III. Wind & Weather in Europe

While Northern Europe is indulged with consistent westerlies between 40 and 60°N (the Western Wind Zone), Southern Europe is broadly affected by the Subtropical Highs. With the changing season, the summer sun slowly migrates from the Tropic of Cancer in the Northern Hemisphere towards its southern winter retreat at the Tropic of Capricorn. This shift of the global weather machinery changes the general situation in Europe too, meaning weather scenarios typically differ north and south of the Alps and Pyrenees.

Northern Europe

The prevailing westerlies areare the northern European climate is due – from Brittany via the British Isles up to Scandinavia – the whole year round. They're created by a pressure difference between a pretty consistent pressure in the west and the low pressure conditions of the eastern coast. The low-pressure racetrack slips south in winter, bringing Christmas trees from the North Sea to the Mediterranean. Winter storms also bring a nice Atlantic Ocean swell, although the legendary big seas are only ridable between Galicia and Britain or on the British and Irish Atlantic facing coast where the North Atlantic Drift warms the water to tolerable temperatures.

Southern Europe

The Azores High extends into the Western Mediterranean during the summer, and at a altitude it is even active above the Eastern Mediterranean. Throughout this region, nice dry weather therefore dominates the summer months. Cold fronts will occasionally disturb the Mediterranean climate. Summer ambient winds are relatively weak in the Western Mediterranean, but its topography provides a few pleasant surprises: Framed by mountains on nearly all sides, there are precious few narrow gaps between the masses through which the wind must make its passage. Each of those funnel areas is a jet to accelerate these local winds, also called ‘venturi’ or ‘gap winds’. If the approaching air-masses manage to pass the mountains blocking their way towards the Mediterranean, they often finally blast out to sea as a full-force storm. The most famous of these ‘katabatic’ and ‘jet-effect’ winds is the Gulf of Lyon’s ‘Mistral’. Once cold and dry air seeps down through the Rhone Valley, Provence’s tourist beaches transform into challenging wave-spots in no time. The Mistral wind blow down to Sardinia in the Eastern Mediterranean and Minorca in the west, and it can occasionally reach all the way to Sicily, 100km south. The ‘Tramontana’, Mistral’s little brother, is confined to the area between Montpellier and the Spanish border. Both Mistral and Tramontana winds are less common during the summer than the cooler months of the year.

In contrast, the Strait of Gibraltar is a safe bet during the summer. This narrow Strait is less than 14km wide and can have nice jet-effect winds. Sometimes for days or even weeks at a time, the easterly ‘Levante’ whistles through between the southern edge of the Azores High and the Northern African heat low. Southernly winds predominate at most spots along the Spanish Mediterranean coast due to the summertime land-based heat flow.

Wind conditions across Southern Europe. From May to September the barometric pressure suddenly falls between the Azores Ridge in the west and the low in the Middle East. This low is not comparable to the cloudy low-pressure zones of the Western Wind Zone though. In part it’s a dry trough of the ‘Monsoon Low’ over India, but can also be a summer heat low with a centre over southern Turkey. This pressure difference is a familiar Eastern Mediterranean feature, and the ‘Etesian’ blows dependably from the north. The Differential is particularly large above the Aegean Sea due to the close proximity of the Turkish low. Hence ‘Meltemi’ means a dependable wind from the reliable wind from the Cyclades via Rhodes down to Karpaz.

Over on the Atlantic coastline of Western France and Spain, the Azores High takes control again – it’s no coincidence that the Bay of Biscay is full of surfers during the summer months. Whereas, local thermals and thunderstorms. These live winds alternate repeatedly with bright hydrological phenomena. The Mistral and Tramontana now frequency assault the Gulf of Lyon, as does the brisk ‘Bora’ – a cold katabatic wind that blows stiffly off the dusty Northern African desert wind blows only 15 days a month towards the coastal Southern Europe along a northwestern Saharan Low. This hot Saharan southeast wind raises unexpected to moderate waves in Morroco’s coastline and between the Canaries. So again, lows sweep in from the Atlantic to bring rains and

topography enhance north-easterly winds in Galicia – if the Atlantic also builds up a nice swell you can expect very calm and clear conditions in Portugal, although northerly breezes prevail west of the Iberian heat low and wherever these are locally enhanced, spots such as Guincho or Sagres may be. Morroco’s coastlines are especially blessed during the summer. Both are in the midst of the pressure gradient of the Subtropical High and the Eastern Mediterranean Low and are treated with exceptionally stable north-easterly trade winds. Since these strengths along Morroco’s coastline and between the Canaries and particularly on the Canaries are unquestionable supremacy between May and September.

The Azores High retreats out to the Atlantic Ocean for winter. In doing so, it also moves a few degrees further south and allows troughs of low-pressure from the Western Wind Zone to bully their way into the Western Mediterranean. They squeeze in via the Strait of Gibraltar, accelerating the westerly ‘Poniente’ here. During wintertime the Mediterranean also produces its own lows that bring rain and thunderstorms. These live winds alternate repeatedly with bright hydrological phenomena. The Mistral and Tramontana now frequency assault the Gulf of Lyon, as does the brisk ‘Bora’ – a cold katabatic wind that blows stiffly off the dusty Northern African desert wind blows only 15 days a month towards the coastal Southern Europe along a northwestern Saharan Low. This hot Saharan southeast wind raises unexpected to moderate waves in Morroco’s coastline and between the Canaries. So again, lows sweep in from the Atlantic to bring rains and windy weather.

A up north, Southern Europe – particularly in Atlantic Ocean and Mediterranean windy spots – provide a promising combination of warm summers and vigorous winters. Best seasons for travel are spring and autumn – take some time and you’ve got a high chance of catching good waves and nice surf conditions. Low prices and empty beaches are another off-season advantage.