Royal Victoria Yacht Club
Home of the Swiftsure International Yacht Race

Meteorology Monitoring Protocol 2022

Environment Canada (EC) and National Oceanographic and Atmospheric Administration (NOAA) use the following terms in their marine forecasts:

Wind (Knots)	Term	Comment
20 - 33	Strong Wind Warning (EC)	Warning thresholds and marine forecasts refer to the 'sustained wind' (10 minute average). Mariners can expect gusts (less than 30 seconds) up to 40% higher than the forecast wind speed. Instantaneous winds (~1-second wind) reported by on-board anemometers will be higher than gusts reported by Environment Canada instruments
	Small Craft Advisory (NOAA)	
34 -47	Gale Warning	
48 - 63	**Storm Force Wind Warning**	
64+	**Hurricane Force Wind Warning**	

The following protocols will be followed by the Race Committee when preparing to start the race and throughout the race until the last boat has finished.

The Principal Race Officer (PRO) will consult with the JRCC Victoria (JRCC) before starting the race if the wind is strong (>20Kts) or a strong wind warning, gale warning, storm force wind warning, or hurricane force wind warning are forecast for any part of the race courses to determine the availability of SAR resources.

Hourly the Radio Room will extract wind and sea data from the Swiftsure weather page in a format substantially like the one in Appendix 2 starting at 0900 PDT on race day. These reports will be provided to the Duty Race Officer (DRO) in a timely manner.

NORMAL WEATHER PROTOCOL: When a Strong Wind

Warning is observed or forecast for any part of the race area until all boats have finished or found safe haven:

Radio Room Supervisor	Duty Race Officer	Principal Race Officer
1. Monitor weather reporting stations hourly (refer to Appendix 2 for a list) to determine whether sustained winds exceed 25 Knots. Maintain a log of reported winds/seas. 2. If observed or predicted winds are >25 Knots inform the Duty Race Officer **and** request hourly wind reports from rounding mark vessels	1. If informed that observed or predicted winds exceed 25 Knots consult with EC Weather Professional (1-888-292-2222) to determine if gales are forecast for the race area 2. If gales are forecast advise the Radio Room Supervisor to proceed to the next protocol level: CAUTIONARY 3. Advise the PRO that gales exist in the race area or are forecast, and monitoring has been increased 4. Advise the mark boats at Swiftsure Bank, Neah Bay, and Clallam Bay of this situation	**1.** Inform the Swiftsure Event Chair 2. Consult with JRCC Victoria about SAR readiness

CAUTIONARY WEATHER PROTOCOL: When a Gale Wind and/or high seas (more than 6 feet in height and period of less than 10 seconds) are observed or forecast for any part of the race area:

Radio Room Supervisor	Duty Race Officer	Principal Race Officer
1. Monitor weather reporting stations (refer to Appendix 2 for a list) to determine whether observed sustained winds are gale force (34 to 47 knots) **and** EC wind and wind/wave forecasts. Maintain a log of reported and forecast winds/seas 2. Inform the Duty Race Officer if: a) Winds are or are forecast to be gale force **OR** b) Seas are or are forecast to be higher than **10** feet or less than **5** seconds apart 3. Request hourly wind & sea reports from rounding mark vessels 4. Request wind & sea reports from racers when making radio contact 5. Contact Marine Communications and Traffic Services (MCTS) Victoria to provide a general broadcast in the race area on VHF 16: "Gales are forecast in race area. Racers are advised to monitor weather broadcasts." Include this information on radio contacts with boats on Ch 26. Request that MCTS add this info on their VHF 9 broadcasts. If requested ask radio operators to contact boats in the affected race area via mobile or satellite	1. If informed that winds are or are forecast to be gale force, consult with EC Weather Professional (1-888-292-2222) to determine if conditions are expected to deteriorate any further in the race area 2. Advise the PRO of the forecast, actual conditions, and EC advice 3. Obtain the PRO's direction and inform the Radio Room Supervisor to: a) Request VTS to make advisory broadcasts on VHF 16 and to append this wording on their half hourly traffic broadcasts **OR** b) If a race is to be abandoned implement Race Abandonment Procedure (Appendix 1) 4. Update the mark boats at Swiftsure Bank, Neah Bay, and Clallam Bay about the situation 5. If a STORM or extreme seas are possible advise the Radio Room Supervisor to proceed to the next protocol level: **DANGEROUS**	1. Once informed by the Duty Race Officer of the wind/sea conditions and the wind forecast – decide on one of the following actions (after consulting with JRCC): a) Continue the race if the gale is likely to be localized and not expected to get worse **OR** b) Provide an advisory to racers that marginal conditions (sea and/or wind) exist or are expected, provide as much specific information as possible, and indicate boats should decide whether or not to continue racing or to seek safe haven **OR** c) Abandon the race if STORM conditions or dangerous seas threaten to adversely affect racers. This could be applied selectively to specific race courses or races depending on the location of the fleet 2. Direct the Duty Race Officer to take the required action based on your decision 3. Advise the JRCC of your decision

phone, and if necessary using the DSC function of VHF. 6. Take additional action as directed by the Duty Race Officer		4. Inform the Swiftsure Event Chair who will inform the RVYC Commodore. Also inform the Swiftsure Media and Promotions head

DANGEROUS WEATHER PROTOCOL: When the reported or forecast wind is storm force or seas are or will be extreme (more than 12 feet in height or their period is less than their height) in the race area (any area that racers are likely to be in):

Radio Room Supervisor	Duty Race Officer	Principal Race Officer
1. Immediately inform the Duty Race Officer 2. Continuously Monitor weather reporting stations (Appendix 2) and EC observations and forecasts for the race area. Maintain a log of reported winds/seas and update the Duty Race Officer as conditions change 3. Continue requesting wind & sea reports from all vessels and maintain log of reports 4. Contact MCTS Victoria to have a broadcast made on VHF 16: " A Storm is forecast in the race area. <If required: <Name of Race> has been abandoned.> <Add other wording as directed by Duty Race Officer> ". Include this information on all VHF 26 radio contacts with boats. Inform boats still racing in the affected area via mobile or satellite phone, and if necessary using the DSC function of VHF.	1. Consult with EC Weather Professional (1-888-292-2222) to determine if any race can be completed before the forecasted storm will affect the race area 2. Consult with the PRO to determine the appropriate course of action. If you are unable to contact the PRO take appropriate action on his/her behalf. 3. Obtain the PRO's decision and inform the Radio Room Supervisor to: a) Request VTS to make advisory broadcasts on VHF 16 and to append this wording on their half hourly traffic broadcasts **OR** b) If a race is to be abandoned then implement Race Abandonment (Appendix 1)	1. Once informed by the Duty Race Officer of the wind/sea conditions and the forecast – decide on one of the following courses based on racers known positions (after consultation with JRCC): a) Continue racing if the storm will not overtake the racers, AND Provide an advisory to racers that marginal or dangerous conditions (sea and/or wind) exist or are expected with as much specific information as possible **OR** b) ABANDON the race if STORM or dangerous seas threaten to adversely affect racers. This could be applied selectively to specific racecourses or races. 2. Direct the Duty Race Officer to take the required action based on your decision

5. Take additional action as directed by the Duty Race Officer 6. Follow Race Abandonment Procedure (Appendix 1) if a race has been abandoned	4. Update the mark boats at Swiftsure Bank, Neah Bay, and Clallam Bay	3. Advise the JRCC of your decision 4. Inform the Swiftsure Event Chair who will inform the RVYC Commodore. Advise the Swiftsure Media and Promotions head.

Appendix 1

Race Abandonment

Implementation Process

Radio Room Supervisor	Duty Race Officer	Principal Race Officer
1. Contact MCTS Victoria to have a general broadcast made on VHF 16: "<insert which race(s)> Race has been ABANDONDED due to <insert the reason why – be specific>. All affected yachts are to report their intentions for seeking a safe haven as soon as possible on VHF 26." 2. Have radio operations contact boats which have not been heard from using the boats' mobile or satellite phone, and if necessary by contacting them using DSC on VHF 3. Begin logging racers' reported intentions & ETAs and request that they report when they have reached a safe haven 4. Continue to monitor weather conditions 5. Ensure JRCC Victoria is aware of any yachts that have lost radio contact and cannot be contacted by their mobile phone, are in trouble, or are overdue. Their SPOT transponder or AIS (the Registration System indicates whether or not boats have AIS) may provide information about their last reported position. 6. Advise the Duty Race Officer when all affected yachts have been accounted for and have arrived at a safe haven	1. Ensure that the Radio Room Supervisor has the correct wording for the broadcast 2. Advise PRO of wording of broadcast being issued (if not already aware) 3. Request VTS to make advisory broadcasts on VHF 16 of the race status and to append this wording on their half hourly traffic broadcasts 4. Contact rounding marks boats to determine if they can assist in ensuring that the fleet makes safe haven 5. Advise, via the JRCC Victoria, the USCG (206-217-6152) of the situation, and that a *Force Majeure* situation exists and yachts may be seeking safe havens on the Olympic Peninsula 6. Advise the mark boats at Swiftsure Bank, Neah Bay, and Clallam Bay that they may wish to seek safe haven	1. Advise the JRCC Victoria of the race status and confer on the SAR resource status. Seek information about their readiness and/or deployment. 2. Confer with EC Weather Professional (1-888-292-2222) as needed 3. Determine which races are to be abandoned 4. Inform the Swiftsure Event Chair (who will advise RVYC Commodore) of the situation 5. Have Swiftsure Event Chair brief Media and Promotions head so a news release can be issued, a notice can be put on the home page of the Swiftsure website and on the Race Tracker system.

Swiftsure Abandonment Resources

NOTE: Race Abandonment Headquarters ("HQ)" will be at CRD Radio Room and resources will work from that site

Principal Race Officer	Decide whether to abandon (in consultation with Swiftsure Event Chair), leads the abandonment process
On Duty Race Officer	Go to HQ and assist PRO as required (e.g., key contact with JRCC Victoria)
Off Duty Race Officers	Contact On Duty Race Officer to determine whether needed at HQ earlier than scheduled shift time
Radio Room Supervisor	Determine whether additional radio operators will be needed, and mobilize from off duty radio volunteers list
Finish Line Lead	In consultation with PRO, determine the number from the finish line team who should remain at the finish line trailer to spot returning boats and report such to the radio room (and Inspection Dock/docking volunteers); any not needed will be deployed to HQ to assist as required
Inspection Dock Lead	In consultation with PRO, determine the number of inspectors who should remain at the Inspection Dock (e.g.; communicate with docking staff as boats arrive in the inner harbour), and what duties they will be given
Dockmaster Lead	Ensure that docking volunteers are advised when boats are returning so they can be ready to dock them
Swiftsure Event Chair	Go to HQ to be the decision maker on behalf of the Organizing Authority, advise PRO as required, be focus for external communications with media and concerned emergency contacts of racers, be focus for communications with RVYC Commodore and Swiftsure Media and Promotions head

Appendix 2

Wind & Sea Monitoring

Wind Velocity (Direction/Speed) Knots – e.g. SE 35G40

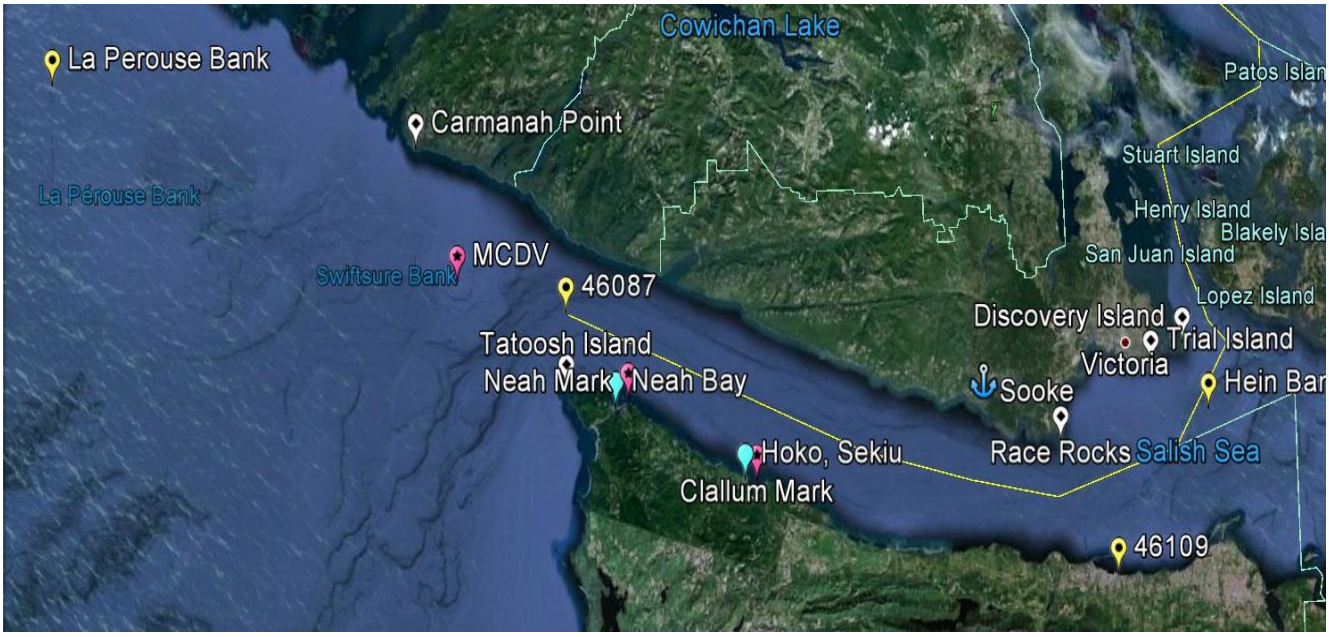
Station	Time (PDT)											
La Perouse Bk												
Carmanah Pt												
Swiftsure Mark												
46087 Buoy												
Tatoosh Is												
Neah Bay												
Neah Mark												
Hoko, Sekiu												
Clallam Mark												
Sheringham Pt												
Race Rocks												
46109 Buoy												
Trial Island												
Hein Bank												

Sea Conditions (Wave Height (feet)/Period (seconds)) – e.g. 6/8

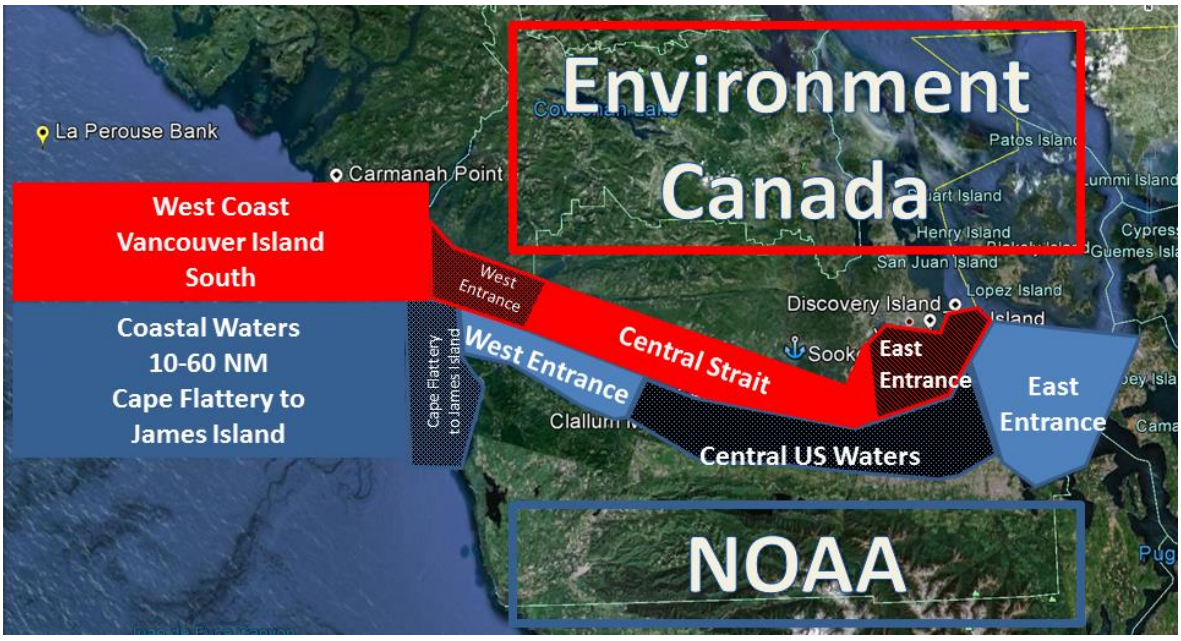
Station	Time (PDT)											
La Perouse Bk												
MCDV Mark												
46087 Buoy												
46109 Buoy												
Hein Bank												

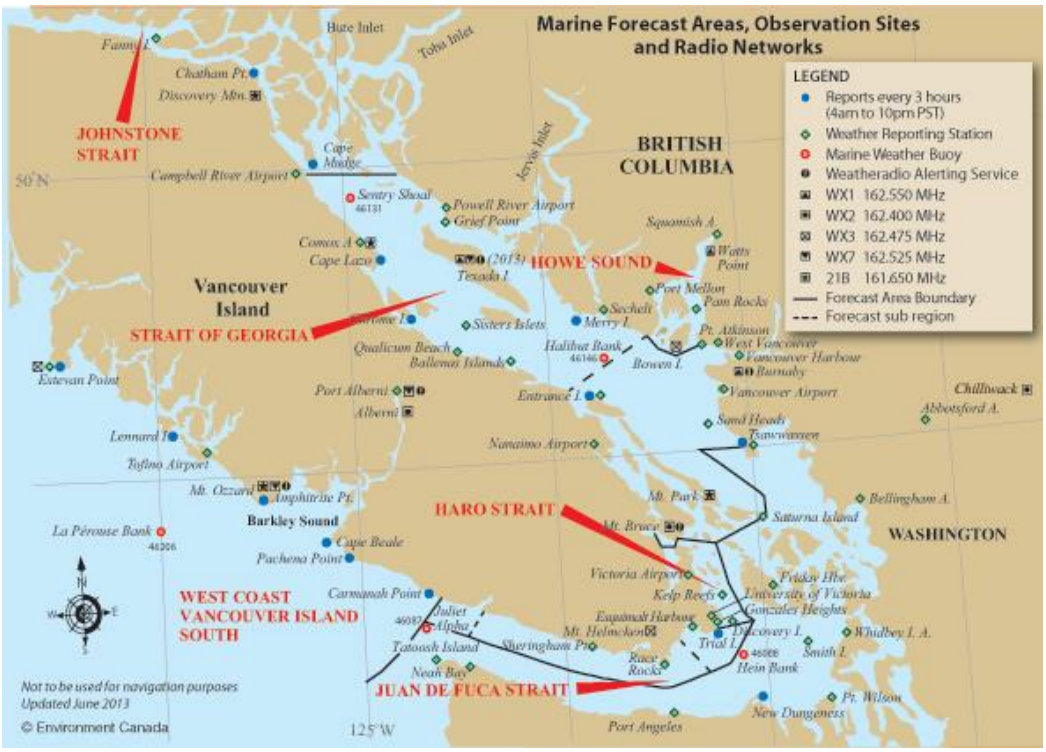
Appendix 3:

Weather Reporting Stations



Environment Canada





Forecast Issue Times

All issue times are Pacific Standard or Daylight Saving Time (PST/PDT). Updated forecasts are issued as required.

- **Regular Forecast and Technical Marine Synopsis:** 4 am; 10:30 am; 4 pm; 9:30 pm
- **Extended Forecast:** 4 am; 4 pm
- **Wave Height Forecast:** 4 am; 4 pm

Marine Forecast Content

Wind Speed and Direction: The wind speed is the average wind that is expected over the open water, given in units of knots (1 kt = 1.85 km/h). Wind direction refers to the direction from which the wind is blowing (based on true north and not on magnetic bearings). It should also be noted that with the rugged Pacific coastline, considerable local variations from the forecast winds are possible.

Weather and Visibility: A brief description of the weather is included in the forecast when visibility is expected to be reduced to near or below one nautical mile (1.85 km).

Freezing Spray: Is mentioned in the forecast if conditions are likely to result in ice buildup on exposed vessel surfaces.

Air Temperature: Is included in the forecast only if temperatures are expected to be at or below 0° Celsius.

Marine Weather Warnings

- **Strong Wind Warning:** 20-33 knots (issued only for southern inner coastal waters between March 20th and November 11th)
- **Gale Warning:** 34-47 knots
- **Storm Warning:** 48-63 knots

- **Hurricane Force Wind Warning:** 64 knots or greater (refers to wind speed and does not imply that a hurricane is occurring or expected to occur)
- **Freezing Spray Warnings:** Ice is expected to build up at a rate of 0.7 cm per hour or greater.
- **Localized Warnings:** Issued for any hazardous weather that requires immediate attention. Examples include water spout or squall warnings.

Obtaining Forecasts

- **Environment Canada's Weather Website**
- **EC Weather Professional (Forecast Consultation Service - user fees apply):** 1-888-292-2222 (direct billing) or 1-888-292-2222 (cellphone access, credit card account billing)
- Environment Canada's public and marine forecasts and warnings broadcast 24 hours a day on **Weatheradio**.
- Environment Canada's marine weather forecasts and warnings. For information on Radio Aids to Marine Navigation, visit **Canadian Coast Guard's Continuous Marine Broadcast (CMB)**.

National Weather Service, NOAA

National Data Buoy Center (www.ndbc.noaa.gov)

See: Weather and Hazards Data Viewer: http://www.wrh.noaa.gov/map/?wfo=sew&obs=true

Buoy 46088 (Hein Bank)
Race Rocks Automatic Weather Reporting System (CWQK)
Port Angeles Coast Guard Air Station (KNOW)
Port Angeles Fairchild International Airport (KCLM)
Sheringham Automatic Weather Reporting System (CWSP)
HOKO 1SW Weather Station (HKOW1) – at Kydaka Point (4 nm west of Clallam Bay, 11 nm east of Neah Bay
Buoy 46087 (midway between Tatoosh Island and Carmanah Point (i.e., 13 nautical miles east of Swiftsure Bank)

Marine Forecasts (http://www.nws.noaa.gov/om/marine/zone/west/sewmz.htm)

PZZ133: Northern Inland Waters including the San Juan Islands

PZZ131: Central US Waters Strait of Juan de Fuca

PZZ130: West Entrance US Waters Strait of Juan de Fuca

PZZ150: Coastal Waters from Cape Flattery to James Island out 10 NM

PZZ170: Waters from Cape Flattery to James Island 10 to 60 NM

What is a "Marine Zone Forecast"?

US National Weather Service marine zones are specific, defined over-water areas contained in the various NWS marine forecast products. Each zone is identified by a text description and a Universal Generic Code (UGC), e.g. LONG ISLAND SOUND EAST OF NEW HAVEN CT/PORT JEFFERSON NY, ANZ330. Zones are divided to identify meteorologically dissimilar areas. Marine Zone Forecasts outline the range of conditions which may be found within the entire zone. The size of a zone and the number of zones within a forecast product is a compromise between forecast accuracy and dissemination limitations. Click HERE for several different options to obtain marine zone forecasts.

NOTE....High seas forecasts track individual weather systems rather than subdividing the forecast area into zones and providing a forecast for each.

What is a "Marine Point Forecast"?

A US National Weather Service "Marine Point Forecast" refers to a text forecast for a single point. In actuality, the "point" is a single small rectangle which represents the resolution of the computer forecast models which is typically 2.5 by 2.5 kilometers. The point forecast is generated from a forecaster-generated gridded data set known as the National Digital Forecast Database (NDFD) also used to produce graphics. The NDFD is used as the basis for the majority of local public and marine forecasts and is in the process of being further expanded to the offshore and high seas areas.

Please Note: Being a forecast for a single point, the point forecast is very specific and mariners should also be aware of weather conditions in the surrounding area. Forecast information for the surrounding area can be found within the zone forecast and the NDFD graphics. Be aware, the forecast conditions at a particular point may not exceed the criteria of a Small Craft Advisory, Gale, Storm etc. These watches/warnings/advisories are issued for the entire zone in which the point resides and mariners should act accordingly.

Marine Point Forecasts are available as part of US National Weather Service webpages popularly known as the "Point-and Click" pages. Included on these pages are the Forecast-at-a-Glance feature which allows a quick overview of forecast weather, a listing of any active warnings, watches or advisories, and links to an "Hourly Weather Graph" and other data of local interest. Marine "Point-and Click" pages are available HERE and via the maps found at the relevant forecast office. At the majority of offices clicking on the map will link to the marine zone forecast and then allow further zooming to the point of interest whereas on the Great Lakes, the first link is directly to a point forecast with the further option to link to the associated zone forecast which includes that point.

Note....Point forecasts are not yet available and/or may only be available experimentally in the areas of Alaska, Micronesia, Samoa, offshore, high seas, Canada, etc. (zone forecast may be returned in some cases or may also be returned when point data is temporarily unavailable).