

Approaches to Port Darwin

2.60 Beagle Gulf (12°10'S., 130°19'E.), entered between Mitchell Point on the N and **Point Blaze** (12°56'S., 130°08'E.) to the S, forms the W approach to Clarence Strait and Port Darwin. It is generally deep, wide, and clear, but requires caution to avoid the shoals fronting its shores and head. Shepparton Shoal, described below, lies in the middle of the entrance to the gulf and vessels are recommended to keep clear of it, especially in heavy weather.

The coast from **Charles Point** (12°23'S., 130°37'E.), for a distance of 25 miles SW, is fronted by shoals and reefs which extend up to 20 miles offshore in places, and vessels approaching Beagle Gulf from W or SW should steer to round the outer dangers at a distance of at least 6 miles before turning in for the entrance of Port Darwin.

Newby Shoal (11°52'S., 129°11'E.), with a least depth of 12.8m, lies about 50 miles W of Cape Fourcroy and is apparently of coral formation. A bank, with a least depth of 15.8m, lies about 25 miles NE of Newby Shoal.

Shepparton Shoal (12°06'S., 129°53'E.), with a least depth of 11.3m, sand and coral, lies 20 miles SSW of Cape Fourcroy. A heavy swell may build up over this bank during the Northwest Monsoon.

2.61 Afghan Shoal (11°54'S., 130°08'E.), with a least depth of 1.2m, extends 7.5 miles ESE from a position 3.5 miles S of Mitchell Point (11°49'S., 130°03'E.). This shoal lies partially outside the arc of visibility of Cape Fourcroy Light, and the early part of the ebb tidal current sets down on it from S.

A shoal, with a least depth of 6.4m, lies about 19 miles E of Afghan Shoal.

The historic wreck of a Japanese submarine lies about 13 miles S of Afghan Shoal and a protected zone, with a radius of 500m, within which unauthorized activities are prohibited, has been established around the wreck.

Lorna Shoal (12°21'S., 130°19'E.), the northernmost of the dangers fronting the shore SW of Charles Point, consists of four patches with a least depth of 3.2m centered about 18 miles W of the point. No attempt should be made to pass S of this shoal as numerous dangers, both drying and submerged, lie to the SE.

2.62 Fenton Patches (12°12'S., 130°43'E.), with a least depth of 13.1m, consist of an area of irregular soundings centered about 12.5 miles NNE of Charles Point. Vessels approaching Port Darwin from Clarence Strait pass SE of Fenton Patches. A wreck, marked on its NW side by a buoy, lies close NW of Fenton Patches; obstructions lie about 1 mile SE and 1 mile S of this wreck and have a least depth of 9m.

Moresby Shoals, Lowry Shoal, and Skottowe Shoal, with least depths of 5.7m, 6.3m, and 8.4m, respectively, are a series of scattered patches centered about 14 miles WSW of Cape Gambier (11°56'S., 130°58'E.). Vessels are cautioned to keep clear of this area, as surveys N of these dangers are incomplete and navigation in their vicinity would be difficult.

Directions.—Vessels approaching Port Darwin from Torres Strait generally use Clarence Strait proceeding on the recommended tracks. From a charted position about 1 mile N of Marsh Shoal Lighted Buoy, a course of 223°30' leads to the general vicinity of Charles Point Lighted Buoy No. 5.

Vessels not wishing to use Clarence Strait proceed to a position 30 miles NW of Cape Van Diemen (11°10'S., 130°23'E.) and then steer 213°, passing midway between the charted 14.6m and 16.4m depths, to a position 5 miles WNW of Moss Shoal. From this position steer 169° to a position 10 miles 325° from Cape Fourcroy Light. From the latter position, a course of 180° is steered for a position 9 miles 218° from the same light, and then 119° for the vicinity of Charles Point Lighted Buoy No. 5.

When coming from W follow the track indicated on the chart, passing approximately 5 miles N of Lorna Shoal; then steer 101°30' for the vicinity of Charles Point Lighted Buoy No. 5.

Entrance to Port Darwin

2.63 Port Darwin is an estuary of considerable size and is approached between Lee Point (12°20'S., 130°54'E.) and Charles Point, about 17 miles WSW. The W side of Port Darwin, from Charles Point to Talc Head, is described; then the E side of Port Darwin, from Lee Point to Fort Point is described. Channel dangers are then described from N to S.

Charles Point (12°23'S., 130°37'E.) is low and faced by reddish cliffs on its E side; a rocky ledge, which dries, extends 0.5 mile NW from the point, and shoal water with depths of less than 1.8m, extends 1.5 miles to the NE.

A light is shown from a conspicuous red and white framework tower standing about 1 mile ESE of the point. Radio masts stand about 1.5 miles SSE and 8.5 miles SE of the light structure.

The coast between Charles Point and **West Point** (12°26'S., 130°46'E.), 9 miles ESE, is low and is fronted by a coastal bank, which dries and has rocky ledges on it. Several shoal patches exist between the coast and Charles Point Patches, 4 miles NE. A pier extends out to a depth of 3m, about 0.4 mile SSE of West Point. A dangerous wreck lies about 0.8 mile ESE of the head of the pier.

Lighted Buoy No. 5 (12°20'S., 130°42'E.), Lighted Buoy No. 6 (12°25'S., 130°47'E.), Lighted Buoy No. 7 (12°24'S., 130°45'E.), Lighted Buoy No. 8 (12°28'S., 130°50'E.), and Lighted Buoy No. 12 (12°29'S., 130°51'E.) are equipped with AIS.

2.64 Talc Head (12°29'S., 130°47'E.), 2.5 miles SSE of West Point, is a conspicuous narrow cliffy promontory, 19m high, that is covered with brush. It forms a useful mark in making for Port Darwin.

Lee Point (12°20'S., 130°54'E.), on the E side of the approach, is low, with rocky ledges extending nearly 1 mile NNW of it.

A conspicuous hospital, with a chimney 73m in elevation, stands about 1.5 miles SSW of Lee Point; it is a useful aid when approaching from W.

Angler Reef, with depths of less than 1.8m, lies 1.75 miles NW of Lee Point.

Night Cliff (12°23'S., 130°51'E.) is located 3.75 miles SW of Lee Point; the coast between is fronted by a drying bank of weed, sand, and mud and is fringed with casuarina trees. Old Man Rock, which dries 5.6m, lies 2.5 miles SW of Lee Point. A conspicuous water tower stands at an elevation of 39m, about 0.5 mile S of the NE end of the cliff; a second water tank stands about 0.25 mile ESE of the water tower.

An aeronautical lighted beacon is occasionally shown from a conspicuous water tank about 3 miles SSE of Night Cliff. An aeronautical radiobeacon transmits from a position about 5.5 miles E of the lighted beacon.

2.65 East Point (12°25'S., 130°49'E.), about 3.5 miles NE of West Point, is formed of cliff and attains a height of 22m. Drying reef fronts the point for a distance of 0.35 mile.

Emery Point (12°27'S., 130°49'E.), about 3 miles S of East Point, is formed of low cliffs about 6m high. A sand bank, which dries up to 3.9m on its S part, extends 2 miles N of the point.

Emery Point Light is shown from a white, metal framework tower on the extremity of the point. A red sector of the light covers the above sand bank. When entering, vessels steer for this light between the bearings of 135° and 139°. It has been reported (2000) that the light structure has been difficult to locate during the day.

Elliott Point (12°28'S., 130°49'E.), about 0.3 mile SSE of Emery Point, is a cliffy promontory 10m high.

The Naval Base is situated about 0.35 mile SE of Elliott Point; the approach between the breakwaters is indicated by a range which is shown on the chart.

Fort Point (12°28'S., 130°51'E.), about 2 miles SE of Emery Point, rises to Fort Hill, which is 23m high. A conspicuous silo, 43m in elevation, stands on a point near the quarantine station, about 3.25 miles ESE of Fort Point.

Wickham Point (12°30.5'S., 130°51.5'E.) rises to Peak Hill, which is 31m high. Approximately 1 mile S of the point is Wickham Point LNG Terminal, which consists of a 1,295m-long jetty with a T-head at its extremity. There is a depth alongside of 12m. There is also an isolated danger lighted buoy 740m W of the berth.

Regulations.—A restricted area has been established around Wickham Point LNG Terminal. Vessels are prohibited from approaching within 100m of the jetty at all times. This distance is extended to 500m beginning 45 minutes before the berthing of an LNG tanker and until the LNG tanker has departed. The N and S boundaries of the 500m restricted area are marked by lighted buoys.

2.66 Charles Point Patches (12°21'S., 130°40'E.), with a least depth of 2.3m and marked by tide rips, lie from 3 to 5 miles ENE of Charles Point. Charles Point Lighted Buoy No. 5 marks the NE extremity of these patches. A detached 8.2m patch is marked on its NE side by Charles Point Lighted Buoy No. 5. There is an area of sandwaves, with depths of not less than 10m, about 1 mile ESE of this patch; ESE of this same patch, and joining up with Middle Ground, there are several other detached patches with depths of less than 10m.

Middle Ground (12°22'S., 130°46'E.), with depths of 2.3 to 10.0m, extends about 6.5 miles NW of East Point and is covered by the red sector of Emery Point Light.

Caution.—Unexploded ordnance lies in a depth of 13m, in an area with a radius of 0.5 mile, centered NE of Middle Ground, about 3.75 miles NW of East Point.

2.67 Channel Rock (12°25'S., 130°47'E.), with a least depth of 6.3m, lies 2 miles WSW of East Point and is usually indicated by tide rips and overfalls. A lighted buoy is moored close SW of this danger.

Abbot Patches (12°28'S., 130°48'E.), with depths of 7.3 to 10.1m, extend about 1.25 miles SSE from a position 1.25 miles W of Elliot Point; they are marked by a lighted buoy.

Two dangerous wrecks lie close W of the S extremity of Abbot Patches; an experimental fish device lies in the same position.

Bennett Shoal (12°28'S., 130°50'E.), with a depth of 4.6m, lies 1 mile SE of Emery Point and is marked by a lighted buoy.

A dangerous wreck lies about 0.65 mile S of Fort Point. A submarine pipeline extends about 0.5 mile S from a position on the shore about 0.9 miles ESE of Emery Point.

Darwin (12°28'S., 130°51'E.)

World Port Index No. 54670

2.68 Darwin is the principal port on the N coast of Australia. The port lies on the S shore of the Beagle Gulf in the Timor Sea. A line between Charles Point and Lee Point, 17 miles ENE, marks the extent of the port limit. The city is the capital of the Northern Territory and is of considerable importance. It stands on a table about 20m high and is favored by cool breezes throughout the year.

Numerous vessels, including ore carriers of considerable size, enter Port Darwin; the large tides in this area enable deep drafts to be accommodated. Live cattle are a major export in Darwin in addition to the offshore oil and gas industry in Northern Australia. The completed Darwin to Adelaide rail link and the development of the East Arm will increase the container-handling ability of the port to over 250,000 each year.

Darwin Port Authority Home Page

<http://www.darwinport.nt.gov.au>

Winds—Weather.—Darwin is under the influence of the monsoon seasons year around. The Northwest Monsoon blows from November to April with occasional winds from E, especially at night. From April to September the Southeast

Monsoon prevails and is strongest in July. The transition period occurs in October and winds are generally light.

The cyclone season extends from November to April. Ships may be placed on short notice for sea and required to maintain themselves in seaworthy condition at all times.

Visibility during the latter part of the Southeast Monsoon is often reduced by haze, and objects are frequently obscured at a distance of 3 miles. During the Northwest Monsoon, the visibility is usually good, except in the vicinity of thunderstorms and squalls.



Darwin—Iron Ore Wharf (left), Fort Hill Wharf (center), and Stokes Hill Wharf (right) from SW



Darwin

The rainy season commences during the latter part of October and lasts about 5 months, with the greatest amount falling in January and February. Lightning, torrential rain, and squalls are common at this time. From May to September, during the Southeast Monsoon, rain is very rare.

Temperatures range from a high of 37°C in summer to a low of 15°C in winter.

Tides—Currents.—See the table titled **Tidal Ranges for Darwin**. Near the entrance to the harbor, the strength of the tidal currents diminishes considerably, and the direction within the harbor usually corresponds with the direction of the channel.

During the flood current, considerable eddies may be experienced close to the wharves. These eddies often produce a current setting directly towards the jetties, or sometimes



Darwin—East Arm Port from W

running along the jetties in a direction opposite to the current at a position about 200m off them. During the ebb current, the currents close to the jetties run in the same general direction as those offshore, but care must be taken to guard against the fact that the currents do not always run directly along the jetties, but may set towards or away from them. The currents area are considerably affected by heavy rains and by strong NW or SE winds.

Owing to the strong tidal currents, discoloration is present at all times, and during springs, a turgid, muddy color is seen in the harbor, the whole of which is disturbed by eddies.

Depths—Limitations.—Darwin is approached between Charles Point Patches and Middle Ground through Middle Pass (12°21'S., 130°43'E.) and is entered between Charles Point and

Lee Point. Middle Pass is a deep water route through the isolated patches of less than 10m which lie across the fairway between Charles Point Patches and the NW end of Middle Ground; it is marked by lighted buoys and is the main approach channel for deep-draft vessels. Middle Pass has a least depth of 13m.

| Tidal Ranges for Darwin | |
|---|--------|
| HAT | 8.1 m |
| MHWS | 7.0 m |
| MHWN | 5.1 m |
| MSL | 4.17 m |
| MLWN | 3.3 m |
| MLWS | 1.4 m |
| LAT | 0.0 m |
| Notes: | |
| 1. Predicted heights are in meters above charted datum. | |
| 2. HAT—Highest astronomical tide. | |
| 3. LAT—Lowest astronomical tide. | |

The average depth in the main channel from Middle Pass to the quarantine anchorage, situated SW of the wharves, is 20m.

Vessels up to 245m in length, with drafts up to 12m, are generally the maximum size accepted. Greater drafts may be accepted by prior consultation, depending upon tidal predictions; vessels up to 246m in length and 12.8m draft have been accommodated. No restrictions on beam are in force. There are no air draft restrictions to access the port.

The Iron Ore Wharf, also called the No. 1 Berth, is a dolphin-type berth with a face length of 142m; mooring dolphins are situated 69m E and W of the wharf. The wharf was reported (2010) being demolished and unavailable for use.

New Fort Hill Wharf stands close NE of Bulk Ore Wharf. Berth 2W and Berth 2E are each 150m long, with an alongside depth of 12m. Vessels with a maximum draft of 11.7m can be accommodated.

A ro-ro terminal is situated at the W end of New Fort Hill Wharf. A pontoon, 77m in length, can be extended or retracted, thus enabling ro-ro vessels of any size or type (side-loading, end-loading, quarter-loading, port or starboard side-to) to use the Port of Darwin. When the pontoon is retracted, its outer end forms an extension of the New Fort Hill Wharf, and can then be used for vessels such as car carriers with side doors.

Stokes Hill Wharf, the main general cargo berth, is a concrete-decked steel-piled wharf with a trestle approach. Berth 3E and Berth 3W, on the outer side of the wharf, are each 146m long, with an alongside depth of 9m. Bulk, container, and general cargo are handled.

Berth 4E and Berth 4W are situated on the inner side of Stokes Hill Wharf. Each berth is 80m long, with an alongside depth of 4.5m. Fishing vessels and pleasure craft, with a maximum length of 70m and a maximum draft of 4.5m, can be accommodated.

Fort Hill Wharf No. 4 (Old Fort Hill Wharf) is presently restricted to small or special vessels by arrangement with the harbormaster.

A shipyard for small craft is situated on the W side of Frances Bay, with depths of up to 5.5m in the vicinity. There are moorings for small craft at Francis Bay Marina. The minimum depth is 3.5m.

East Arm Port is situated about 2 miles ESE of Fort Point (12°28.3'S., 130°50.7'E). The port consists of a jetty with a berthing face aligned 127°/307° that is 755m long with depths alongside that range from 11.3m to 13.3m; it constitutes the longest and deepest berth in the port. Vessels up to 100,000 gt can be accommodated here. East Arm Port includes the following:

1. Bulk liquid berth—which is connected via pipeline to a fuel oil facility and a bio-diesel refinery as well as pipeline piping for chemicals,

2. Container berth which serves as a common user berth to discharge or load break bulk cargo including livestock.

A Marine Supply Base (12°29.6'S., 130°53.4'E) has been established at the E end of East Arm, with a depth alongside of 8.7m. It is approached through a channel which passes SE and E of South Shell Island (12°29.8'S., 130°53.2'E) and is marked by lateral beacons. This channel has a maintained depth of 7.7m.

Aspect.—A radio mast and a water tower, both conspicuous, stand about 1.25 miles E and about 1 mile ESE, respectively, of the light on Emery Point. A conspicuous white building of unusual shape stands about 1 mile ENE of the light structure, but is obscured by East Point when bearing greater than 160°. Due to the close proximity of other prominent towers, caution is advised when identifying individual marks.

Peak Hill, 30m high and covered with bush, rises about 5 miles SE of Emery Point and is occasionally used as a leading mark for entering the port.

Kings Table, 47m high, is a circular flat-topped hillock about 7 miles SSW of Emery Point. It is the highest land in the Darwin area and can be seen from the approach in clear weather.

Stokes Hill is located about 0.5 mile NE of Fort Point. Frances Bay, consisting mostly of drying flats except for an area on the W side, lies E of Stokes Hill.

Pilotage.—Pilotage is compulsory for all craft exceeding a length of 35m unless a current Pilotage Exemption Certificate is held by the master.

Notice of ETA and request for a pilot must be made to the harbormaster not less than 24 hours before ETA at Channel Rock Buoy and confirmed 2 hours before arrival at Pilot boarding position. The harbormaster continuously monitors VHF channels 16 and 67 and the ETA may be confirmed or adjusted on these frequencies. Pilot boats are painted with a white and yellow superstructure and a blue hull with the word "PILOT" on each side.

The usual pilot boarding point (12°24.5'S 130°46.0'E) is 1 mile NW of Channel Rock Buoy No. 6. With prior arrangement, vessels with a draft of over 10.7m will board the pilot (12°19.6'S 130°42.1'E) about 1 mile N of Charles Point Patches Lighted Buoy No. 5. In case of bad weather, the pilot boat will lead ahead to sheltered waters, using the VHF. Pilot boarding arrangements must be in accordance with IMO rules.

Vessels awaiting a pilot may anchor between 1 and 2 miles NW of Channel Rock Buoy, in 25m, sand, good holding ground.

| Darwin—Port Contact Information | |
|---------------------------------|---------------------------------|
| Port Control | |
| Telephone | 61-8-89220710 |
| Telephone | 61-8-89995390 |
| Facsimile | 61-8-89810687 |
| E-mail | harbour.control@nt.gov.au |
| Port Authority | |
| Telephone | 61-8-89220660 |
| Facsimile | 61-8-89220666 |
| E-mail | darwinport.dpa@nt.gov.au |
| Web site | http://www.darwinport.nt.gov.au |

Regulations.—Darwin is within the southern zone of tropical revolving storms. The season extends from November to April each year and the Port may be more or less affected at any time during that period. All vessels entering Darwin during the “cyclone season” are supplied with copies of the Port Procedures, which set out in full the various stages of alert and preparation to be observed in the case of an approaching cyclone. Vessels may be placed on short notice for sea in such circumstances and required to maintain themselves in seaworthy condition at all times.

When underway within Darwin harbor limits all vessels shall ensure the following procedures are complied with:

1. Automatic steering devices, if fitted, are not used unless a competent helmsman is standing by in the immediate vicinity of the helm station or wheel and ready to assume hand-steering. Otherwise, vessels are to be in hand-steering mode only.

2. Any duplicate, secondary, or backup steering gear and steering gear power systems are to be fully operational and ready for immediate use while vessels are navigating within the port harbor limits. Emergency steering gear systems should have been recently tested.

3. The vessel's main propulsion plant needs to be immediately available for reducing speed, stopping or going astern at all times and without delay.

4. The vessel's anchors are available for immediate use in an emergency and capable of being used without power.

Vessels must not immobilize main engines without prior permission from the harbormaster. Tankers will not be allowed to shut down main engines while working cargo. Petroleum tankers are not moved during hours of darkness except in emergency conditions.

Vessels with a draft greater than 12m may need to await the tide before crossing Charles Point Patches.

A traffic separation scheme, the limits of which can best be seen on the chart, runs in an E-W direction off Emery Point to Fort Point.

Vessels are to report at the following points:

1. Inbound—When entering the Deep Water (DW) channel in position 12°18.2'S., 130°41.1'E and when passing the inner deep-water channel in position 12°25.3'S., 130°46.6'E.

2. Outbound—When passing the inner deep-water channel in position 12°25.2'S, 130°10.6'E.

Contact Information.—The following table lists the official radio channels for communication within the Port of Darwin:

| VHF Channel | Function |
|-------------|--|
| 10 | Main Port Working Frequency |
| 16 | Distress/Calling—Continuous Watch Required |
| 72 | Ship to Ship |
| 14, 69 | Navy port working frequency |
| 12, 13 | Pilot working channels (tugs) |

Anchorage.—Anchorage is available anywhere in the harbor where the depths are convenient and anchorage is not prohibited. The holding ground is good, but vessels remaining for more than a short period during the Northwest Monsoon should moor because of the stronger currents during the wet season. Anchorage C3 (12°30'S., 130°49'E.) has a wreck with a depth of 11.7m, foul ground to the E, and a gas pipeline running through the middle of the anchorage area.

Vessels under quarantine must anchor in the quarantine anchorage SW of Fort Hill until cleared. A lighted buoy, painted yellow, marks a foul area in this anchorage.

| Port Darwin Anchorages | | | |
|------------------------|--------|-------|----------------------|
| Berth | Length | Depth | Lat. and Long. |
| A1 | 152m | 17.0m | 12°19.0'S 130°42.4'E |
| A2 | 190m | 17.0m | 12°19.5'S 130°42.8'E |
| B1 | 198m | 14.8m | 12°22.5'S 130°45.1'E |
| B2 | 107m | 12.7m | 12°23.0'S 130°45.5'E |
| B4 | 198m | 12.0m | 12°24.0'S 130°46.3'E |
| B5 | 183m | 15.0m | 12°27.6'S 130°47.1'E |
| C1 | 145m | 19.0m | 12°28.9'S 130°49.4'E |
| C2 | 180m | 19.0m | 12°29.5'S 130°49.7'E |
| C4 | 180m | 12.0m | 12°28.8'S 130°49.8'E |
| C5 | 158m | 9.6m | 12°28.9'S 130°50.2'E |
| C6 | 158m | 9.9m | 12°29.0'S 130°50.5'E |
| C7 | 46m | 8.0m | 12°29.0'S 130°50.9'E |

Prohibited anchorage.—Anchorage is prohibited, due to power and telephone cables in the charted area, within the limits of East Point and the coast just W of West Point to the N, and between Elliot Point and Oak Point to the S. There is a foul area between Emery Point to the E and Oak Point to the W. Vessels are cautioned not to anchor, trawl, or sweep within the

area indicated due to the remains of boom defense netting and cables.

Vessels must not anchor in the vicinity of the pipeline E of Bennet Shoal. Anchorage is also prohibited in an area SE of Fort Point, as best seen on the chart.

Anchoring is also prohibited, as shown on the charts, between Elliott Point and Darwin Naval Base due to the existence of submarine cable extending SW from the coast and in an area SE of Fort Point.

Vessels should keep clear of the Naval Area encompassing all the waters of West Arm and Middle Arm.

Directions.—There is a deep-water route for LNG vessels which passes between Lighted Buoy LNG 1 and Lighted Buoy LNG 2. This route is for single vessel operations and vessels using must not overtake or pass.

Caution.—It has been reported (2001) that when using the deep water approach to Darwin, the visual appearance of Lighted Buoy A and Lighted Buoy B, situated E of Charles Point Patches, gives the illusion that these buoys are incorrectly charted.

A fish haven has been established on the seaward side of the causeway leading to Stokes Hill Wharf. A lighted buoy is situated close SE.

Gas pipelines, which may be best seen on the chart, run from Darwin to Sahul Banks in the Timor Sea. Vessels should exercise appropriate caution in the vicinity of the pipelines.

A protected area is established over a historic wreck, marked by a special light buoy (12°23.4'S., 130°46.3'E.), with a radius of 150m. Fishing and anchoring are prohibited within this area.

Caution.—Mean high water spring tides rise 6.9m. The mean high water neap rise is 5m; low water neaps usually maintain a height of about 2m above datum, but the tides are mixed, which varies the daily heights. It is highly recommended that ships enter port during the high tide/slack water period due to the rapid shift in velocity of current. Significant currents are present.

Tidal currents in the approach channel, about 6 miles NW of East Point, run in the direction of the fairway at a rate of 1 to 2 knots, although a 4 knot ebb current has been reported (2000). The flood commences about 5 hours before HW; the ebb commences about 1 hour after HW. The currents become rotary at both HW and LW, with little slack.

Off East Point, the currents run mainly NNW and SSE, and attain rates of 3 to 4 knots at springs.

Currents in the vicinity of the quarantine anchorage run mostly NW and SE at rates up to 2 knots.