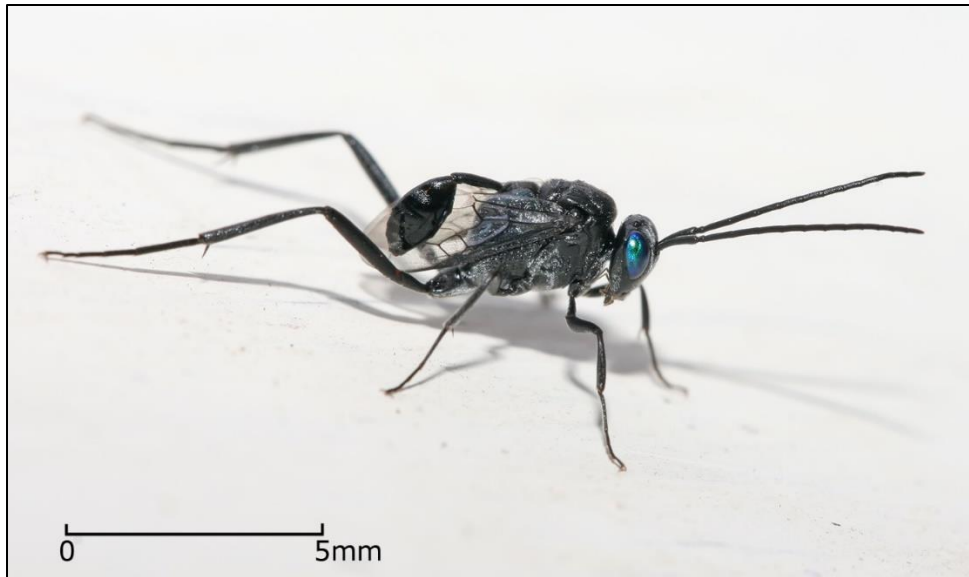
There are many online sources of information about the shipwrecks of Bermuda and the protected area dive sites but the most current and complete can be found at the joint website built by the DENR and the UCSD's Digital Heritage Lab – the Bermuda 100 (<http://bermuda100.ucsd.edu/dive-sites.php>). It features a list and description of all the sites, including the coordinates as well as holding information about some of the most well known and loved shipwrecks.

***By Dr. Philippe Rouja,
Custodian of Historic Wrecks***

THINK TWICE BEFORE SWATTING THAT 'FLY'

During the summer months you may occasionally encounter an insect trapped in your house that looks like a bizarre fly and you may be sorely tempted to reach for the swatter and squash it, but wait just a moment! You need not fear; it is not a pest and it will cause you no harm. Let me introduce you to the ensign wasp (*Evania appendigaster*). This insect belongs to a group of bugs collectively known as beneficial insects because of the valued services they provide to humans. So, what is the special service provided by the ensign wasps? They discretely parasitize the egg cases of cockroaches, those universally reviled insects that creep into our houses and make such a smelly mess inside the cutlery drawer and the kitchen cabinets.

When a mature female ensign wasp finds a fresh cockroach egg case she deposits a single white egg inside it. The wasp egg then hatches and the developing larva goes through a series of molts during which time it devours all of the cockroach eggs in the case (which may be as many as 50, depending on the species). Pupation also occurs within the egg case, after which the adult wasp emerges. The adults live for only two or three weeks which, in my opinion, is far too short a life span for such a worthy insect!



Internet image by Muhammad Mahdi Karim (<https://commons.wikimedia.org/w/index.php?curid=6999089>)

The ensign wasp, so called because the stalked abdomen resembles a sailor's signal flag.

**By Dr. Mark Outerbridge,
Senior Biodiversity Officer**

News & Notices

Spearfishing statistics reminder

Recreational spear fishers are reminded that spearfishing statistics should be submitted monthly using the online portal at www.fisheries.gov.bm. There should be an entry for each date / location that you fished, and a “No fishing” entry for the final day of any month in which you did not fish. Your catch statistics must be up to date through at least the end of July if you are applying for a spearfishing licence for the upcoming season, which starts on September 1st. Applications will be taken any time from Monday, August 2nd. Please call 293-5600 or email fisheries@gov.bm if you are having difficulties accessing the portal.

Recreational lobster diving licences

The 2021-2022 lobster season will begin on Wednesday, September 1st. DENR will be taking applications for recreational lobster diving licences for the upcoming season at the main offices in the Botanical Gardens from Monday, August 2nd 2021. As with the last few seasons, there will be a cap on the number of licences, which will be issued on a first come, first served basis.

Please note that if you held a lobster diver licence for the 2020-21 season and did not submit any statistics then you will NOT be granted a licence for the upcoming season. This decision has been made at the ministerial level, in consultation with the Marine Resources Board, and exceptions cannot be granted by DENR staff. Anyone who acts in an abusive manner towards any staff member will be given a two-year suspension.

Seasonally closed protected areas

The North Eastern and South Western Seasonally Closed Areas, also known as ‘the hind grounds,’ are currently closed to fishing, and will remain closed through the 14th of August 2021 (the first day they can be fished is August 15th). Also, the extended closure areas, known as the ‘grouper boxes’, within the seasonally closed areas are currently closed to fishing, and will remain closed through the 30th of November 2021. The coordinates for these areas can be found at: <https://www.gov.bm/bermudas-no-fishing-areas>

Planting Calendar – What to plant in the summer...

VEGETABLES

June

Beans, Cucumber, Squash, Tomato

July

Beans, Carrots, Tomato

August

Beans, Broccoli, Brussels sprouts, Cabbage, Carrots, Kale, Leeks, Mustard Greens, Pepper, Radish, Rutabaga, Tomato

September

Beans, Broccoli, Brussels Sprouts, Cabbage, Carrots, Cauliflower, Celery, Chard, Cucumber, Eggplant, Kale, Leeks, Mustard Greens, Parsley, Pepper, Potatoes, Radish, Rutabaga, Tomato, Turnip.

FLOWERS

June

Amaranthus, balsam, calendula, celosia, coreopsis, cosmos, gaillardia, gazania, globe amaranth, hollyhock, marigold, portulaca, rudbeckia, vinca and zinnia.

July

Celosia, cosmos, gazania, globe amaranth, impatiens, marigold, salvia, snow-on-the-mountain, vinca and zinnia.

August

Celosia, cosmos, gazania, globe amaranth, impatiens, marigold, salvia, snow-on-the-mountain, vinca and zinnia

September

Celosia, cosmos, gazania, globe amaranth, impatiens, marigold, salvia, snow-on-the-mountain, vinca and zinnia.



ON HER MAJESTY'S SERVICE



GOVERNMENT OF BERMUDA
Department of Environment and Natural Resources

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