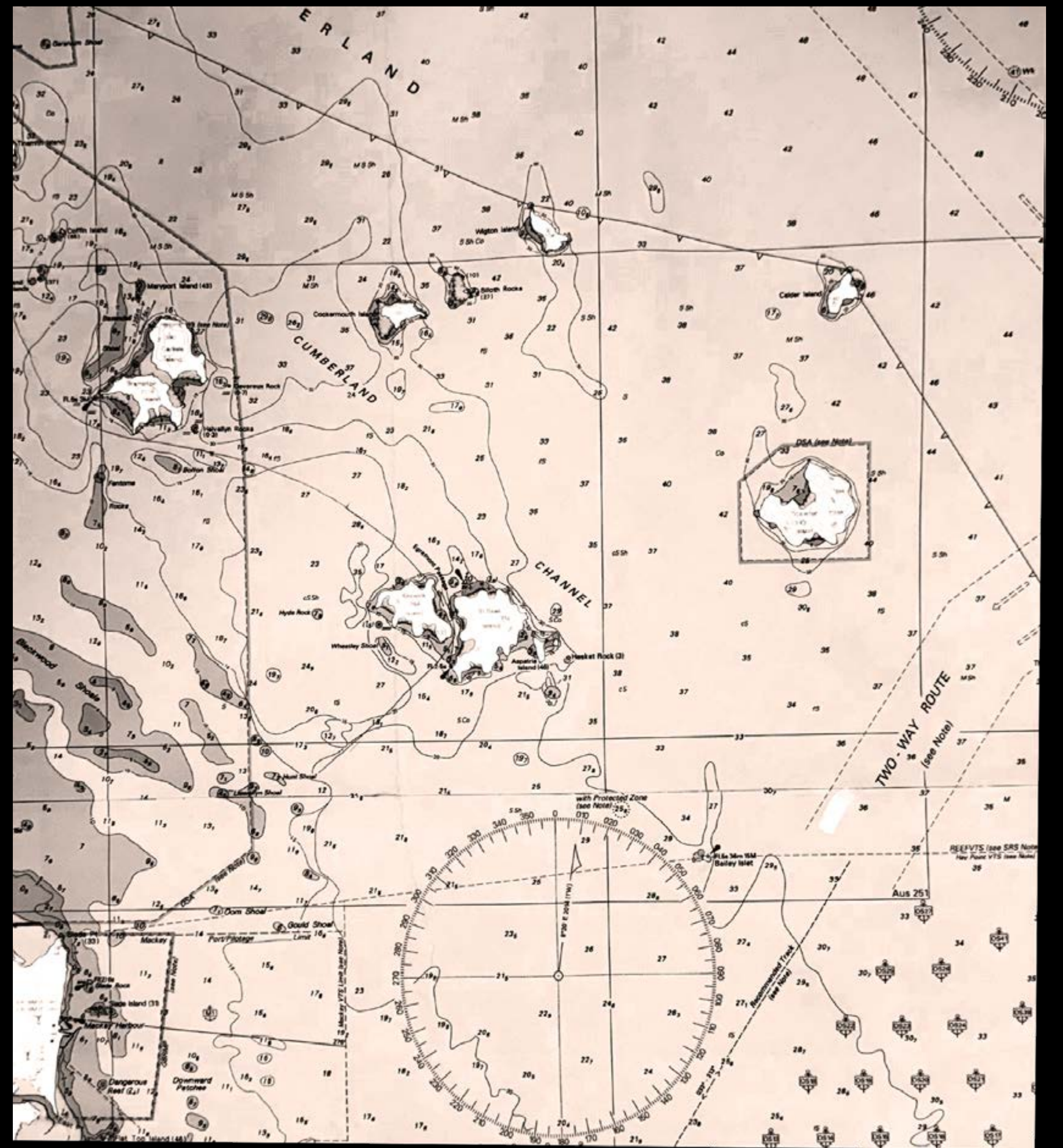




Mackay
Marina Village
by Port of Binnli

Great Barrier Reef CHARTER ITINERARIES

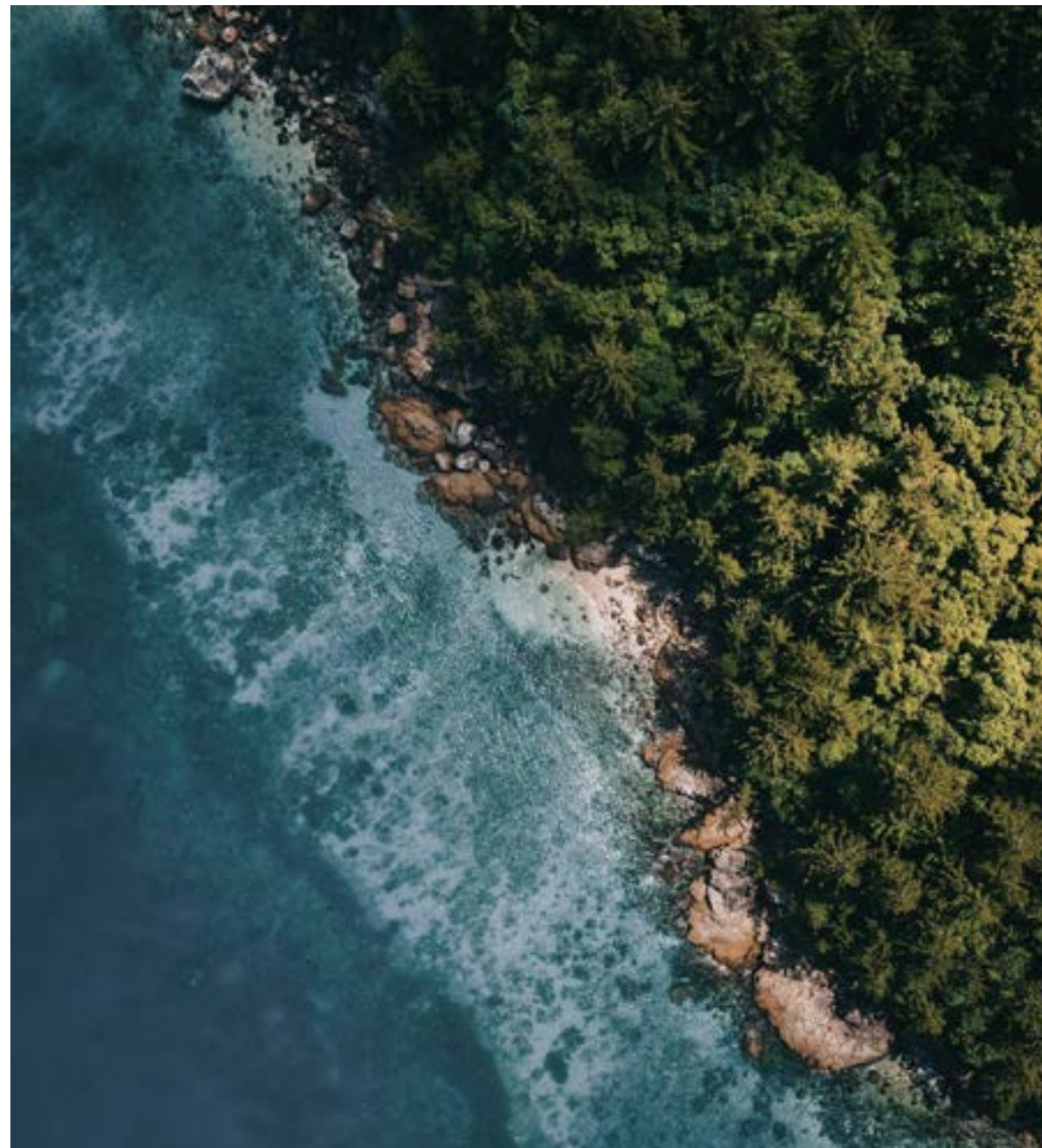
The South Cumberland Circuit Loop



THE SOUTH CUMBERLAND ISLANDS

The nine islands of the South Cumberland Island Group and surrounding waters are part of the Great Barrier Reef World Heritage Area and are protected. This is part of the sea country of the Ngaro people and is abundant with sea life such as whales, turtles, dolphins, rays and sea eagles. Off the coast of Mackay and south of the Whitsundays, they are protected as part of the South Cumberland Islands National Park.

With its palm-fringed esplanade, this yacht harbour, Mackay Marina is the perfect launch pad to explore the islands of the Mackay Region. Unravel the unique natural wonders above and below the ocean off the coast, cruise to Cockermouth, Keswick, Brampton, St Bees, and Scawfell islands.





KESWICK ISLAND
20.9089° S, 149.4059°

The treasured island, 17 nautical miles from the marina is a tropical paradise full of national parks, rainforests, white sandy beaches, and coral reefs, full to the brim with exotic and rare marine life. Anchorages are protected by the coves of Keswick, anchor for a night or two and explore.

On the southeastern side of the island, near the airstrip, Coral Gardens is one of the region's most iconic fringing reefs, perfect for drifting. Swim through caves, explore deep canyons, or just relax on anchor and take in the views. Snorkelers may spot a giant manta ray as they glide through Connie Bay, or Green, Hawksbill, Flatback and Loggerhead turtles. This is also a great anchorage in a north-east swell.

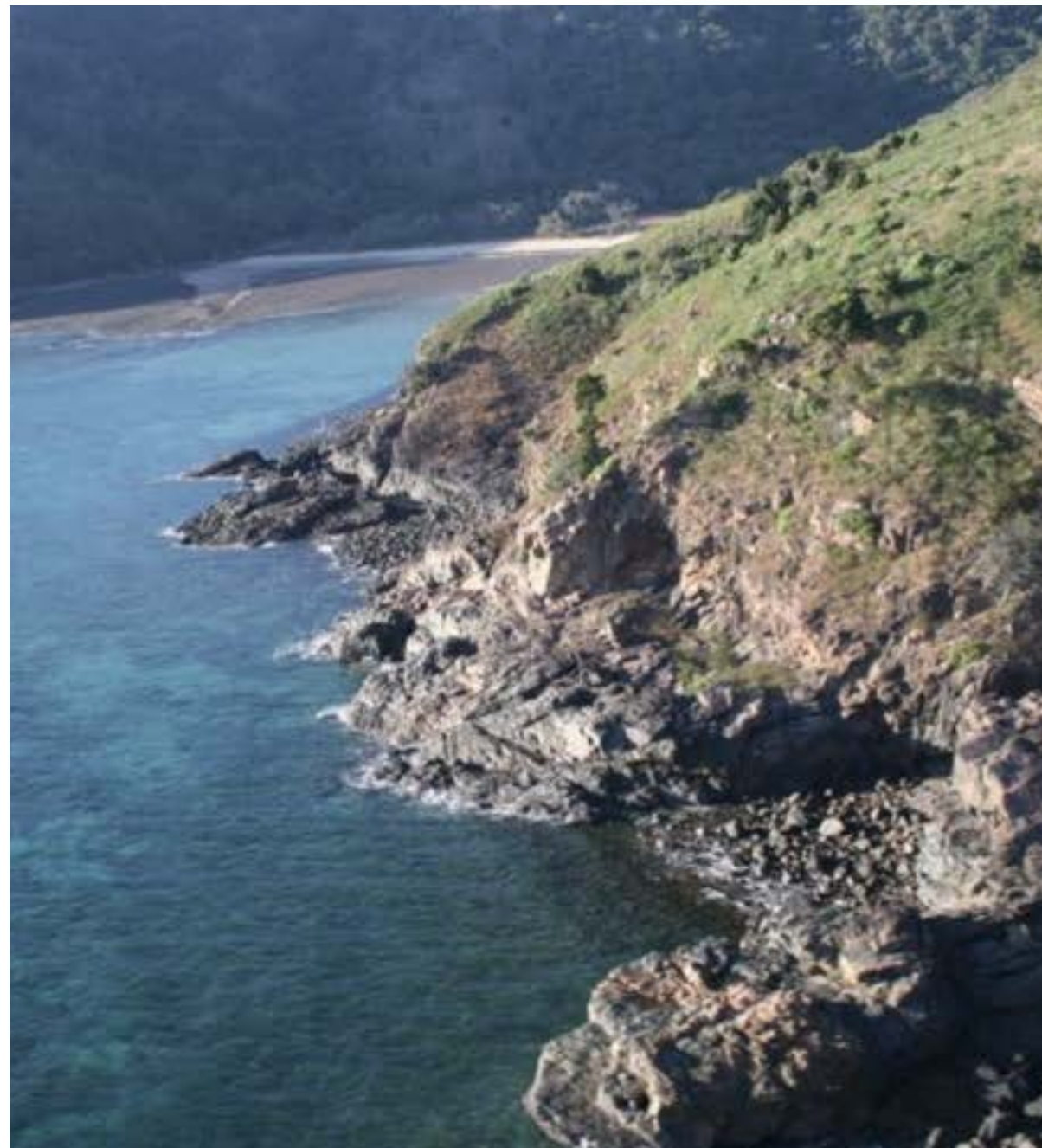
Dive enthusiasts will love exploring the shipwrecked 'The Singapore' a 17-metre vessel that sunk in 1877, now resting on the ocean floor in Singapore Bay. Very few divers have had the opportunity to explore the wreck, home to turtles, amazing coral formations and a variety of marine life all in the Marine Park Green Zone.

Hike or stroll through tropical rainforests and climb the hills to view the neighboring islands. When the tide is low, explore the sandy beaches and fringing reefs, when it's high kayak around the island. Swap yacht life for a night glamping or pitch your tent.

This underwater mecca is an angler's dream, will dinner onboard be Coral Trout, Parrotfish or a Giant Trevally? The fishing is fantastic due to Keswick Islands' perfect proximity to the outer reef and protected waters of Egremont Passage, it's teaming with an abundance of coral reefs and mangrove habitats. All wrapped into the Great Barrier Reef Marine Park, you couldn't get a better spot for deep-sea reef fishing. Load up on tackle and bait and get some local tips from the kiosk.

On the south side is Victor Bay, a short tender ride will take you to a large beach, scramble around the rocks and watch big schools of fish swim by. This is a great anchorage when there are strong N/NE winds, as is Basil Bay. When conditions are right there are plenty of places to anchor without a mooring. Horseshoe Bay has private moorings and is the better location to moor in prevailing S/SE winds.

Keswick Island is a true nautical adventure.



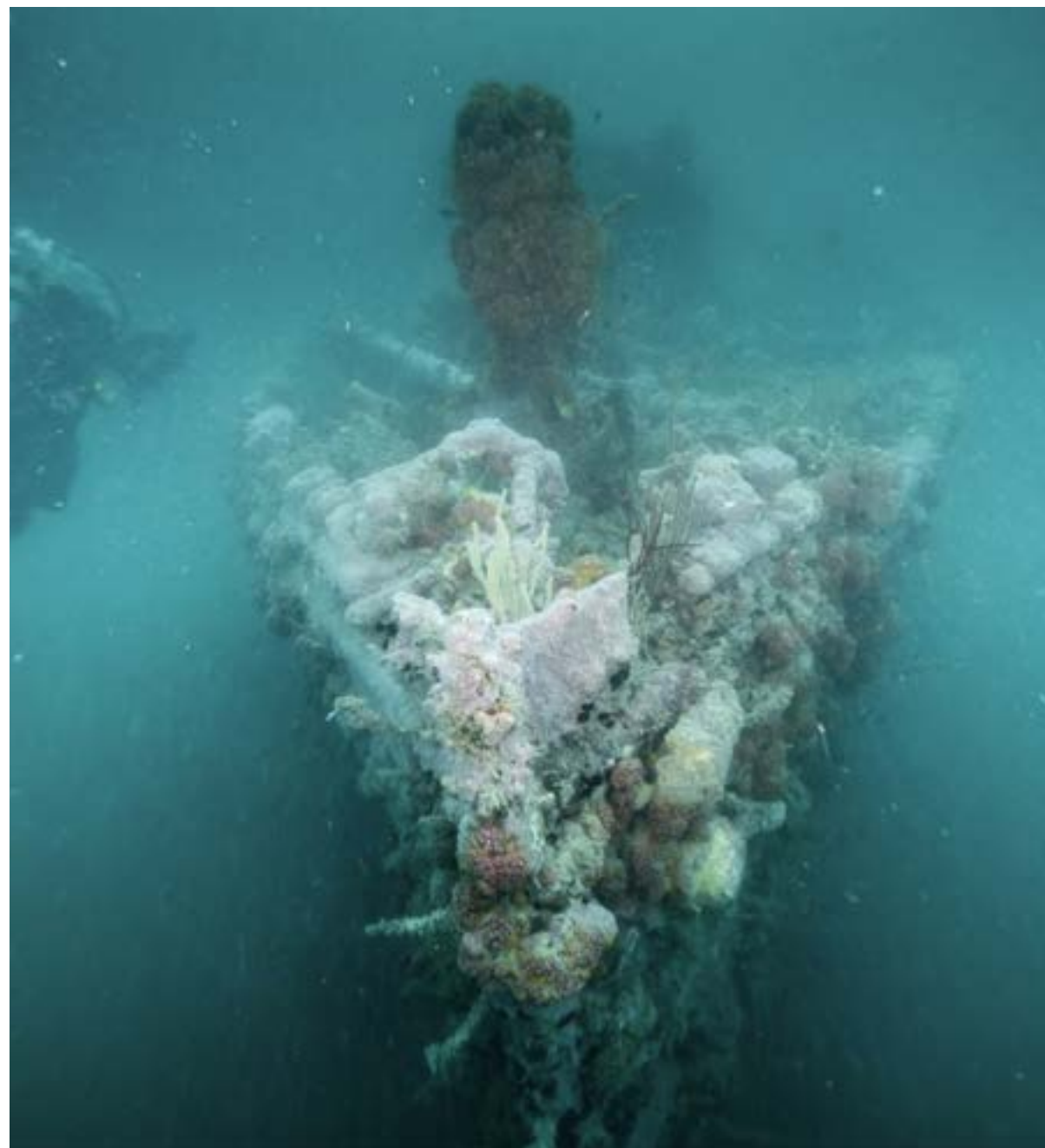
ST BEES ISLAND
20.9190° S, 149.4433° E

St Bees Island is a hidden gem, a quiet volcanic isle fringed with reefs and embedded rainforests. On the southern end of the channel in between St Bees and Keswick Island is a public mooring at Homestead Bay. Here you'll find Eagle Rock, ideal for whale watching from July each year as they migrate north to mate and have their calves.

This tucked-away paradise is home to a world-famous Koala population and wallabies.

Cruise past, anchor for the night or spend the day enjoying the stunning bays and colourful coral reefs.

Just off St Bees Island, snorkellers and divers can explore the shipwrecked 'Cremer' that ran aground in a storm in 1943. Now home to Sweetlips, Honeycomb Groupers, and turtles.



SCAWFELL ISLAND
20.8672° S, 149.6161° E

Cruise the 10 nautical miles to Scawfell Island, the land of butterflies. The north-coast sandy bottom anchorage in Refuge Bay is surrounded by rolling hills and is well-sheltered from the south-easterly trade winds.

Launch the tender or swim ashore to the National Park to see native trees sprinkled with a kaleidoscope of blue tiger butterflies, such an enchanting experience. Spot a Satin Flycatcher, a small blue-black and white bird with a small crest and listen for a wolf whistle or a loud "currawong" call from a Pied Currawong.

Seek, colourful corals and ancient Pleistocene reefs bordering Scawfell Island. Beachcombers will love the sandy beaches and the calm, crystal-clear creek on the western side of the island. Paddleboard or kayak in the stunning bay, surrounded by steep, mountainous slopes that protect from the south-easterly winds.

Anchor on the eastern side of the bay, where massive gum trees grow down to the water's edge. Home to local koalas and a new species of leaf-tailed gecko.



WIGTON ISLAND

20.7390° S, 149.4735° E

This little-known island is loved and kept under wraps by the locals, the ocean is clear, the sun shining, and the whales are frolicking! There's a nice white sandy beach to stroll and find tumbled sea glass and shells.

Don your mask and circum-snorkel the small yet punchy island. Divers go deep into 30-metre drift dives and see unusual under water critters and corals.

Kiteboarders can show off their tricks when the winds are right.

Wigton Island is deep into the heart of one of Australia's most stunning archipelagos, you will appreciate this place for its natural beauty!

SILLOTH ROCKS

20.7667° S, 149.4333° E

This 7-hectare island lies off the coast of Northern Queensland, 5kms from Wigton Island. There's epic spearfishing for the skilled, patient hunters and little cays for the explorers.

Silloth Rocks is a lover's paradise, get a kissing couple selfie on a sand bar with a bright blue backdrop. Underwater polished coral bars and colourful fishes impress the snorkellers.

COOKERMOUTH ISLAND

20.7725° S, 149.3987° E

Cockermouth Island (yes, you read that correctly), is one of the most jaw-dropping locations on the Great Barrier Reef, just 14 nautical miles from Scawfell Island. This secluded piece of paradise is a stunning well-kept secret, picture a sand spit winding its way through a turquoise lagoon.

Poke around for spider conch shells on the low-tide sandbar and investigate the coral flats. There's fantastic fishing, snorkelling, camping and kiteboarding at this off-grid uniquely named location.

45km northeast of Mackay, Cockermouth Island has a nice tidal reef for the adventurous, a glorious beauty for photographers and amazing wildlife for the naturalists.





CARLISLE ISLAND
20.7889° S, 149.2851° E

Carlisle Island is surrounded by aqua water and a fringing reef, right in Australia's backyard. After the rain, the island's mountain is lush and green and slopes down to a sandy point at the channel's entrance.

Snorkel when the conditions are calm, in the shallows rest on the sandy bottom and let the fish come to you. Beaked Coral Fish and Bengal Sergeant zebra fish may come and say hello.

Marine stingers are found in the waters of the park between October and May, so suit up.

The National Park protects all of Carlisle Island, campers will love sharing remote beachside sites with cute rainbow skinks and native birds.

The fisher people should expect catches of Giant Queenfish to take back to the yacht for the chef to Steam, poach, deep-fry, pan-fry, bake, grill, barbecue, smoke, or pickle. Sea urchins are a raw seafood delicacy, risk being stabbed and try one of the three edible versions - purple or short-spined, long-spined or red urchins.

Known by yachties as the "Fishbowl", the shallow passage between Brampton and Carlisle Island is an iconic snorkelling zone, expect to see reef sharks, turtles, and tropical fish.

Both islands are important turtle rookeries, sighting the congregation of turtles in this remote habitat is special.

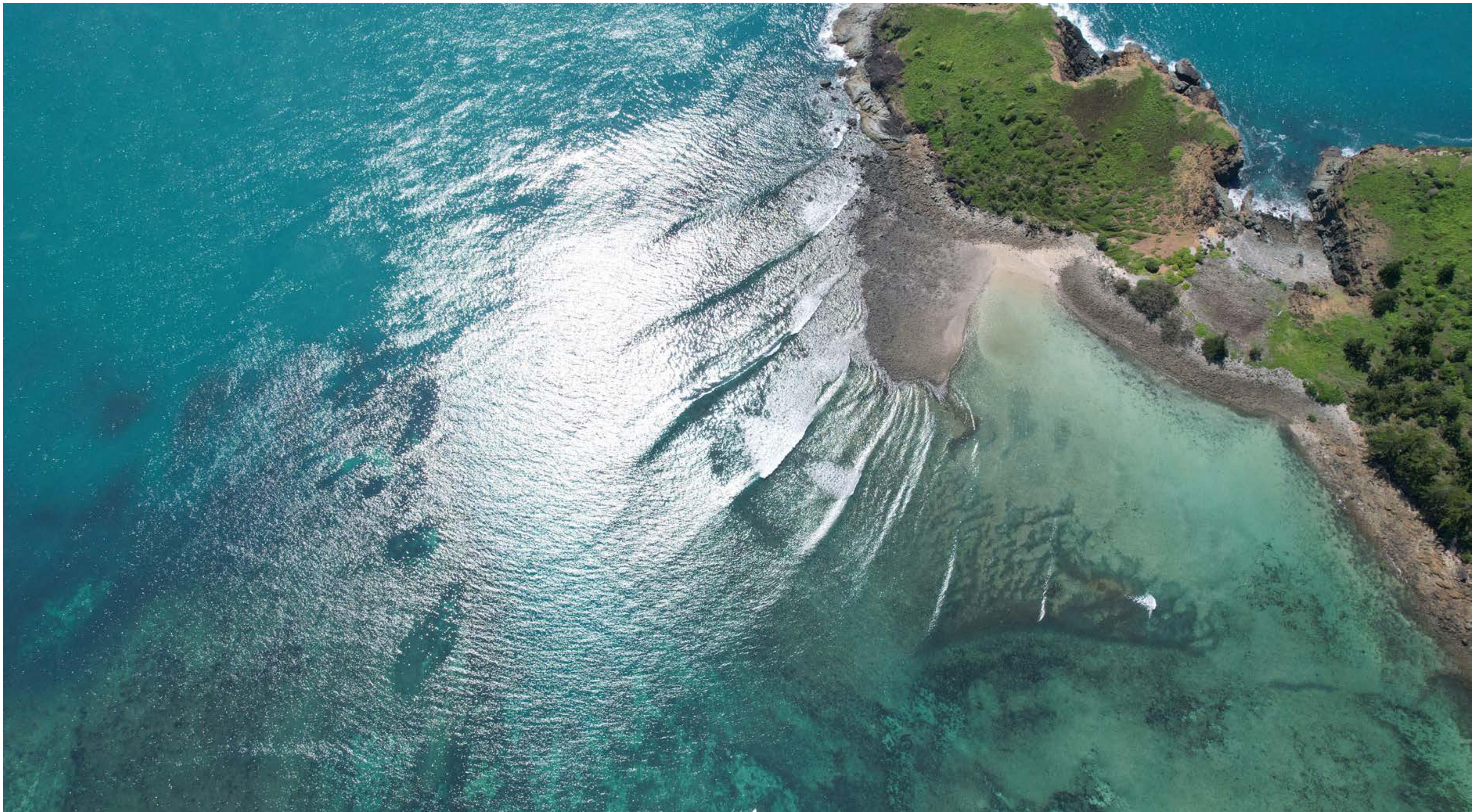
Those with a passion for extreme sports mixed in with the love of nature are in the right place!

Turtle Bay is a secret surf location, sssshhh!! Frother's should unstow the boards when it's blowing south-easterlies as it breaks in several spots in the bay.

Keen kite surfers and wing foilers will fly high when the trade winds blow at 12-25 knots in this untouched pristine wilderness.

THE PASSAGE
20.7889° S, 149.2851° E





BRAMPTON ISLAND
20.8080° S, 149.2736° E

Located at the southern gateway of the Whitsunday Passage, 50 kilometres south of Hamilton Island. The neighbour, Brampton Island, is beautiful, surrounded by corals, underwater swimmers and 12 sandy beaches.

With rugged peaks, secluded bays and turquoise waters, Brampton Island is sure to be a highlight of your Great Barrier Reef charter.

Sup in stealth mode through the clear ocean and spot prolific sea life such as black-tipped reef sharks, fish, and supersized rays.

Jump in the tender or kayak past the old resort and across the channel. From the northern side of Brampton, depending on the tides, swim or wade to Pelican Island and explore.

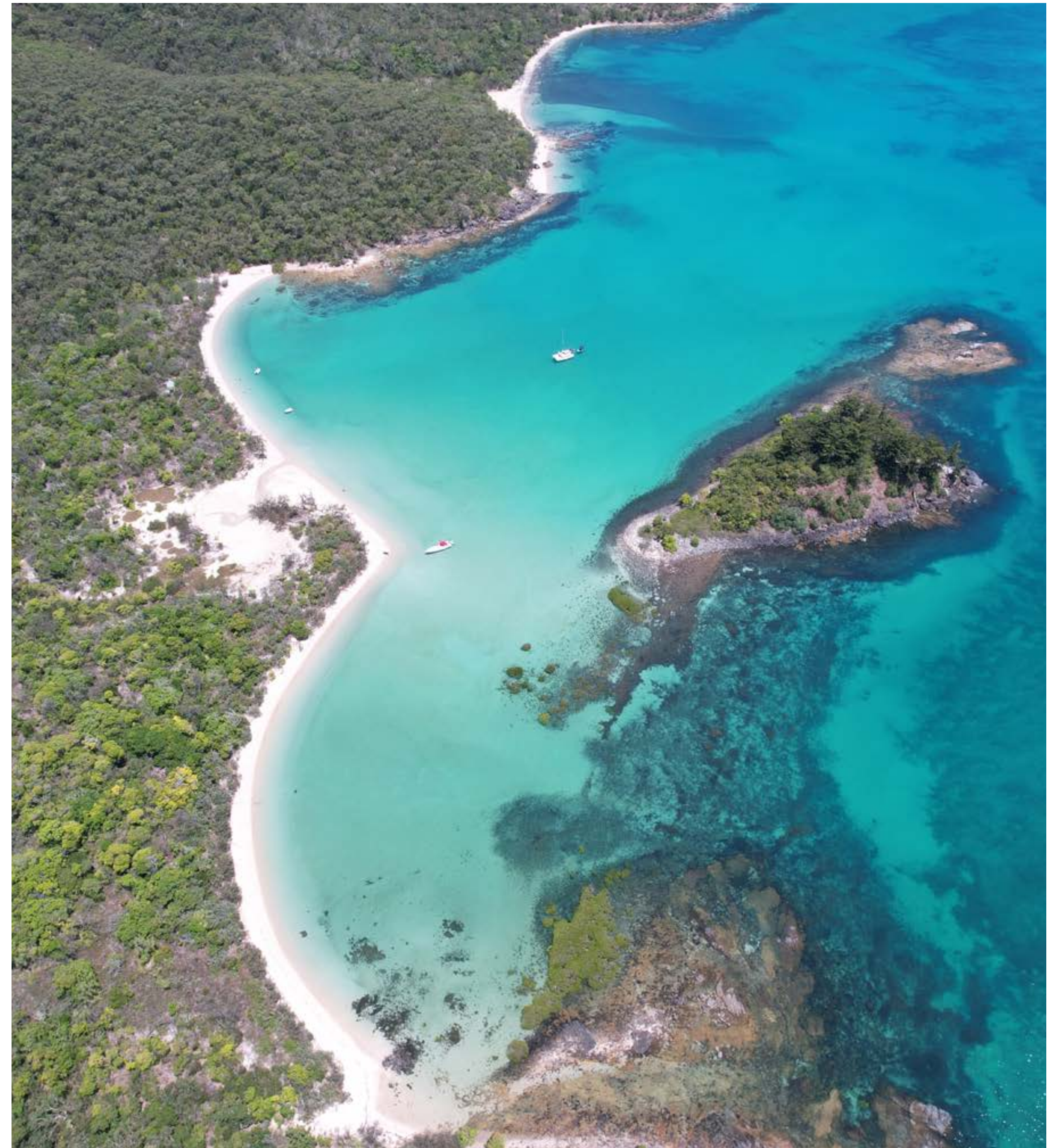
Snorkelers, jump into Brampton Island's fringing reefs -

Turtle Bay
Dinghy Bay
Western Bay
Osprey Point
Pelican Island
Brampton Roads

Much of Brampton Island is a National Park, shake off the sea legs, walk the track to the summit of Brampton Peak, 214 metres above sea level and take in the amazing views of nearby islands. Circumnavigate the island on the 9km track, and trail through open eucalypt forests and mangroves.

This idyllic location has an abundance of native bush and wildlife. Keep your eyes peeled for a koala, kangaroo, coastal sheath-tailed bat or a black flying-fox. Have a beach picnic ashore at Brampton's Western Bay or Dinghy Bay.

This natural and diverse haven is just 17 nautical miles from Mackay Marina.



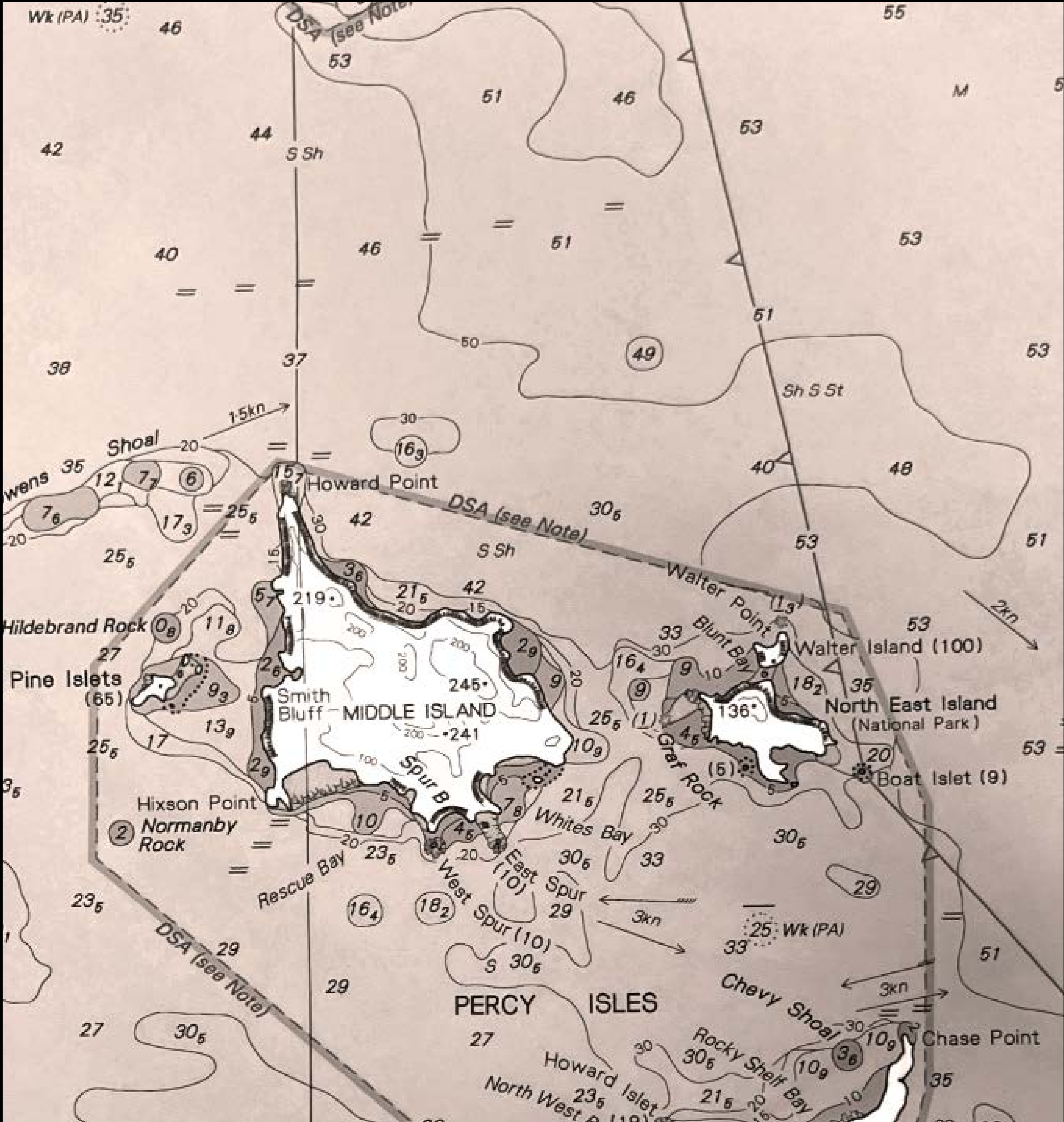




- 🌐 www.mackaymarina.com
- ☎ (07) 4955 6855
- ✉ reception@mackaymarina.com
- 📍 Mulherin Drive
Mackay Harbour
Queensland, Aus
4740

- ☎ **VHF**
Channel 16
is monitored by Mackay Marina
Call Sign 'Mackay Marina'
8.30am – 4.30pm

Southern Reefs & Lagoon Hopping





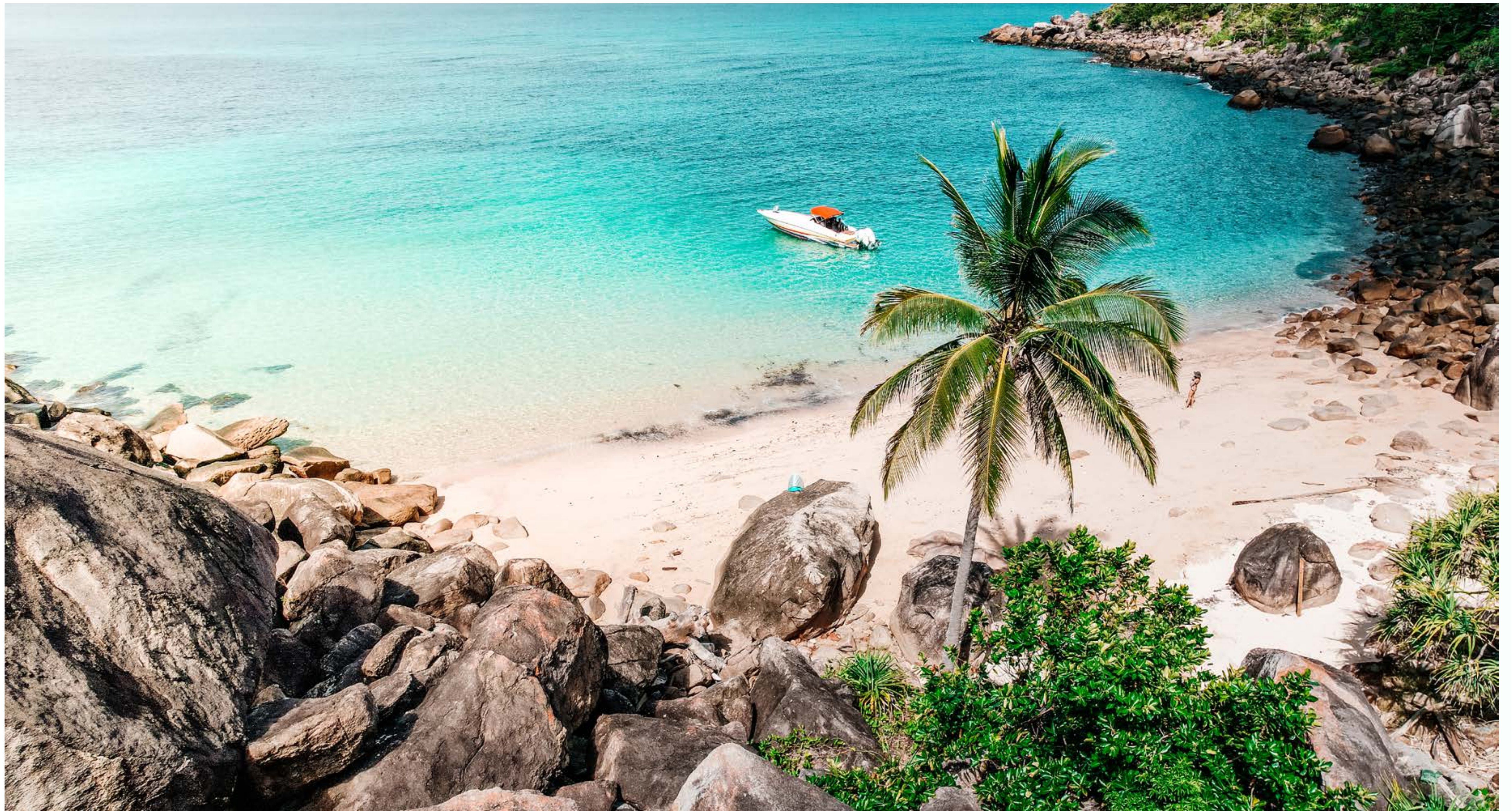
MACKAY MARINA
21.1116° S, 149.2243° E

Based at the southern portal of The Whitsundays, Mackay Marina is the perfect launch pad from Reef to Rainforest for owners, charterers and crew ready to explore the iconic reef and islands.

Southern Reefs and Lagoon Hopping will start at Scawfell Island and finish down south at Fitzroy Island, hopping through lagoons, reefs and tropical islands.



Mackay
Marina Village
by Port  Binnli



SCAWFELL ISLAND
20.8672° S, 149.6161° E

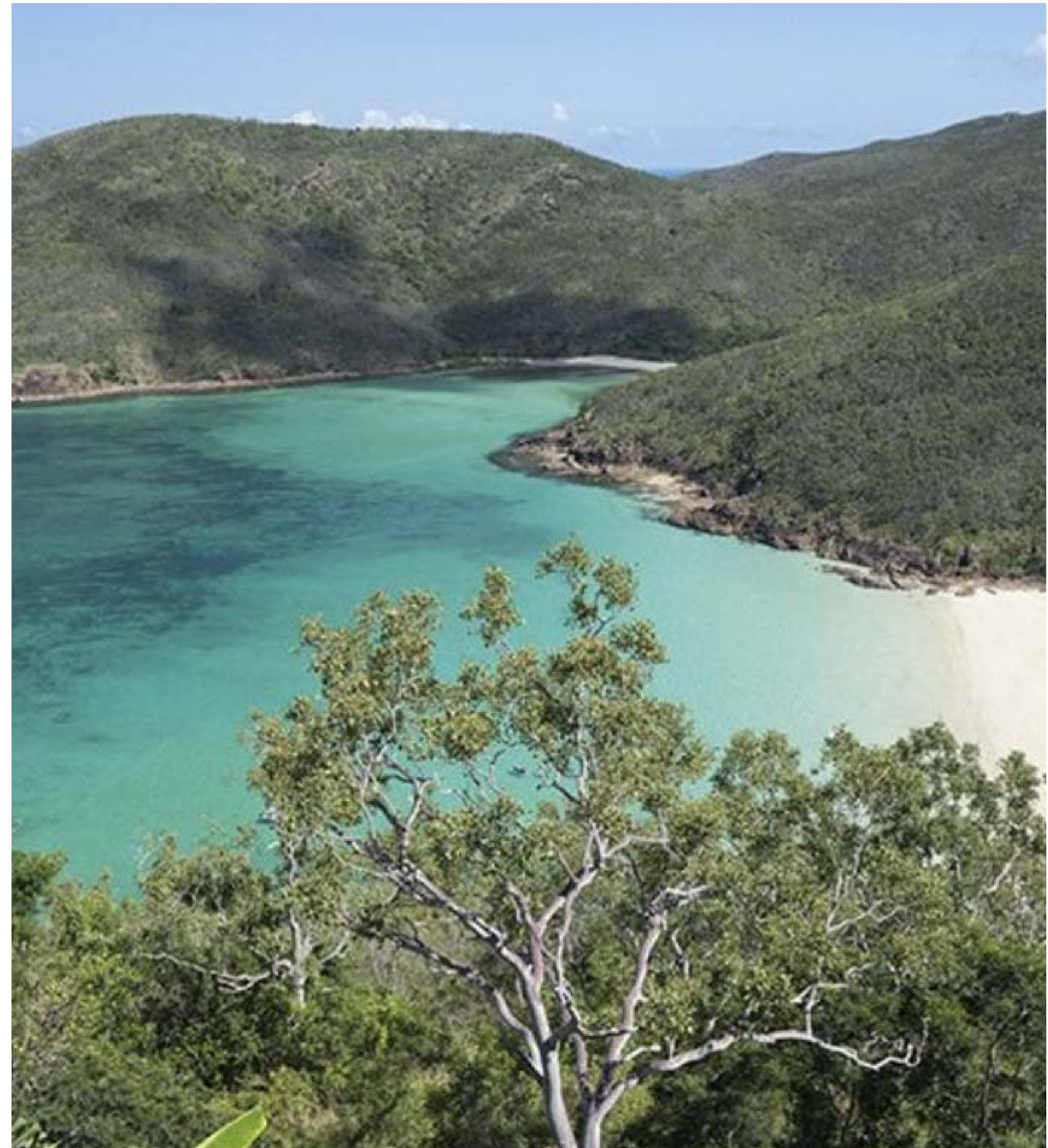
Guests embark at Mackay Marina and cruise the 32 nautical miles to Scawfell Island, the land of butterflies. Scawfell Island has electric blue water and lots of reefs to explore!

Snorkel with turtles and watch black-tip reef sharks fishing in the shallows of this remote bay.

The western side of the island has sandy beaches, corals, and ancient reefs, all within 60 kilometres north-east of Mackay Marina. Stingrays and rainbow fish are plentiful!

Refuge Bay on the north of the island is a fantastic anchorage surrounded by hills and is protected from the south-easterlies. Watch and listen to hundreds of blue tiger butterflies scattered throughout the National Park.


Mackay
Marina Village
by Port Binnli





NORTHUMBERLAND GROUP OF ISLANDS
PERCY ISLES
21.6598° S, 150.2632° E

130 km southeast of Mackay, The Percy Isles are fringed with palm-shaded golden sandy beaches and isolated anchorages. Perfect for those sailors seeking a remote escape.

Part of the Northumberland Islands, The Percy Isles, a scattered island chain, comprising several islands, each offering its unique charm, among these are Hotspur Island, Shrewsbury Rock, North East Island, Pine Islet, Pine Peak Island, South Percy Island, Middle Percy Island, Sphinx Island, and Walter Island.

The history of the Isles is captivating, filled with romance, mystery, tragedy, shipwrecks, and buried treasure.

MIDDLE PERCY ISLAND
21° 39' 35.37" S, 150° 15' 47.47" E

Middle Percy Island, is an off-grid destination that offers a unique unplugged adventure, amidst incredible natural beauty. Immerse yourself in this 2000-hectare tropical paradise, a yachting haven. Shelter from the trade winds at West Bay, this anchorage is ideal for browsing the collection of nautical memorabilia at the iconic A-frame, tree house.

The West Bay to Homestead, 4km walking track, runs along the island's ridge. The views of South Percy Island from the lookout are #instaworthy, post your photos at 'Ring Ring Rock', this is where you'll find the island's strongest phone signal.

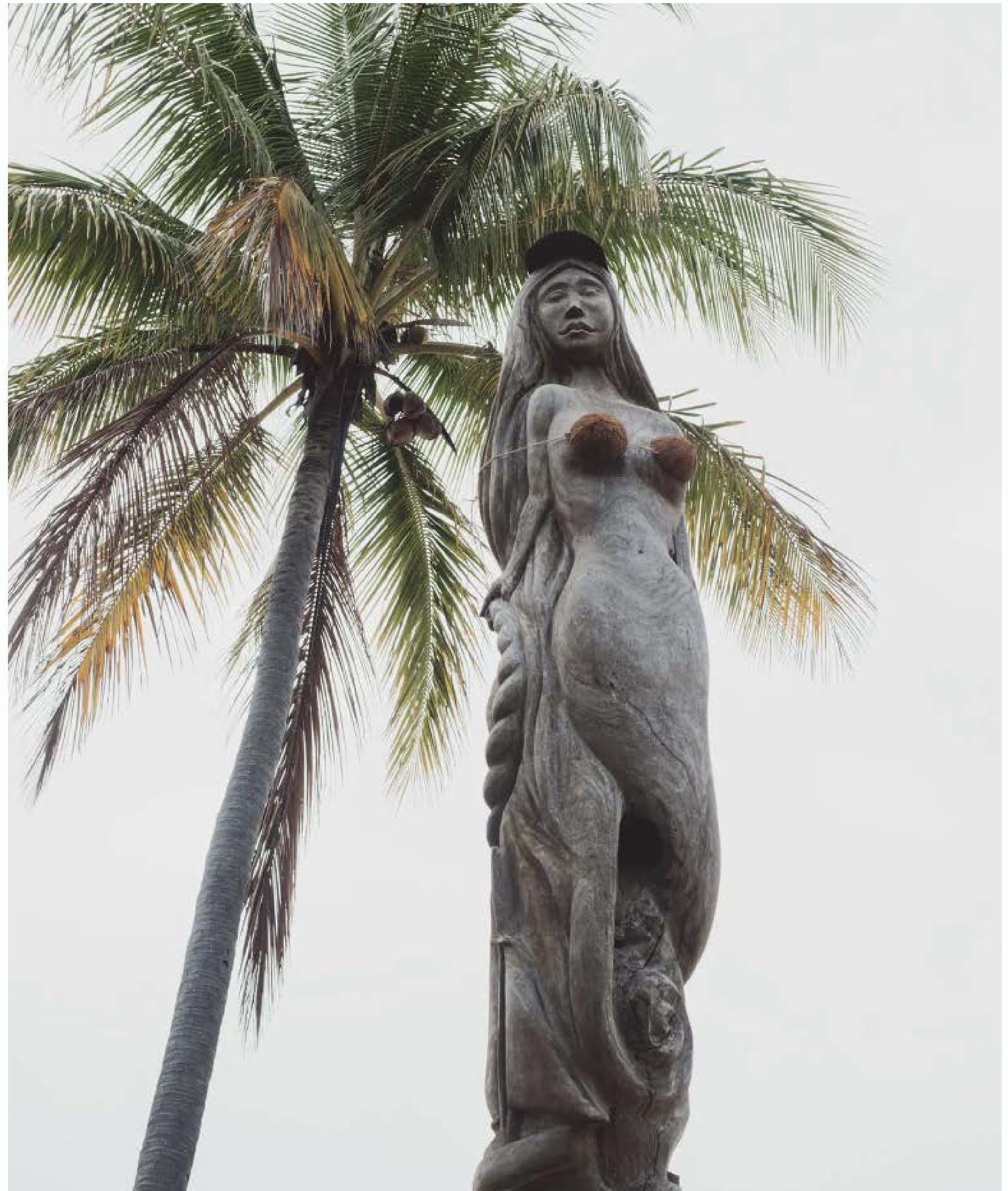
Kayaking, paddleboarding, or snorkelling in the crystal-clear waters from the aft of the boat are perfect afternoon activities. Anglers can try their luck in the offshore fishing grounds.

SOUTH PERCY ISLAND
20.8672° S, 149.6161° E

Scawfell Island, to the wondrous yachting escape, South Percy Island is a 70nm cruise.

Anchor at South Percy Island, in front of the steep rocky beach, on the southwest end of the island. Drop the anchor over sand and enjoy a calm night at this picturesque location. Put the drone up at sunset, cocktail in hand and find the hidden enclosed lagoon.







Head south to Considine Bay, North Keppel Island, the gateway to explore the many islands of the Keppel Archipelago.

The Keppel Islands, a cluster of 15 islands and islets, weave through narrow channels, and cruise past secluded bays and postcard-perfect beaches.

Look out for coral spawning, turtle nesting or manta rays gliding beneath your boat.

Monkey Beach Reef is an epic dive and snorkel site, a 40 minute walk from Fisherman's Beach. A protected bay, easily accessed from the island with high coral cover and 40 coral species.





Reef addicts will enjoy the Southern Reefs. Explore Masthead Island, a coral cay that is surrounded by a coral reef that is partially exposed at low tide. Heron Reef is spectacular; most reef anchorages are protected from south easterlies. Snorkel and spearfish, the different areas along the reef wall at Fitzroy Reef Lagoon. Fish are abundant, catch a Coral Trout or a Painted Sweetlip for lunch onboard.

Fitzroy Reef is the largest of the 22 reefs, popular with divers and snorkelers because the reef forms a ring around the large, deep lagoon that offers protection and anchorage points.

Underwater Photographers with a lot of breath and patience will enjoy capturing clownfish as they dart in and out of their anemones.

Lady Musgrave Island is one of the best places in the world to see and swim with turtles all year round in their natural habitat.

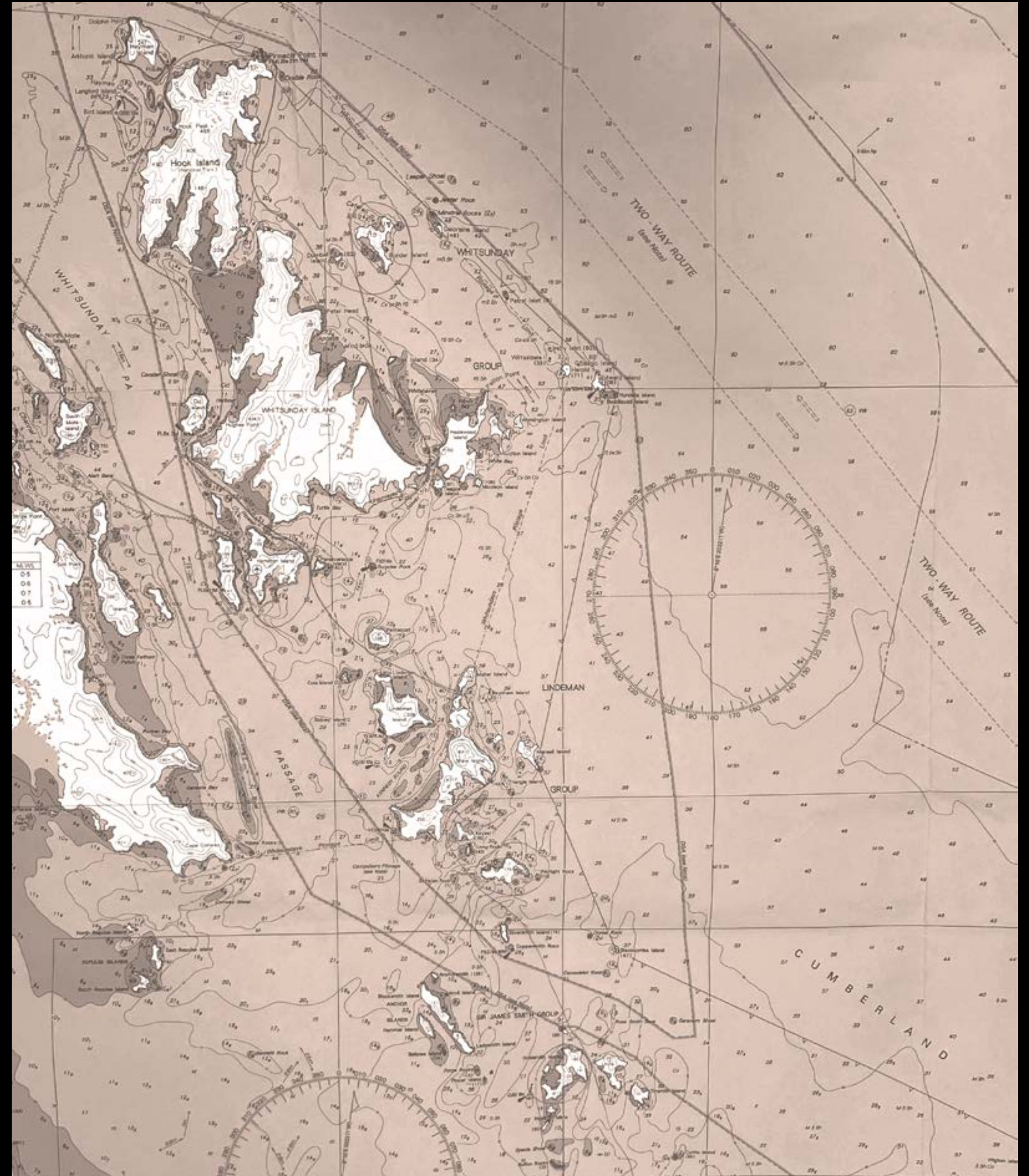




- 🌐 www.mackaymarina.com
- ☎ (07) 4955 6855
- ✉ reception@mackaymarina.com
- 📍 Mulherin Drive
Mackay Harbour
Queensland, Aus
4740

- ☎ **VHF**
Channel 16
is monitored by Mackay Marina
Call Sign 'Mackay Marina'
8.30am – 4.30pm

Reef Rambling





MACKAY MARINA
21.1116° S, 149.2243° E

Reef Rambling is a iconic charter itinerary with a twist. Enjoy the picture perfect places seen on postcards whilst mixing it up with secret spots less navigated.

Mackay Marina is an ideal location to start your journey north. This nautical gem, located in the heart of The Great Barrier Reef, has everything you need to provision and prepare for your upcoming journey.

The sun is shining & the coconut trees are swaying, ready for your guests to embark, it's a quick 18-minute drive to Mackay Airport.

The first anchorage on this voyage is Shaw Island a 37 nautical mile trip

SHAW ISLAND
20.4751° S, 149.0870° E

Shaw Island is a captain favourite, with stunning blue water, white sands, an abundance of wildlife, and protected anchorages. The perfect quiet location to enjoy the iconic reefs and islands.

Shaw Island is one of the largest islands in the archipelago and is located at the southern end of the more well-known hotspots. There's a chance you will get to experience the island by yourselves, being quieter the wildlife is more prolific. The island has many anchorages for all types of weather conditions. Pick a little shoal, go on a rising tide and by sunset, you've got water lapping at the picnic tables, the perfect spot for sundowners and nibbles.

On the northwest end of the island, Burning Point anchorage has a sandy bottom and is close to the beachside fringing reef, ideal when the winds are from the south or south-east. The snorkelling is fantastic, with stunning coral, the island is only accessible at mid to high tide. Bird watchers will enjoy the beach here, a significant bird site, the expressive Beach Stone Curlew use this beach for nesting from October to May.

Stroll the pretty beaches, throw on a snorkel and see 20 meters into the transparent sea, plate coral sits at the 5 to 10-meter mark. Schools of stingrays feed on the grassy seabed and turtles pop up for air at high tide.

Neck Bay on the north-west side of Shaw Island, offers very good snorkelling.

This anchorage is protected from north-east, east, south-east and south winds, however, it can be subject to a tidal stream.

Being calm and shallow, whales enjoy resting here during the season. Neck Bay offers a remote camping experience. Find your own track from the beach, stroll across the neck to the other side of the island and explore the rocky coastline.

Roberta Bay is a secluded anchorage at the south-east end of the island, hide here from the northerly winds. This quaint bay has a sandy beach, look out for wallabies as they jump across the rocks into the bushland.

Bill Bob Bay, located on the south-west side of Shaw Island, this anchorage is protected from the balmy Nor'easters.

Some say the waters of Shaw Island have their very own shade of blue, so, pack your colour wheel, and let us know. While we wait on your results, we think it's a mix of turquoise and aquamarine.





PENTECOST ISLAND

15.7173° S, 168.1792° E

Cruising past Pentecost Island, one expects to see a dinosaur or a tetradactyl launch from the towering cliffs, it's positively Jurassic.

Centuries of enraged volcanoes, the movement of tectonic plates & debris fused into solid rock form the craggy yet stunning Pentecost Island.

This impressive peak rising proudly out of the sea, uninhabited, Pentecost Island was named by Captain Cook in 1770, the first to be named in the Whitsunday Group.

Nuzzled between Hamilton and Lindeman Islands the island features sandy beaches, under the sea delights and dense bushland. Yachties that seek solitude, enjoy getting rugged or like exploring off-the-beaten-track, should anchor and traverse.

The fit and fearless will take the towering 100m Mount Pentecost to task, this National Park with almost no flat aspects, anywhere, isn't for the weary.

For those who didn't pack their joggers, it's cocktail and canapés on the top deck, blister-free. With this undeniably jaw-dropping island as the background, this is a good place to hover and swim whilst waiting for the others to conquer the peak.

PERSEVERANCE ISLAND

20.3545° S, 148.9916°

The dramatic typography continues as you meander through the passage between Hamilton Island and Perseverance Island

WHITSUNDAY ISLAND
20.2567° S, 148.9780° E

Whitsunday Islands' southside Turtle Bay is host to 5 different beaches and many tiny coves. Anchor here when the winds blow from the north-east or north-west.

Being the largest island of the archipelago makes it ideal for water sports. Kayak, SUP or snorkel above manta rays, unique corals and giant clams.

As the name suggests, Turtle Bay is home to turtles both on the beach and under the sea between October and December.

SOLWAY PASSAGE
HASLEWOOD ISLAND
20.2800° S, 149.0841° E

Navigate through this famous passage on the slack tide, taking in the serenity of Whitsunday Island on your port side.

Haslewood Island on the south side is all about Snorkelling, Snorkelling, Snorkelling!!!
Dive in and you will see all the bright & beautiful things.

Chalkies Beach is a pearler, with sands soft and white. Anchor here when the gales are east to south-east. Underwater viewing is particularly good at the northern end of the beach.

If you have half an hour to burn, Solway Circuit will take you on an inclining, rocky return walk from the south end of Whitehaven Beach, you'll venture inland weaving through lush, tropical greenery.



WHITEHAVEN BEACH

20.2824° S, 149.0389° E

Is this the beach that enticed you to The Whitsundays?

7 kilometres of pure white silica sands, complemented by an aquamarine sea and a bright blue backdrop.

Relax on the beach and take it all in or photograph the glamour from Hill Inlet. Watch the tides shift as they swirl the sands and sea, infusing aqua, blue and turquoise patterns at the north cove.

There's offshore, all tide anchoring off Whitehaven Beach or choose a mooring at Tongue Bay.

Head further north, past Apostle Bay, to Dumbbell Island and Border Island and float over fringing reefs.





HOOK ISLAND
2011.35° S, 148.9264° E

Sailors and divers are spoilt for choice on the northern tip of Hook Island, counter-clockwise the beautiful bays are –

Manta Ray Bay
Luncheon Bay
Maureens Cove

The best dive sites in The Whitsundays are found here –

The Pinnacles - the best hard corals, dense bommies, acropora corals, huge porites corals

The Woodpile – wall dive, overhanging ledges, shallow caves, large black coral trees

Butterfly Bay - coral outcrops, shallow walls

See kites, sea eagles, ospreys, turtles, reef fish, dolphins, manta rays!

BLUE PEARL BAY
200500° S, 148.8888° E

This iridescent beauty is located on the north-western side of Hayman Island.

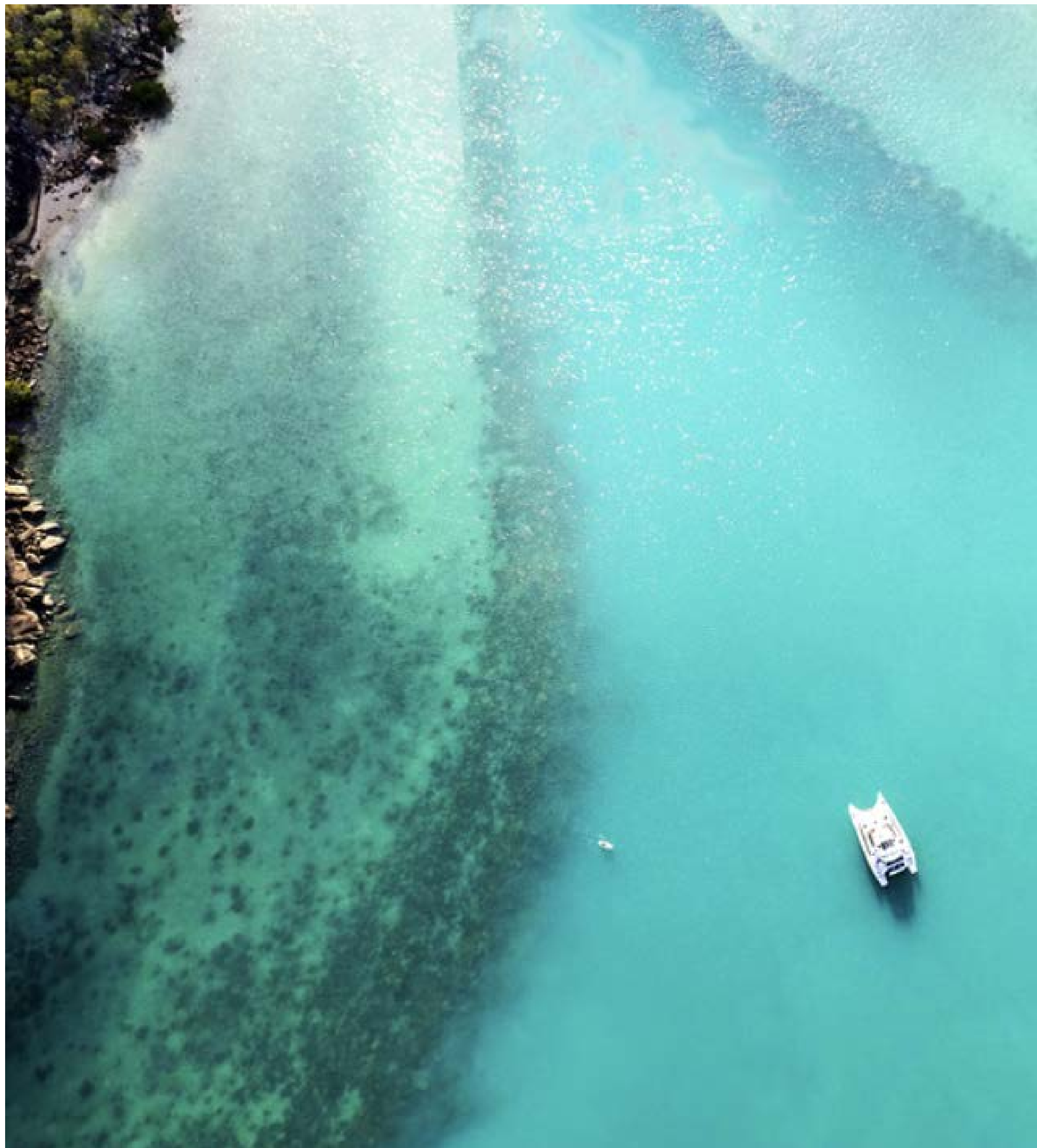
Scuba divers will love the sites close to Castle Rock, with vis up to 15 metres. You may find Alcyonacea and Whip corals whilst exploring the narrow canyons and caves.

Splash in from the back of the yacht with the batfish and turtles hovering or tender to the coral beaches to the south. The sea is glassy, scattered with bommies, and impeccable coral with marine life living on a silty sand floor.

Stag horn corals grow in the shallows and are teeming with fish and other exotic swimmers. Blue Pearl Bay is home to a 2-metre Maori Wrasse who seems to have 2 names, Elvis or George.

The Bay is pristine and protected by the Green Zone, sheltered from the winds by the hills.

Have a nana nap as the yachts sways or hike the trails and be rewarded with epic 360-degree views.



LANGFORD ISLAND

200795° S, 148.8730° E

This sparkly little jewel features a long spit perfect for beach picnics and sunbaking.

The reef is small, encircling the island, scattered with many tiny tropical fishies.

Don't miss Langford Island, it will be a highlight!

NARA INLET

201500° S, 148.9000° E

Nara Inlet, Fjord-like, narrow and deep, Hook Island Passage is a must do!

After the rain, find the magic fresh-water rock pool and frolick under the waterfall.

You may see wild goats' bouldering on the rocks or cockatoos flying through the passage.

The short steep walk will lead you to ancient indigenous cave paintings, views over the inlet and show off plants of the tropics.

This anchorage offers protection in all weather conditions.

OID HARBOUR

202633° S, 148.9150° E

Supping through the mangroves, relaxing on secluded beaches, hiking the trails and exploring Cid Island should be at the top of the bucket list!

Dugong Inlet is a small and shallow anchorage, shelter here in north-west to south-east winds. Hike to Sawmill Beach and get your heart rate up as you reach the summit of Whitsunday Peak.

The picturesque overnight anchorage Saw Mill Bay is wide and sheltered, tucked in between Cid and Whitsunday Island. The beach slope is fairly gradual, an ideal location in north-east to south-west winds.

Take a picnic on the quick and scenic 1km walk from Sawmill Beach to Dugong Beach and explore.

Enjoy a glass of wine and nibble from the charcuterie board whilst watching the glorious sunset at Katoomba Bank, on the northern edge of the island.

LONG ISLAND
20.3629° S, 148.8547° E

The Long Island Sound is an idyllic passage, cruise by lush bushland trailing into the ocean and listen to the sounds of nature.

Secluded and quiet, Long Island is a place to relax and unwind. It lies on the western side of the Whitsunday Islands and is surrounded by reefs.

Hike to a vista of beautiful views, spot endemic wildlife, and splash into the see-through aqua ocean. Explore this untamed island above and below.

Palm Bay has four moorings, the outside moorings are for catamarans and the inside are for monohull yachts. This is a peaceful overnight anchorage.




Mackay
Marina Village
by Port Binnli

GOLDSMITH ISLAND
20.6785° S, 149.1515° E

Prepare to gasp when you first see this stunner, Goldsmith Island.

Here, there's a choice of many exquisite bays, fringing reefs and beautiful beaches, swathed in over 600 hectares of national park, scattered with native trees.

There are plenty of outdoor spaces for self-sufficient campers and Goldsmith Island's north shore beaches are a highlight.

Try your luck crabbing in the mangrove system, there are plenty of fish just waiting to be caught by anglers.

Roylen Bay, nestled within Goldsmith Island is a cradled shelter, protected by the headlands from the south- easters. This is a lovely place to anchor or make use of the free public moorings.

Snorkelling sessions supersede others in the region, it's a hidden underwater gem. See if you can find the local blackspot tusk fish. When your fingers get wrinkly, it's time for Après Snorkel on the Aft Deck.





MACKAY MARINA
21.1116° S, 149.2243° E

Time to head back to base, Mackay Marina is 26 nautical miles from Goldsmith Island.

Tick off the job list, top up supplies and most importantly post your tropical photos to the Gram!

Complimentary WI-FI and a comfortable office space can be found upstairs from the office.

Make memories on the mainland - enjoy a beach sunrise with roos, freshwater scuba dive subtropical rainforest with a paddle of platypuses or hike and chase waterfalls in gorges.



- 🌐 www.mackaymarina.com
- ☎ (07) 4955 6855
- ✉ reception@mackaymarina.com
- 📍 Mulherin Drive
Mackay Harbour
Queensland, Aus
4740

- ☎ **VHF**
Channel 16
is monitored by Mackay Marina
Call Sign 'Mackay Marina'
8.30am – 4.30pm

PHONE