

## Wessex Coast Flying Advice

### Introduction

Wessex have 8 sites on the coast for which there are site guides, but also there are other places where paragliders occasionally launch and a huge stretch of coastal runs which are not covered by the guides. This document offers some advice and highlights some dangers of those areas and coastal flying in general.

There are two sections:

- General Coast Flying Advice
- Specific area advice covering West (West Bay) to East (Barton)

Coastal flying can be smooth and often requires less active piloting and it can certainly be beautiful. However there is a misconception that it is relatively safe or easy.

Coastal flying has particular dangers and technical aspects and the unsuspecting or unprepared pilot can quickly get into trouble. You should not be fooled by what you consider to be smooth laminar air as it is certainly not smooth everywhere and only experience will tell you exactly where.

It is quite different from inland or hill flying and to compound this there is also very little information about this discipline of our sport in technical books, courses or articles.

You may encounter rotor, danger areas, inaccessible beaches, dead zones, peculiar clouds, squalls and you need to know how to recognise or anticipate them. There are different paths to follow depending on wind strength.

There are places to avoid and places that are dangerous to fly in certain conditions. There are No-fly Zones and Nature Reserves. There are also sensitive areas we need to be aware of which might risk our ability to have free flying available to us on our coastline.

Please read this guide thoroughly but remember every day on the coast is different. Do not blindly follow advice from this guide or anyone else and do not assume that because you see pilots in the air that it is sensible to fly. Make your own decisions and if in doubt leave it for another day.

This guide was written for paragliders. Hang glider pilots should be aware that the situation may be very different in their case.



## General Coast Flying Advice

Here are 11 frequent dangers on the coast:

1. Wind Shear and Rotor
2. Catching your wing on a cliff edge/tree
3. Running out of safe places to land
4. Landing on an inaccessible beach
5. Failing to notice rapidly changing wind
6. Orographic Cloud
7. Squalls, Rain, Gust Fronts and Lightning
8. Wind Range
9. Dead zones
10. Strong wind lines
11. Water landings

### 1. Wind Shear and Rotor

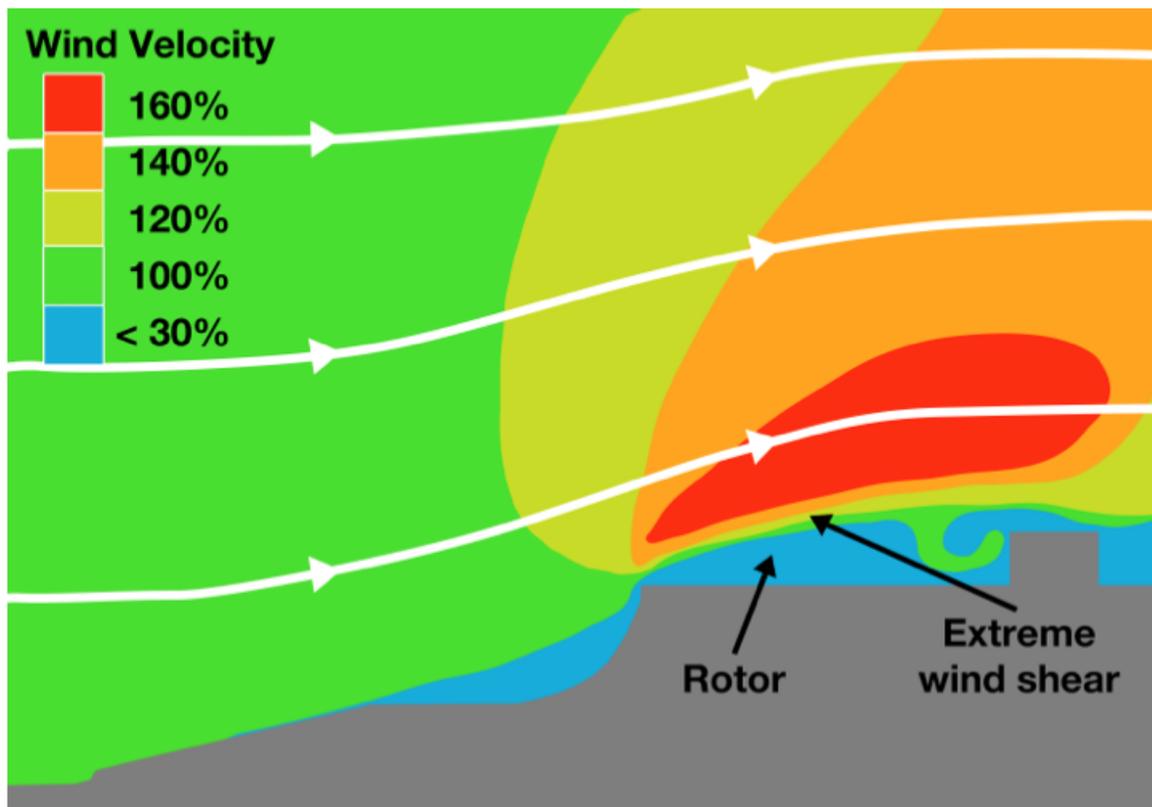
At the top of a smooth hill in smooth air the wind velocity increases due to the venturi effect (sometimes called compression). Behind a sharp cliff edge this is combined with mechanical turbulence (sometimes called rotor) where the wind speed and direction will be chaotic, changing, much reduced or reversed. The small vertical boundary between compression and rotor is an extreme wind shear. If all or part of your wing passes through this wind shear it may collapse, surge or stall and drop you down rapidly, sideways or backwards.

It is recommended to watch Colin Davies' presentation on this subject called **Wind Shear, Rotor and Turbulence on Cliff Edges**

 Wind Shear, Rotor and Turbulence on Cliff Edges

[https://www.youtube.com/watch?v=PfhH\\_CV\\_5dY](https://www.youtube.com/watch?v=PfhH_CV_5dY)

In the video Colin points out that the general areas where venturi and mechanical turbulence occur are predictable. However, due to the chaotic nature of rotor, the precise wind shear boundary is constantly moving. Just above the rotor is the greatest compression, where wind velocity can be over 60% higher than out front. In a strong breeze entering this area could have you pinned, travelling backwards. Staying in front of the cliff is the safer place; landing or flying behind the cliff line is often risky.



The image above illustrates this with Barton-on-sea in mind, which is a 60 foot cliff. The grey shows a cross section through the cliff, with the wind coming from sea on the left of the image. The colours illustrate the relative wind velocities as it speeds up in the venturi above and behind the cliff. The area of rotor behind the cliff edge is marked and the extreme wind shear is shown, where the wind speed changes rapidly with height.

Some of our cliffs are 500 feet high and undercut so the areas of rotor will be larger. From experience we know that subtle changes in direction of wind can cause radical changes in the strength and position of rotor. Be aware that conditions are always changing.

The 30 minute video will help you understand more. Colin is mostly discussing from the point of view of landing decisions, but of course the same analysis applies to soaring. Flying along cliffs, hills or dunes, buildings, trees or any obstacle in wind in the wrong area will be as dangerous as trying to land there.

Rotor can occur not just at the top of a cliff but around the sides of cliffs and hills. If you are flying into wind along a coast, beware of rotor from any significant topography upwind of your line. Anything large that sticks out will cause rotor, like Durdle Door, Bats Head or the rock stack at Beer. Do not fly behind these and steer clear in all directions, including vertically.

## **2. Catching your wing on a cliff edge/tree**

In light wind situations there will be very little lift and pilots often fly closer to the cliff or hill face. Sometimes they come too close and catch their wing on rock or a bush. This stops the glider and will likely turn you into the cliff face at full glide speed, or start a vicious pendulum or cause a full wing collapse. Avoid this at all costs. Keep a close eye on your wingtip, the lines and upcoming protrusions, particularly tree branches. Always give yourself enough distance to cope with fluctuating wind and human error.

## **3. Running out of safe places to land.**

When coast flying you are mostly not very high in the air, in light wind you might be below cliff height and some sites involve very low cliffs. In this circumstance if the wind drops you are only a few seconds from needing to land. There will not be much time to think and react. If you are in a place where there is no suitable landing then you are in a potentially very bad situation. You would need to instantly choose between landing on the cliff face, in trees and bushes, close to buildings or people or vehicles, on jagged rocks or in water. You must never be in this situation. The way to avoid this is to always have a suitable landing spot in mind and within glide distance from your current height. You must NOT soar around a corner without knowing what is around it. If you cannot find the next landing point then you need to turn back and stay in a place where you do have one in sight. If you start losing height you need to give up your flight and glide to your best option. Remember the entire coastline is very tidal so what might be a suitable beach sometimes might disappear in high tide. Know the tide timetable for the day. Always land in the safest place you can get to. Do NOT try to save effort trying to land nearer your car if it is not so safe to do that.

## **4. Landing on an inaccessible beach**

When considering a beach landing you need to be certain, not only that a spot is suitable to land on but also that there is access to be able to walk out. There are several beaches in our region that are entirely inaccessible on foot and escape will require emergency services, cliff rescue or RNLI. There is a real danger of drowning if caught in a rising tide on an inescapable beach. Phone signal is notoriously bad at the foot of a cliff. Get to know the specifics of each beach and suitable exit points. Understand the range of the tides. Consider not only your own safety but also that of those who may need to take risks to rescue you.

## **5. Failing to notice rapidly changing wind.**

Although this is important whenever you are flying, there are increased dangerous elements on the coast such as:

- a) Getting blown out to sea.
- b) Not being able to maintain flight in bad landing areas.

- c) Increasing wind causing venturi beside high points.
- d) Increasing wind causing dangerous rotor behind sharp edges.
- e) Increasing wind causing pilots to get pinned on cliffs without safely being able to turn and run due to topography or rotor.

Be aware of wind strength and direction at all times. To establish this you may use a combination of ground clues like sea state and movement of trees and information from your instrument and in particular your ground speed when facing into wind. White horses on the sea occur at 13 – 18mph and above 19mph are everywhere.

Also be attuned to cloudsuck from clouds above you. Unlike inland you have very restricted choices of safe directions to fly away from overdevelopment and cloudsuck.

Remember that the clues you can see on the ground and readings from ground based stations may not accurately indicate conditions at altitude. If in doubt land early rather than too late.

## **6. Orographic Cloud**

This type of cloud is often found on our coast. It is possible to fly with it and around it but its behaviour is fairly unpredictable. It is very dangerous to go into cloud on a paraglider on the coast as other pilots are likely to be at a similar altitude and collisions are most likely fatal. You lose sense of direction in a white-out and get disoriented, even not knowing which way is up. Instruments do not work reliably. There is a chance you will go too far out to sea and not be able to get back to land. There is a chance you will fly into rotor behind the cliff edge or fly inland where there may be no suitable landings. Do NOT launch into cloud. Do NOT fly in cloud. If you see it forming land well before it envelops you. AVOID flying in rain. If your wing gets wet, use more bar and minimal brake due to the risk of parachute stall. Land asap.

## **7. Squalls, Rain, Gust Fronts and Lightning**

Occasionally a weather front comes in quickly from the sea. It might be a strong wind or rain or both. There are normally clues like a haze from a curtain of rain or a definite change of sea state which might be seen approaching the coast. Rain normally is preceded by increasing wind and turbulence. Be vigilant of approaching and changing conditions and be ready to land. Always land if there is lightning.



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## 8. Wind Range

Competent pilots sometimes choose to fly the coast in stronger wind than they would inland. If you cannot ground handle your wing or need assistance to walk forward, then it is beyond safe limits to launch. In the air, if you need to use speedbar to move then you no longer have any tolerance for wind speed increase. Remember you can't use bar during launch or landing. The wind will increase with compression on clifftops and high points. Remember too that if you are needing to use speedbar to fly low then you are no longer able to tuck your legs underneath you to perform SIV type reactions to collapses or spins. This makes that situation more dangerous for you. Do NOT fly when using speedbar would be essential.

Wind speed may be different at different heights. In which case there can be a sheer layer between them. Know your limits and the limits of your equipment and maintain enough tolerance for weather changes. Landing going backwards may not even be an option in some places. Land early rather than too late.

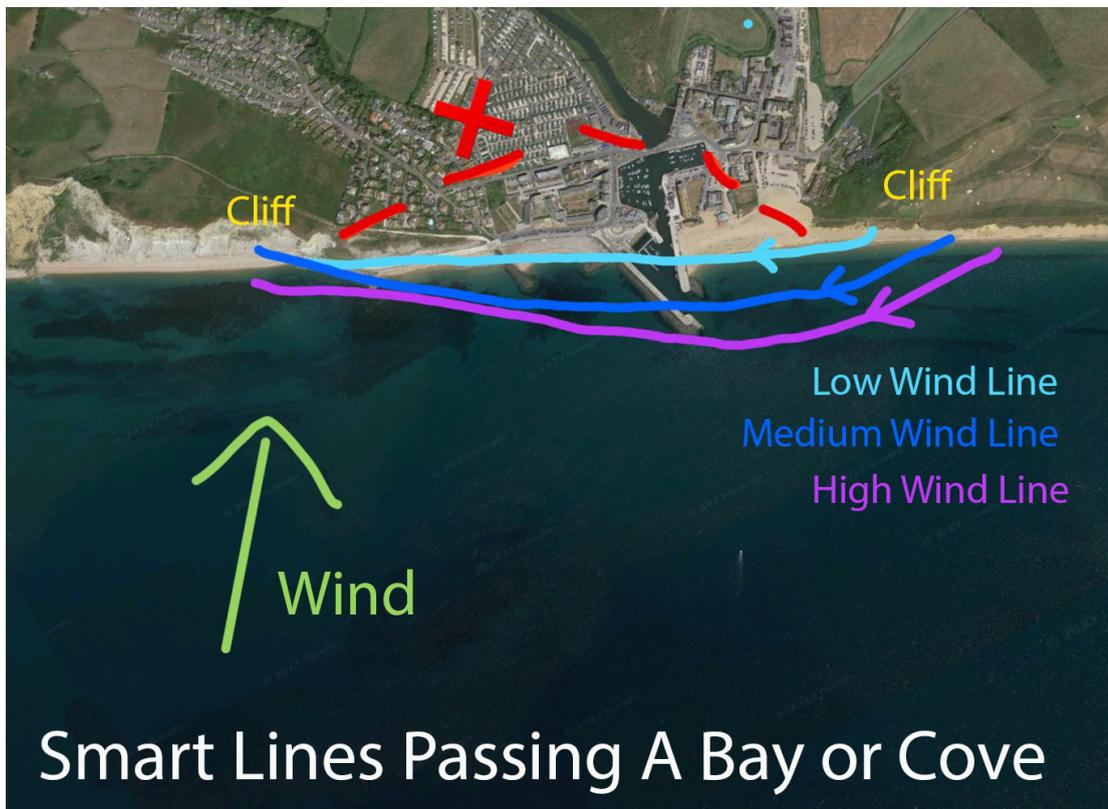
## 9. Dead zones.

Just because it is windy at the top of cliffs, don't expect it to be the same at the bottom. The bottom third of cliffs can have a dead zone where there is no lift. The bigger the cliff the bigger the zone. Do NOT expect to soar the bottom third of cliffs, expect to need to land. If landing in a dead zone expect it to be a nil wind landing requiring more space and the need to run.

## 10. Strong Wind Lines.

In strong wind the area of lift is normally further out from cliffs and hills. The stronger the wind the greater this effect. Stay in this area, further out, potentially over the sea. Do NOT venture too far in over hills where venturi will increase the wind speed but without the vertical lift component. There is a risk of being pushed inland or pinned in an area with no lift.

Crossing bays the line should be found outward (possibly over sea) rather than inward. Thus do NOT follow the inland shape of the bay. Find a line where you can comfortably maintain height. See diagram here, but always make your own decision.



## 11. Water Landing

It is well known that water landings are frequently fatal so they should never be considered. If crossing water always be within safe gliding distance of a landing area. Coastal pilots may consider carrying: Hook knife, life jacket, whistle, waterproof strobe light.

Almost every alternative to water landing is preferable, including tree landing or downwind beach landing.

## Coastal Flying - West To East

**West Bay** is the first bay east of Eype, the DSCondors site. It is broad and requires plenty of height to cross. Every day is different. Emergency beach landings are possible but dangerous when the beach is busy in the summer. There are suitable fields for emergency landing behind the town but ensure you are high enough to cross over the town and go sufficiently far back to avoid rotor from buildings.

Example video [link](#).

The cliff edge on the east side of the bay is sharp and steep and thus is surrounded by turbulence. It is not a good idea to get too close to them in any direction.

### **West Bay to Hive Beach**

Generally works well but beach landing is only suitable at low-tide. Know the tide times in advance.

### **Hive Beach**

This is a sensitive area as it is often busy and there is a coastguard lookout. We have been asked to never launch or land there. Officially it is a site for Flying Frenzy School. Contact Andrew Pearce at Flying Frenzy if you wish to fly it.

It is possible to launch on the cliffs to the east of Hive Beach but beware of rotor from the sharp cliff edge. It is a technical launch but normally has beach landing below.

### **Old Coastguard Holiday Park**

The owners of this van/lodge park have asked us to not launch or land in their park. Also please do not fly close to in front of the vans as some owners are upset by it. Consider it a sensitive area and do not fly close to pedestrians.

### **Cogden Beach**

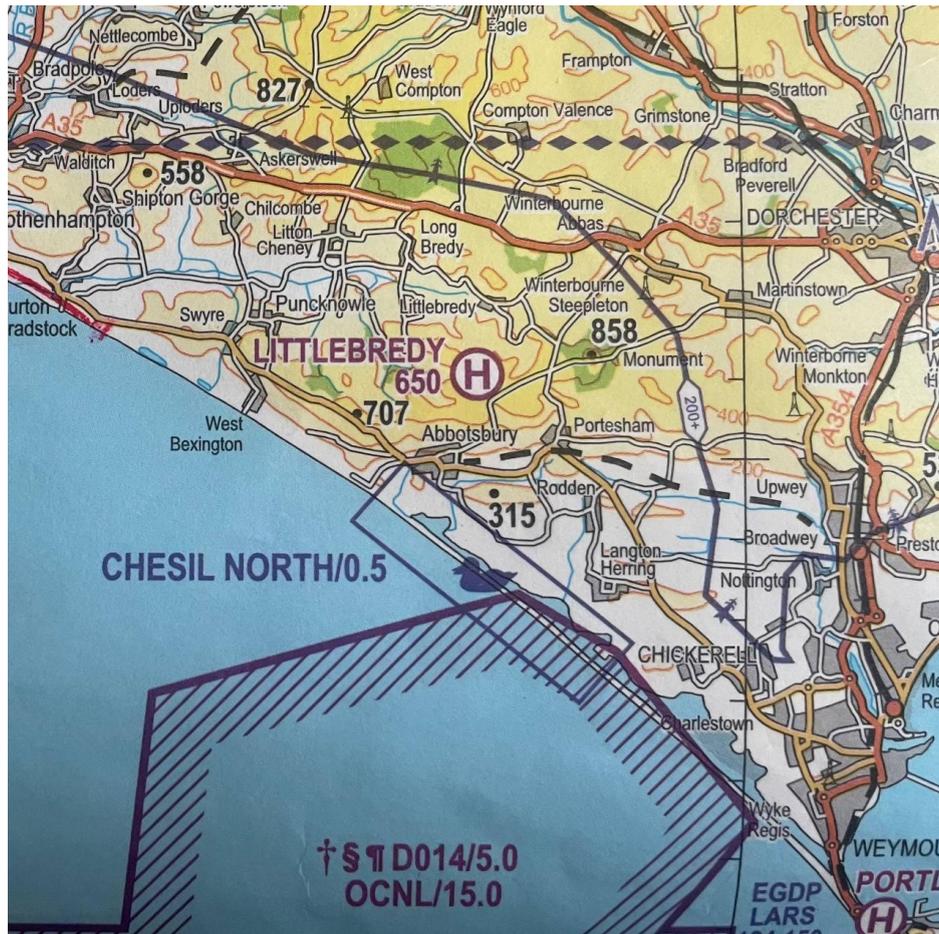
It is possible to launch from Cogden Beach, just east of Old Coastguard Holiday Park and from the grass field above it. We do not have permission to use it. There is no official arrangement. The Coast Path goes right across it. Give pedestrians full priority. Wait until people have crossed and are well away from where you intend to launch.

Cogden is the start of Chesil Beach. It is very long and not covered at high tide and is considered a safe place to land.

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## Abbotsbury Nature Reserve

In certain conditions it is possible to continue east from Cogden. Pilots need to be aware of and avoid the Swan Sanctuary and the Fleet and Chesil Nature Reserve. There is a rectangular NO FLY ZONE. This zone is amongst other things a SSSI. There are 600 swans and many other rare species over 25 acres. The Warden has asked us to not fly anywhere near there as it distresses the swans. The airspace does not appear in most instruments but is on aircharts (below). Please stay well away from the lagoon all the way from Abbotsbury to Weymouth or be well over 500 feet.



Content for airspace text file:

AC Q  
AN CHESIL NORTH BIRD SANCTUARY  
AL SFC  
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DP 50:39:56 N 002:36:35 W  
DP 50:37:43 N 002:32:12 W  
DP 50:36:58 N 002:33:13 W  
DP 50:39:11 N 002:37:37 W  
DP 50:39:56 N 002:36:35 W

More info at <http://www.fleetandchesilreserve.org/>



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**Portland East and West** are covered in the Sites Guide.

## **Bowleaze Cove, Redcliff Point, Eweleaze Beach, Black Head, Osmington Mills, Bran Point.**

There is no official arrangement in this area.

Flying at Bowleaze has occurred and been tolerated unofficially for many years.

**Ringstead** is covered in the Sites Guide.

East of White Nothe the beaches are inaccessible on foot. Do not land there. If flying east from White Nothe ensure you can turn back and return to the Nothe and maintain your height. Do not simply follow another pilot. Make your own decisions. Discuss with local experienced pilots before trying. Use radio contact with experienced pilots for safety.

## **Bats Head**

This small protruding cliff is bigger than it looks and has been known to induce bad rotor. Stay away, in front or high above to pass. Do not soar it. Expect it to produce turbulence downwind if the wind is off perpendicular. This also applies to other protruding cliffs and stacks.

## **Durdle Door**

We have been asked not to launch here. This beauty spot is often very busy and you will be videoed by the public. Consider it a sensitive area. Please do not land on the beach, there are wardens and public who will object. This applies to ManO'War and St Oswalds Beach. Ensure you have good height to cross the area. Do not fly low behind the area due to rotor.

## **Lulworth Cove**

There have been several incidents here. Ensure you are high enough to cross the bay. Do not cross the bay low inland as there is rotor from the eastern and western nibs of the bay. Note the **Lulworth Danger Area** starts at the Cove. That is a NO FLY ZONE except when it is open to the public on certain dates in the summer and some weekends. You must check the opening times at -

<https://www.gov.uk/government/publications/lulworth-firing-notice>

There can be rotor from the front cliffs. There are no sensible landings beyond the Cove for a long way.

Behind Lulworth Cove is **Binden Hill**. Although this is soarable, the wind is sometimes unusual due to the shape of the cove and care should be taken. It is not advised to wait around here. It is not advisable to launch or land here.



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Stay high on the eastern end of Binden Hill where it is safest to stay central to the valley so if you start to lose height, aim for the front slope and prepare for a slope landing. Beware there may be a venturi effect here.

It is possible to pass the cove over the front cliffs but there is no bottom landing or beach so potentially very dangerous. Only attempt with sufficient height. Heading west, ensure you have height to cross to Dungy Head where you can re-build height.

## **Arish Mell**

The beach at Arish Mell is very difficult to extricate from as it is in the Danger Area and there is no parking nearby, so a long hike out.

**Gad Cliff / Tyneham Cap.** These are the steepest and highest cliffs in the area. There will be the most extreme rotor behind them. There is no bottom landing. Only proceed with height. Maintain height above cliff level and do not drift inland.

**Kimmeridge Bay.** There is no safe landing here. Crossing the bay is possible with lots of height. Low down there are sharp cliffs and hence rotor. A portion of the bay and the hills inland are in the Danger Area.

**Houns Tout.** Landing anywhere at Houns Tout is not advised. There are few safe spots and access is treacherous. If approaching from the east beware of strong rotor if low, hence it is not advisable in a WSW. Once past Houns Tout going west there are some nice “bomb out” spots in fields but you will have a long walk out. There is no beach to land on and at low tide they are inaccessible.

**Chapmans Pool.** Beach landing is possible in low wind.

**St. Albans Head** is covered in the Sites Guide.

No sensible bottom landing. Always make sure you can top land.

## **St. Albans Head to Durlston Head.**

There is no beach landing on this stretch. It is a sensitive area as the main farmer is unfriendly to flying over his fields and cows. Do not launch or land here or face his wrath. Locals may know of some spots that are less sensitive.

**Ballard Down** is covered in the Sites Guide

**Canford Cliffs, Poole.** We do not have permission to launch or land anywhere in Poole.

## **Bournemouth is covered in the Sites guide**

It is Wessex Members Only.



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Please be sensitive to residents in high rise apartments who don't appreciate people flying through their view.

Note that the beach is often very busy and beach landings need to be done with great care.

We have agreed that no one will fly east of the Gordons Zig Zag path in Southbourne.

**Barton-On-Sea** is covered in the Sites Guide. It is Wessex Members Only.

## Finally

- Do carry and use a radio on Wessex frequency to give or get advice and in case of incident.
- Do practise rapid descent techniques like BigEars so you can use them effectively without hesitation when you need it.
- Do remember to submit a CANP if you can.
- Do comply with all the site regulations from the Site Guide.
- Do contact ATC/MCA/SAR/NFDC/BCP if appropriate.
- Do inform CoastGuard of your flying, they are only too glad to hear from us.
- Do report any incidents to Sites or Safety Officer.

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Note: This document is expected to be updated periodically with more information. Please contact Robin Wallace [pgsafety@wessexhgpg.org.uk](mailto:pgsafety@wessexhgpg.org.uk) with any updates.