

## Lake Champlain Sailing/Racing Conditions

### General

There is no sea breeze on Lake Champlain. Wind conditions are totally weather system dependent. The strongest and most stable winds occur when a weather system transition is occurring. At other times, particularly when a high-pressure system has settled in, winds are typically light and variable. There are two prevailing weather system transition conditions. The first occurs when the high pressure system is to the south and results in warmer south and southwest breezes, generally in the range of 5 to 15 kts, although sometimes stronger depending on the situation. The second occurs when a high pressure system is moving in from the northwest (aka a Canadian high) and generally results in cool north to northwest breezes, generally in the range of 5 to 15 kts, although sometimes stronger depending on the situation. In the fall, we are more likely to see winds at the higher end of the wind range, particularly in the case of the north wind situation. We occasionally have west winds, but these are typically less stable and of fairly short duration. It is very rare to get east winds on Lake Champlain and these winds are typically quite unstable and also of fairly short duration.

### Racing in Shelburne Bay

The bay is approximately 2.5 nm long (north-south) and 1.5 nm wide with a 0.6 nm opening to the north. The racing area situated in the middle of the bay is roughly 2 nm long by 1.2 nm wide. In all wind directions, unless winds are over 15 kts there is typically flat water with minimal chop. In a south breeze if winds are over 15 kts, there can be a small chop. In a north wind we will start to get a small chop at around 10 kts growing to a moderate chop as winds increase. In north winds greater than 20 kts we can get a 1-2 ft chop, particularly in the northern and eastern parts of the bay. In west and east winds, due to the minimal fetch, the water is typically fairly flat regardless of wind velocity.

Due to the limited size of the bay, there are land effects to be considered in both north and south breezes. These effects are typically more noticeable in south winds, but are also worthy of consideration in north winds as well. These effects are typically more noticeable along the eastern shore. In a south breeze there tends to be much more variability in velocity and direction the deeper one gets into the bay. Depending on the location of the course, in south winds, there can also be some land effects due to Allen Hill, located at the southeast corner of the LCYC mooring field. In east and west winds the land effects are typically minimal, aside from shore effects when approaching the windward mark, which would normally be fairly close to shore.

### Racing in Burlington Bay

Burlington Bay is a broad open bay that is part of the main body of Lake Champlain, also known as the "Broad Lake" north of Shelburne Bay. The lake at this point is 8+ nm wide (east – west) with a 15+ nm fetch to both the north and south. Due to the open water and boat traffic there will be more chop in all wind conditions, as compared with Shelburne Bay. In 15 kts and higher the waves can grow up to 3 - 4 ft or higher as winds approach 25 kts. The race area in Burlington Bay is further offshore than in Shelburne Bay and, as a result, land effects, while not non-existent are fairly limited. In a north wind the Start/Finish and Leeward Mark would be located in the area of the "P Mark" approximately 0.5 nm north of Shelburne Point. In a south or southwest breeze the race course would be located somewhere in the middle of Burlington Bay.

### Racing in the “Broad Lake” Southwest of Shelburne Point

The lake at this point is 8+ nm wide (east – west) with a 15+ nm fetch to the southwest. This venue would most likely only be used in a S or SW breeze. In that case, the Start/Finish line will be located somewhere to the S of a line running between the end of Shelburne Point and Juniper Island. Sailing to and from the race course, boats should give Rock Dunder (located ~0.5nm to the NW of Shelburne Point) a wide berth on the S side as there is a shoal running out in that direction. Due to the open water there will be more chop in all wind conditions, as compared with Shelburne Bay. In 15 kts and higher the waves can grow up to 3 - 4 ft or higher as winds approach 25 kts. The lower part of the course is fairly close to the western shore of Shelburne Point and there can be some land effects while sailing closer to shore but otherwise the course is fairly free of land effects. Due to a lengthy sail to get to the Start line, there is a very low probability that we would sail in this venue in a W, NW, N or NE wind. In this case the Start/Finish line would be further to the south and in all but a NE wind the land effects are insignificant.