

## USA – San Diego to Seattle Weather Pattern

It is a common misconception with skippers new to the area that summer brings calm conditions to the west coast. This is far from accurate as the following discussion will point out.

The weather between Point Conception and Cape Flattery can be divided according to the four seasons:

1. Winter time storms
2. Spring calms and transition period
3. Summer time NW winds (like trade winds)
4. Fall calms and transition period

The general cycle is predictable on the large scale. It is the daily fluctuations and timing that are difficult.

Winter brings storms from a westerly direction. They are well tracked and there is normally a warning that they are coming. Sometimes the storms form close to the coast and there is less warning but this is infrequent.

Prevailing winds are from the NW. As a storm or gale approaches in the form of a cold front, the winds switches to the SW or S or even the SE and increase to 30-40 knots and several times a winter up to 50-70 knots. Winds stay out of this direction for 12-36 hours and seas build to 10-20 feet, sometimes more. When the front passes the wind switches to the NW and may blow harder for 24-48 hours. With the NW winds, seas may be 20-30 feet and higher. If this is an isolated frontal passage then winds and seas will start calming down after 24-48 hours.

There may be a calm period between fronts with light and variable winds or the storms may come in quick succession and winds may stay strong out of the NW for days or weeks on end. This past winter had a string of gale and storm conditions that lasted from the beginning of December to mid January with winds varying between south west and north west 35-40 the entire time.

Spring brings a longer gap between systems. Typically, April 1<sup>st</sup>-May 15 is the best time to target a north bound passage. During this time period, calms may last 5-7 days and odds are in your favor to find a weather window to run north non stop with winds below 20 knots. However, a window like this requires a flexible schedule and an ability to wait for the correct conditions and forecasts.

Summer winds are a machine with the trade wind characteristics of strength and consistency. Basically it works like this. High pressure becomes stationary in the north pacific and blocks the passage of fronts. The higher the pressure the stronger the winds. The desert heats up inland of the coastal ranges of California and Oregon. When inland locations record day time temperatures in the 90's, the winds along the coast are blowing out of the north west at 20-25 plus in the afternoons. When the inland temps are over 100, which is typical during June, July, August and September, the winds will blow 30 plus day and night from the north west.

There are several factors which join together to enhance and steer the winds.

1. Wind along the east side of the high naturally curve around the high and blow from the NW.
2. The thermal low inland created by the extreme day time high temperatures creates a vacuum.
3. The water temps along the coast never get above the mid 50's.
4. The cold air at the coast caused by the cold water gets sucked inland to fill the void left by the rising hot air.
5. The coastal mountain ranges create a venturi effect where the wind gets squeezed up against the west side of the mountains and accelerates.

When the 5 points combine in unison from the beginning of June to late September it creates the trade like winds that are common between Point Conception and Cabo Blanco Oregon. During this time frame it is normal to have winds out of the NW at 25-35 with swell of 8-10 feet, seas of 4-8 feet for a combined height of 12-18 feet, and dominant wave period of 6-8 seconds. These conditions will prevail unless a weather feature approaches from the west in the manner of an un seasonal summer front or high pressure inland, which results in relief from the incessant winds.

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A north bound passage between Point Conception and Cape Flattery can be very difficult between early June and late September and there may be a several week wait for winds below 25 knots. When the calmer winds come they are usually short lived. The trip will most likely have to be taken in several pieces with long waits in port.

Late September and October bring the more settled weather of fall. Conditions are similar to Spring. Inland temperatures drop, the pacific high breaks down, the occasional front passes thru. Weather windows are common. And if the wind is blowing from the NW, it is a downhill run.

One of the challenges along the coast is frequent fog. Calms are frequently accompanied by fog. It is not unusual to have ¼ mile of visibility or less for long stretches of the run from Cape Flattery to Point Conception.

Areas of concern from south to north are Point Conception and Arguello, Point Sur, Point Reyes, Cape Mendocino, Cabo Blanco and between the Colombia River and Cape Flattery. All of these locations have a common trait of higher winds and seas.

It is common to see winds 40-50 out of the North West with seas 15-18 feet at Cape Mendocino. These conditions occur June – late September and are generally accompanied by blue skies.

Between the Colombia River and Cape Flattery is stretch of unusual water. The volume of water exiting the Colombia River and the Straits of Juan De Fuca is tremendous. Added to that are various near shore currents and large ground swell. It all mixes together to make for an uncomfortable area. Rounding Cape Flattery should always be done with extreme caution.

Of particular importance is the fact that once north of Point Conception, the harbor entrances may be impassable when seas are over a certain size. If you have to hide from weather then commit early. If you wait too long you may not be able to get in or the risk associated with crossing the bar or harbor entrance may be unacceptable. Do your homework and find out at what sea height the bar crossing becomes dangerous at all potential harbors of refuge.

A north bound passage is best done during the transition period of Spring for the best odds of a reasonable delivery time. A south bound passage can be done just about any time between June and October in a sound vessel and winds will be strong but generally aft of the beam. Passages in either direction during the winter should be done only with an expert eye on current and forecasted weather conditions and a well planned route with stops for shelter from the gales and storms.