
Better ridge
soaring

Contents:

1. Preparation
2. Soaring theory & tactics
3. Flying safely
4. Local flying sites

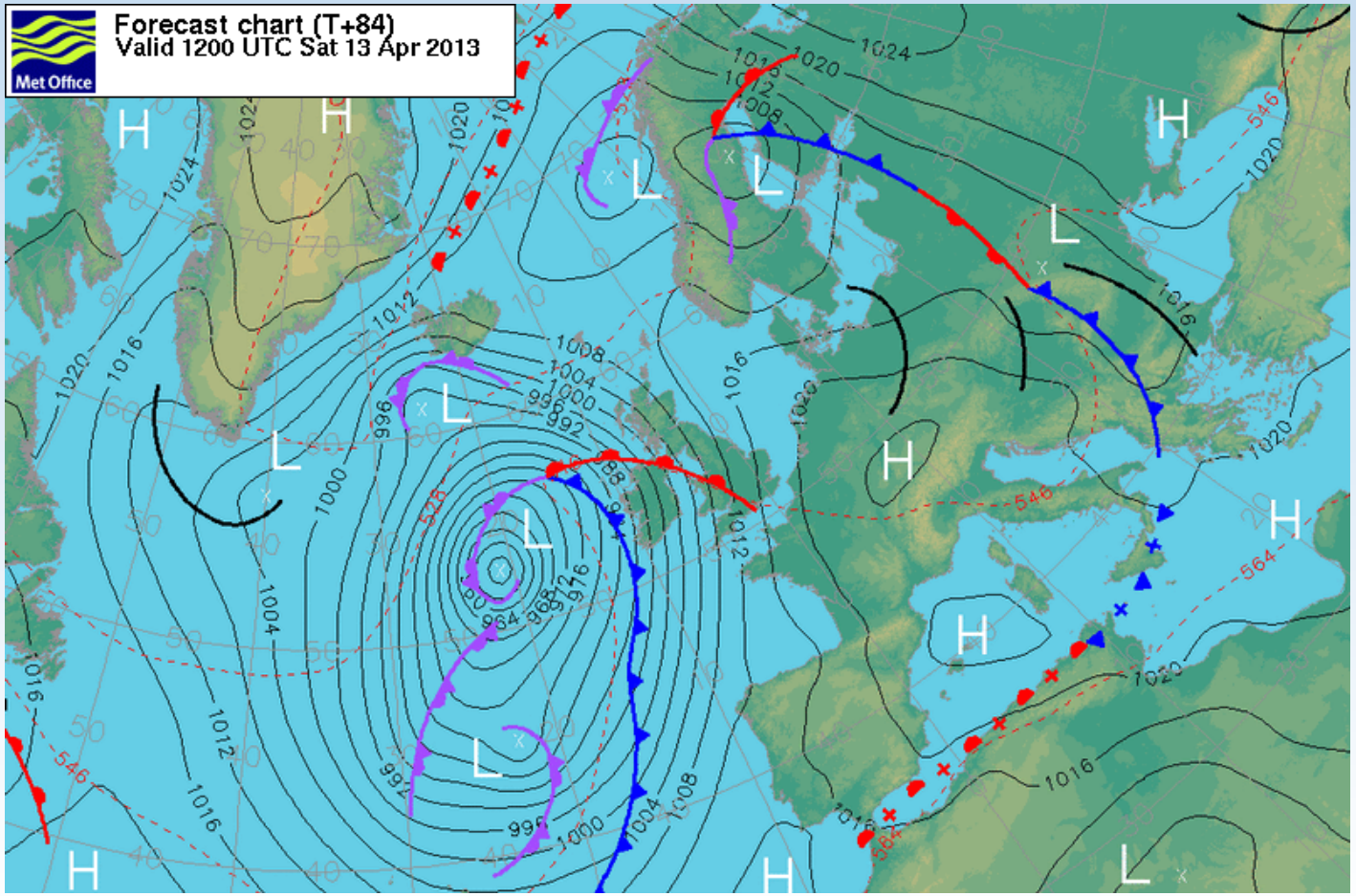
Preparation.

Conditions – gathering information.

SAFETY CONSIDERATION!

1. At home before you go…

- **Forecast:**
  - ✓Bigger picture
    - Pressure system?
    - Fronts?
    - Do all forecasts agree?
    - Stability?
  - ✓Local forecast
    - Summit wind
    - Cloud/rain
- **Weather at home:**
  - ✓Does it fit with forecast?



Conditions – gathering information.

2. On the way to site:

- ✓Winds as predicted?
  - Direction, speed, seabreeze
- ✓Clouds
  - Lenticulars, Cumulus, Cirrus
  - Convergence

3. Arrival at site:

- ✓Wind at landing
- ✓Pilots or birds flying
- ✓Clouds
- ✓Other pilot experiences

4. Walking up to launch:

- ✓ Change in wind speed or direction?
- ✓ Wind changes cyclical?
- ✓ Wind at summit height?

**Speak to other locals if new to site…*

Forecast websites

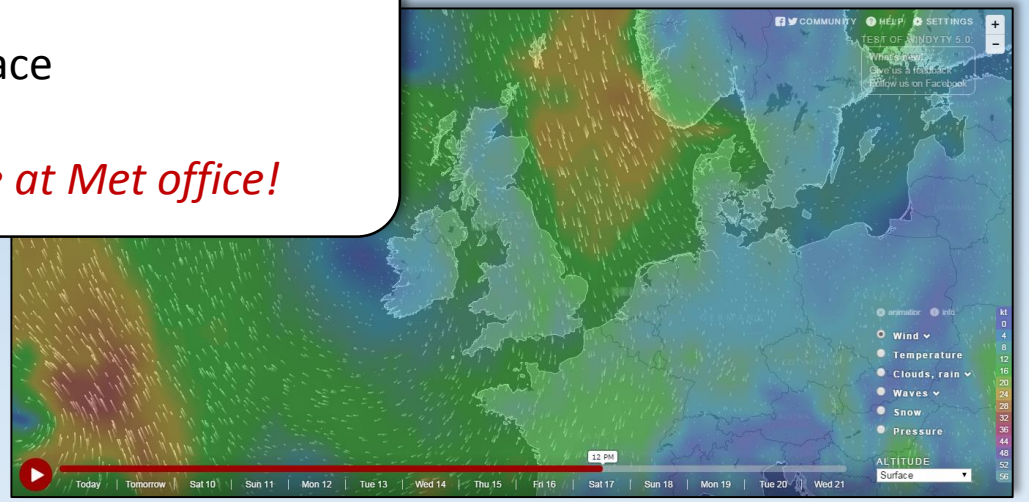
…my favourites!

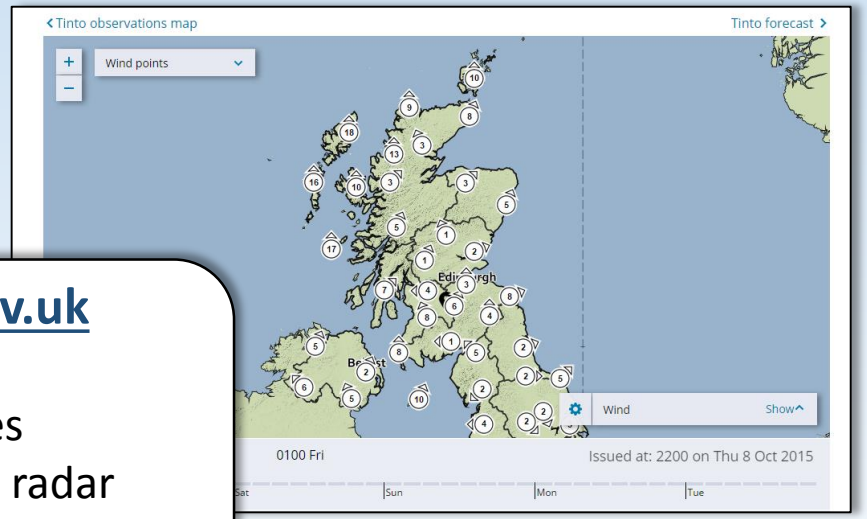
windyty.com

Good:

- ✓ Awesome interface
- ✓ Wind profile

Bad: not as accurate at Met office!



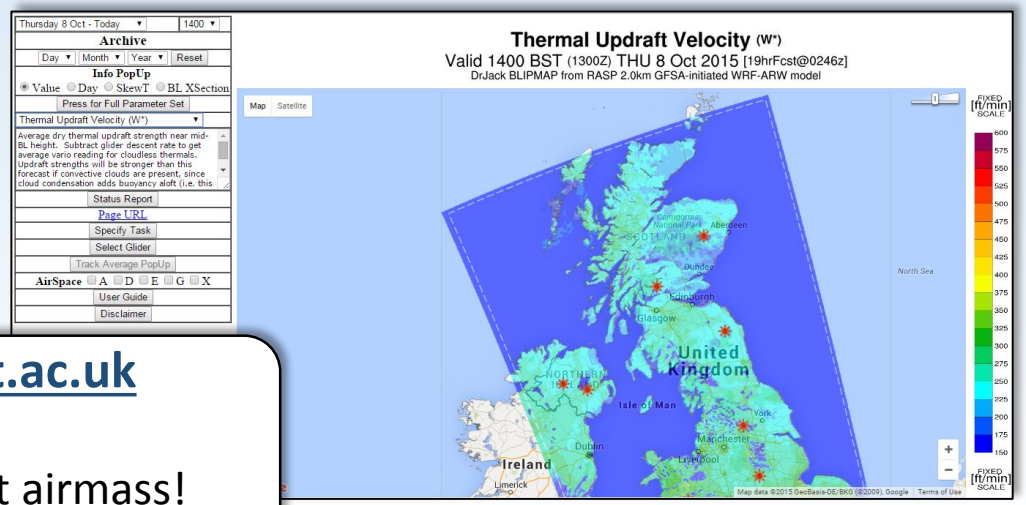


metoffice.gov.uk

Good:

- ✓ 4hr updates
- ✓ Rain/cloud radar
- ✓ Recent observations
- ✓ Most accurate?

Bad: Hard to get summit data, slow to load!



rasp.inn.leedsmet.ac.uk

Good:

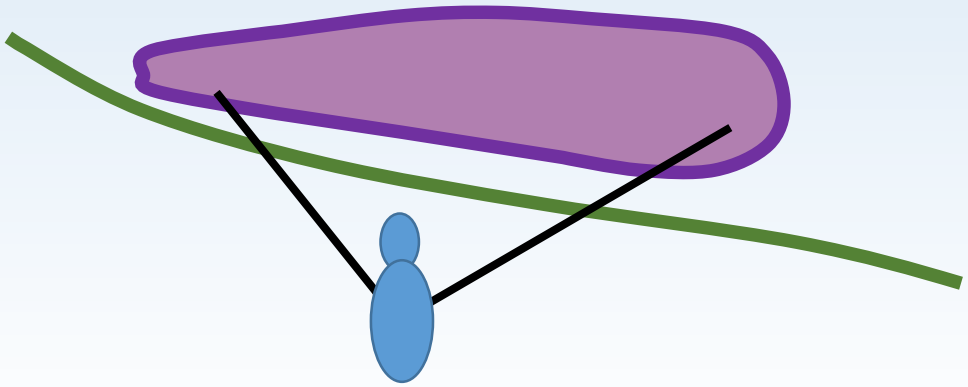
- ✓ Everything about airmass!
- ✓ Soundings for anywhere ☺

Bad: old data

There are others, who uses what?

Set-up

- Tip…use the breeze to build a wall and check lines etc.
- Reverse launch on a slope? Put a bulge in wall on down side, the bulge will come up first.

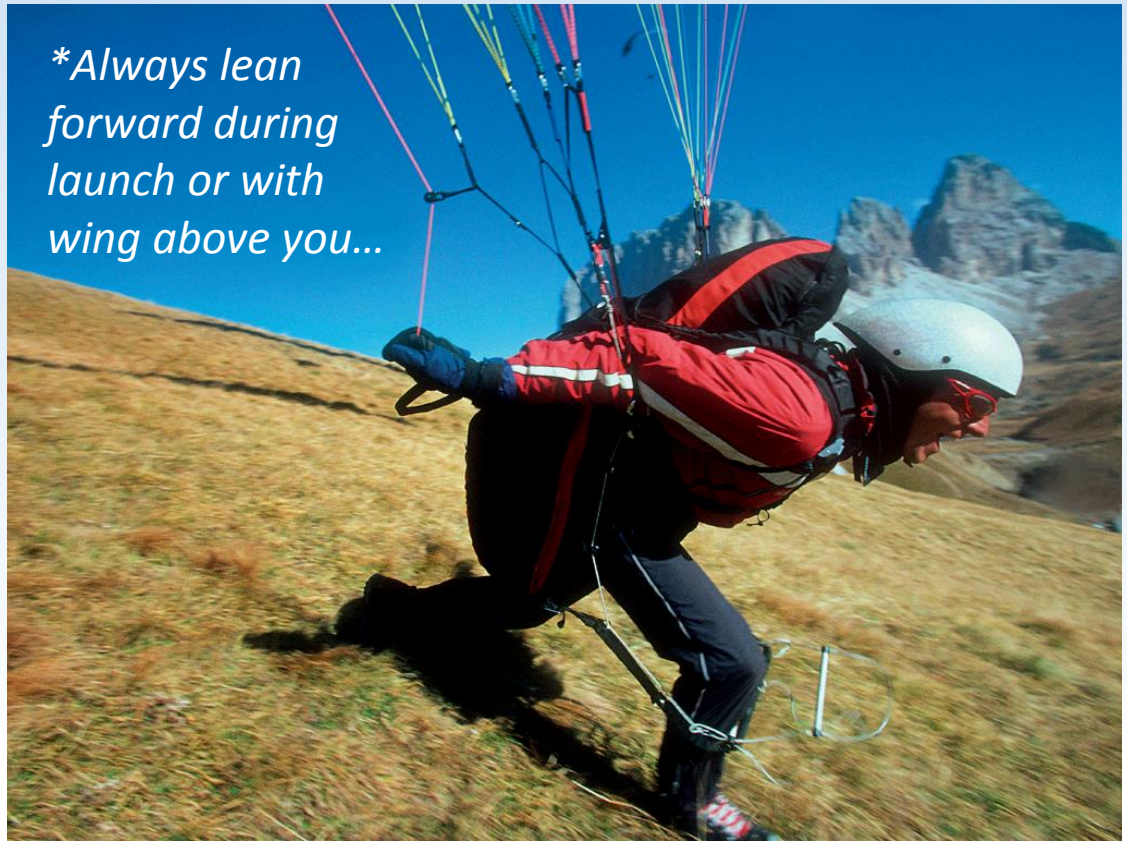


- Keep glider attached to harness.

Launch

Decide on appropriate launch…

- ✓ Can I kite up?
  - If enough wind to inflate canopy, yes!
  - How, facing wing, wing above?
  - Kite to feel conditions & thermals etc.
- ✓ Is launch appropriate for wind speed?
  - **High wind:** lower launch (if you know summit wind speed!)?
  - **High wind:** Is my potential dragging zone safe?
  - **Lower wind:** higher launch?
- ✓ Area for launch
  - Vernturi?
  - Edge of hill/side wind?
  - Away form rotor (gullys etc.)?
  - Best aspect for given wind?
  - First turn into wind?
- ✓ Launch technique
  - Lower wind: As and breaks as BHPA taught?
  - Higher wind: A & Cs (or Ds), or cobra?



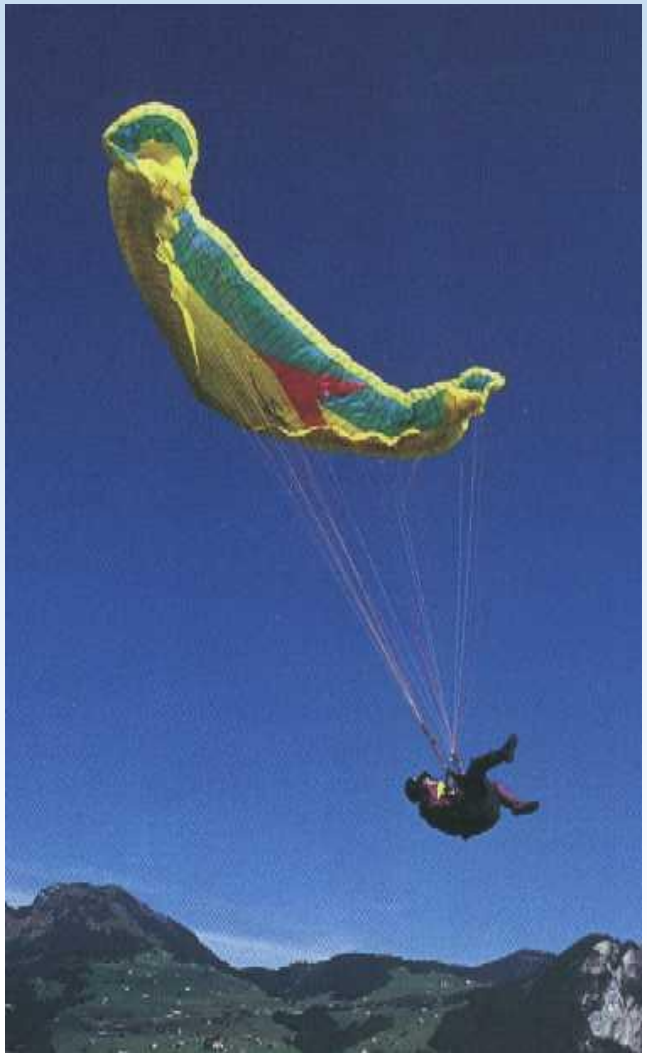
Conditions: who is flying what?!

SAFETY CONSIDERATION!

Nervous on EN A

Experienced on 'DeathBlade'

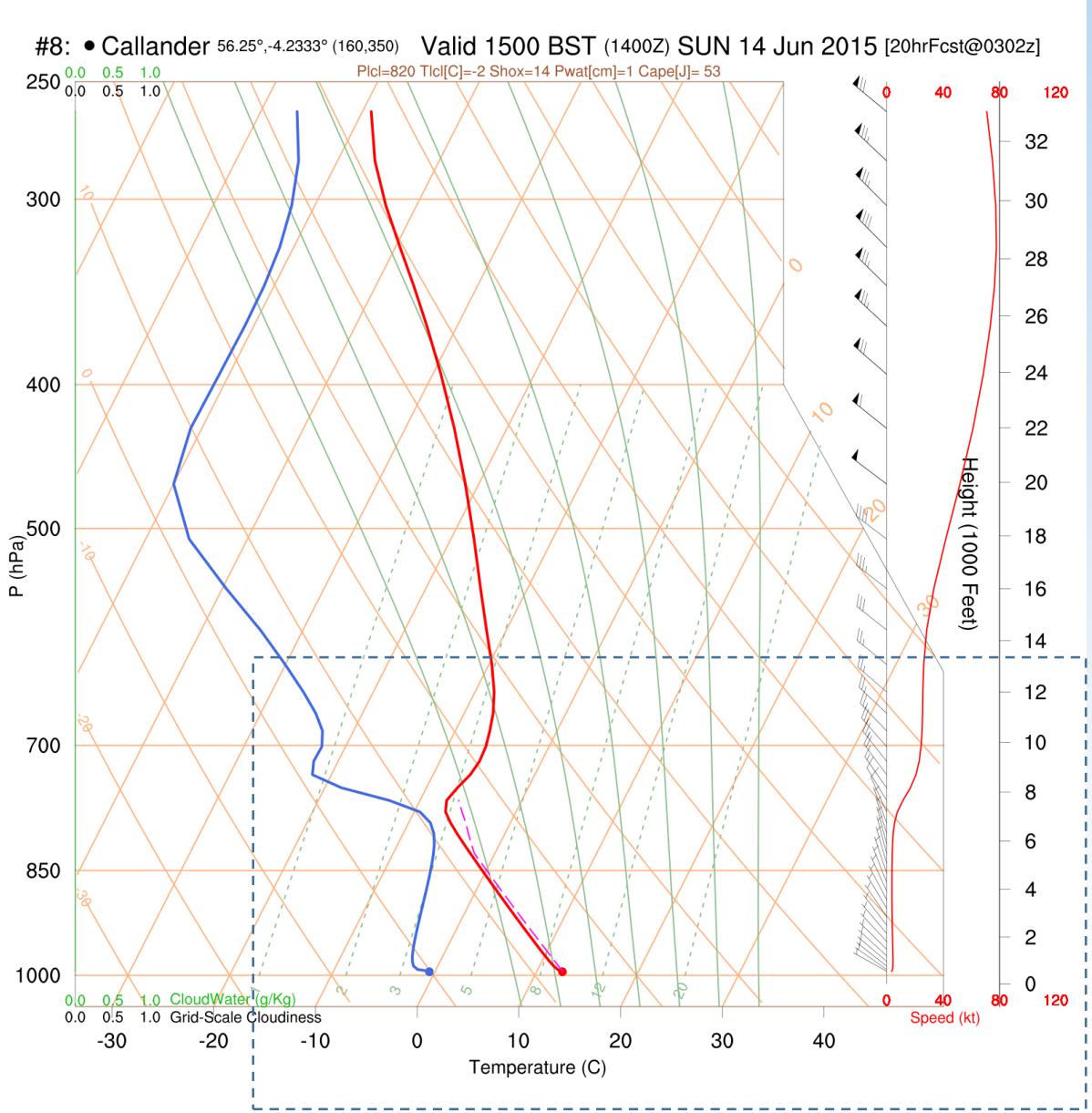
Regular wishing he was on the ground

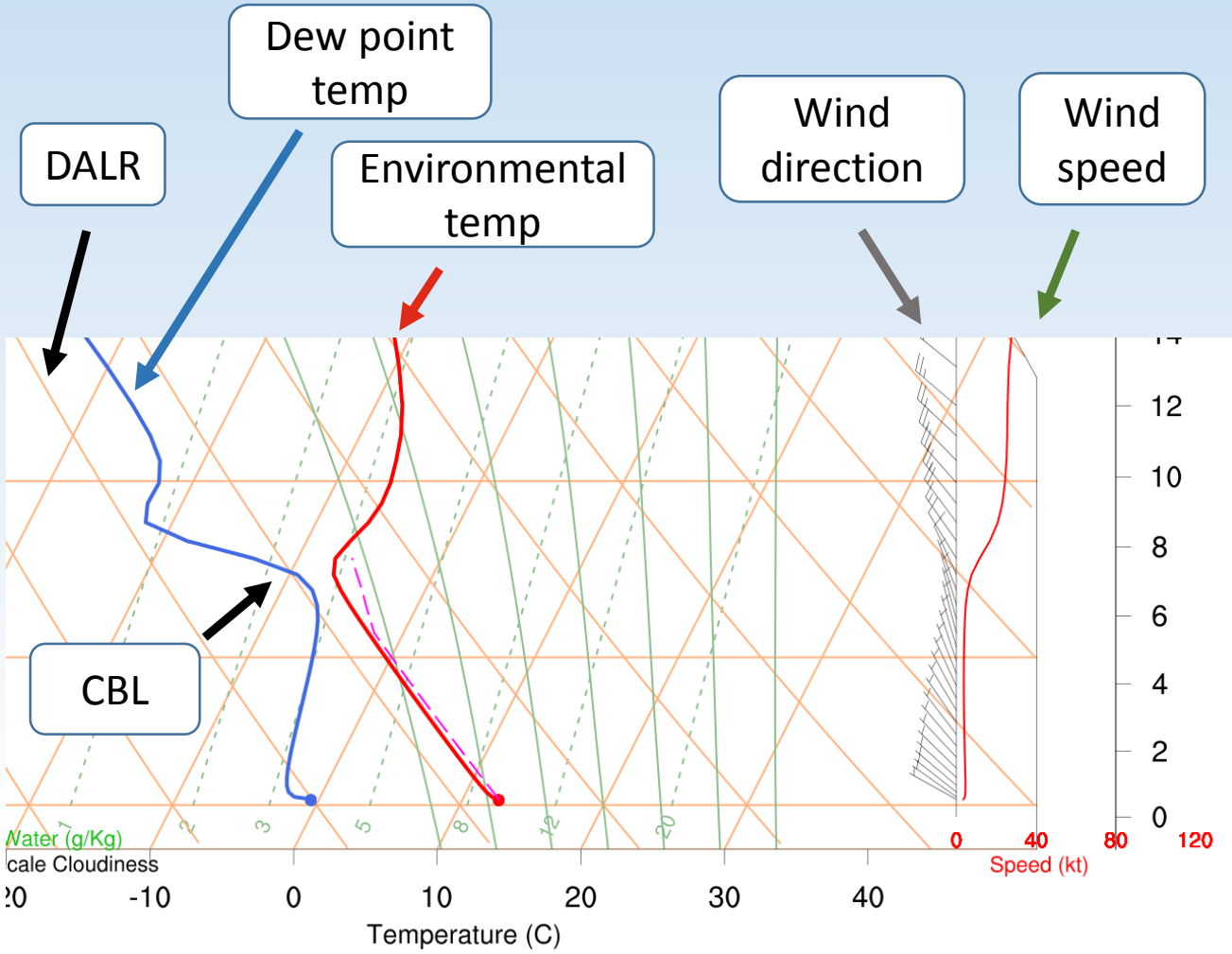


Using a sounding

Everything you want to know about the air mass…

- ✓ Stability
- ✓ Cloudbase height
- ✓ Inversions
- ✓ Wind speed & direction with height

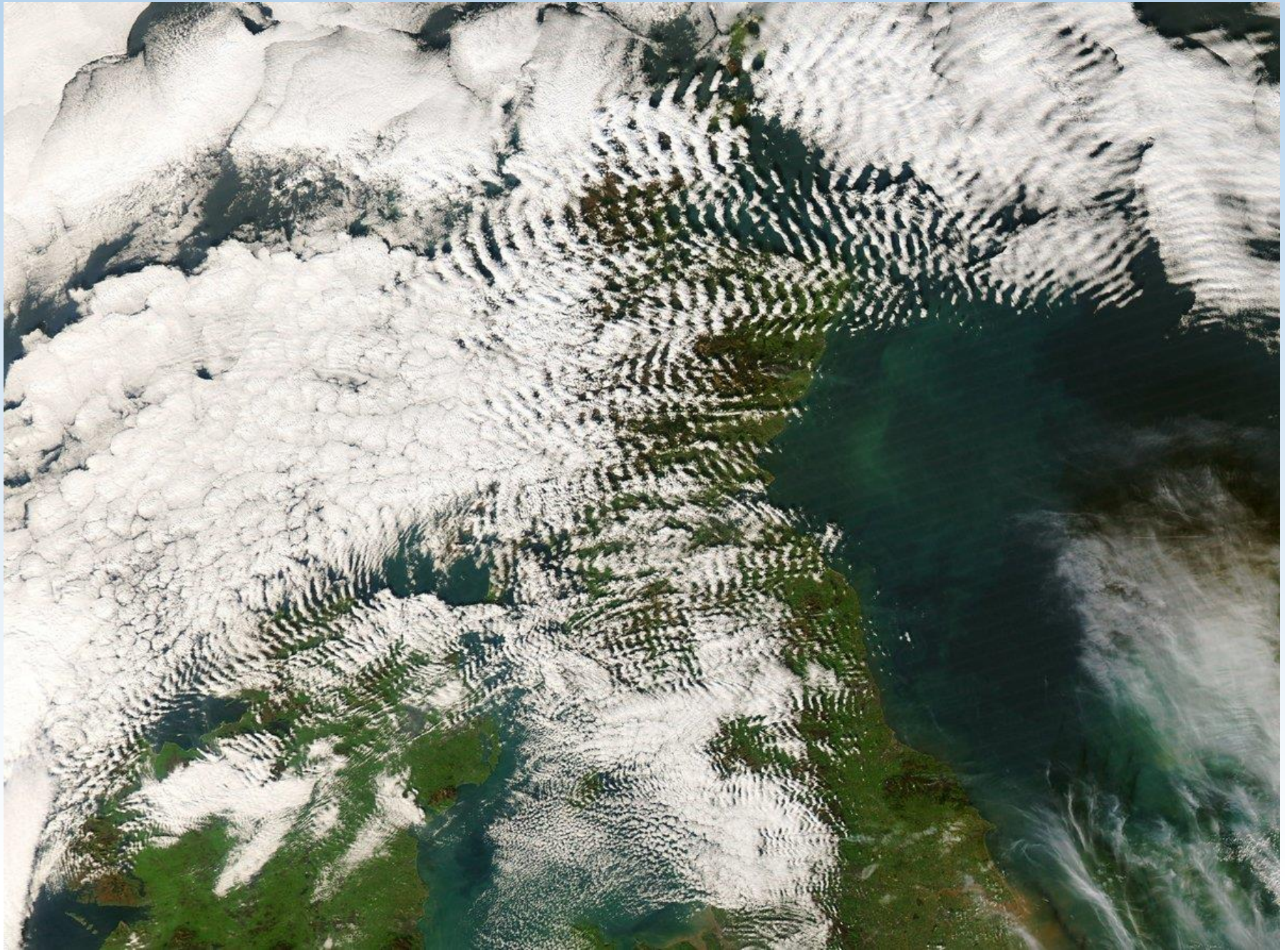




Soaring Theory & Tactics.

Wave

- Need unstable airmass and terrain for obstruction
- Propagates for huge distances



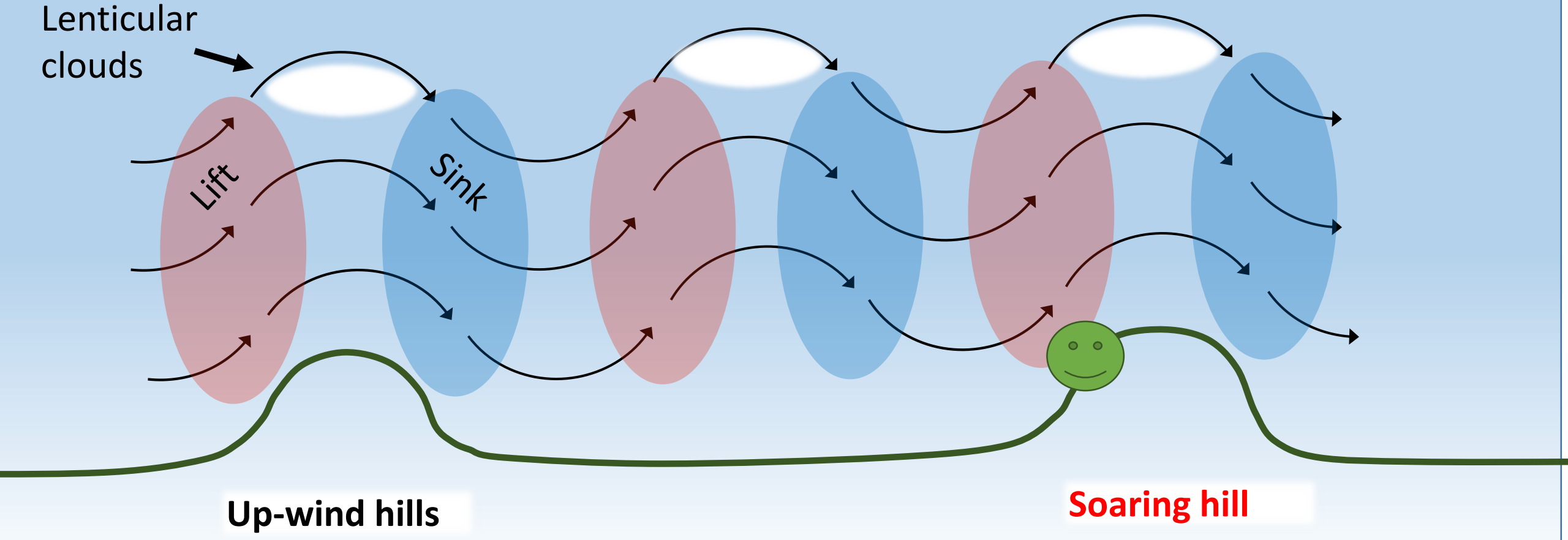
Wave

- Stationary clouds – no movement with wind
- Perpendicular to wind
- Variable wind on the hill: ~10-30min cycles


Wave bars

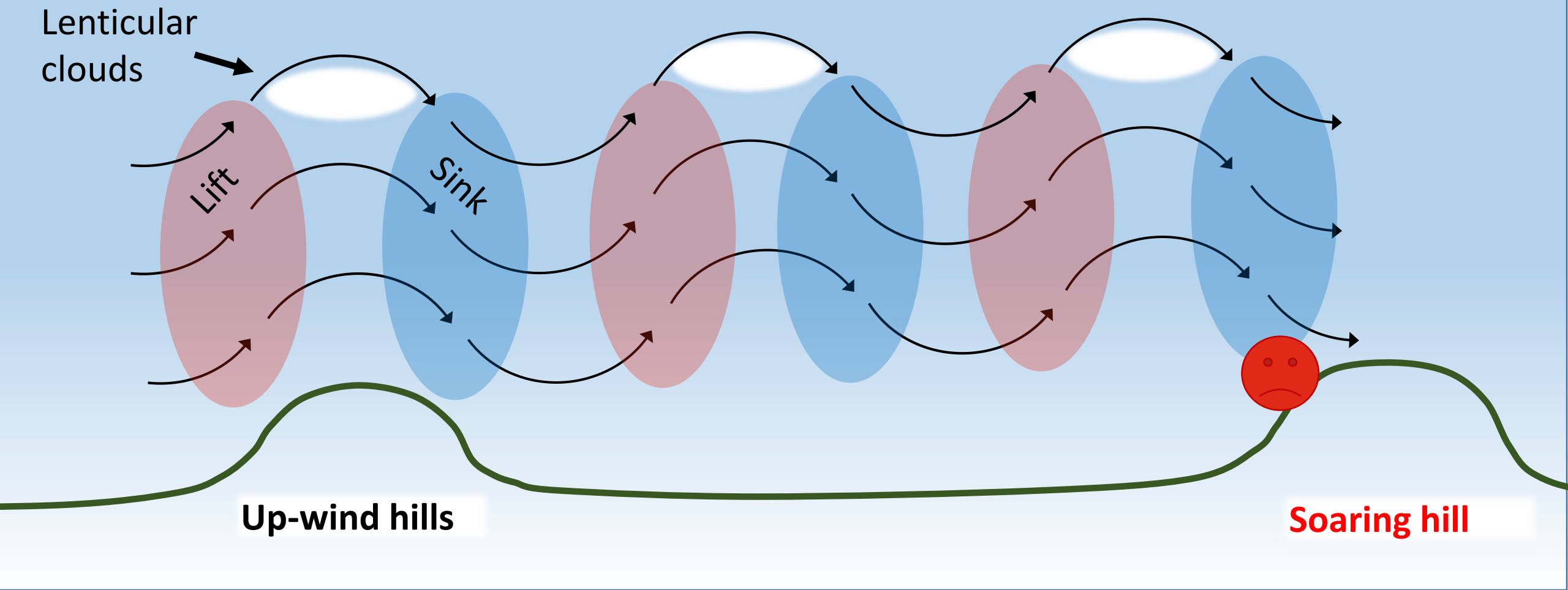
Wave: in-phase

- ✓ Improved lift for given wind-speed
- ✓ Soaring higher and further out than expected



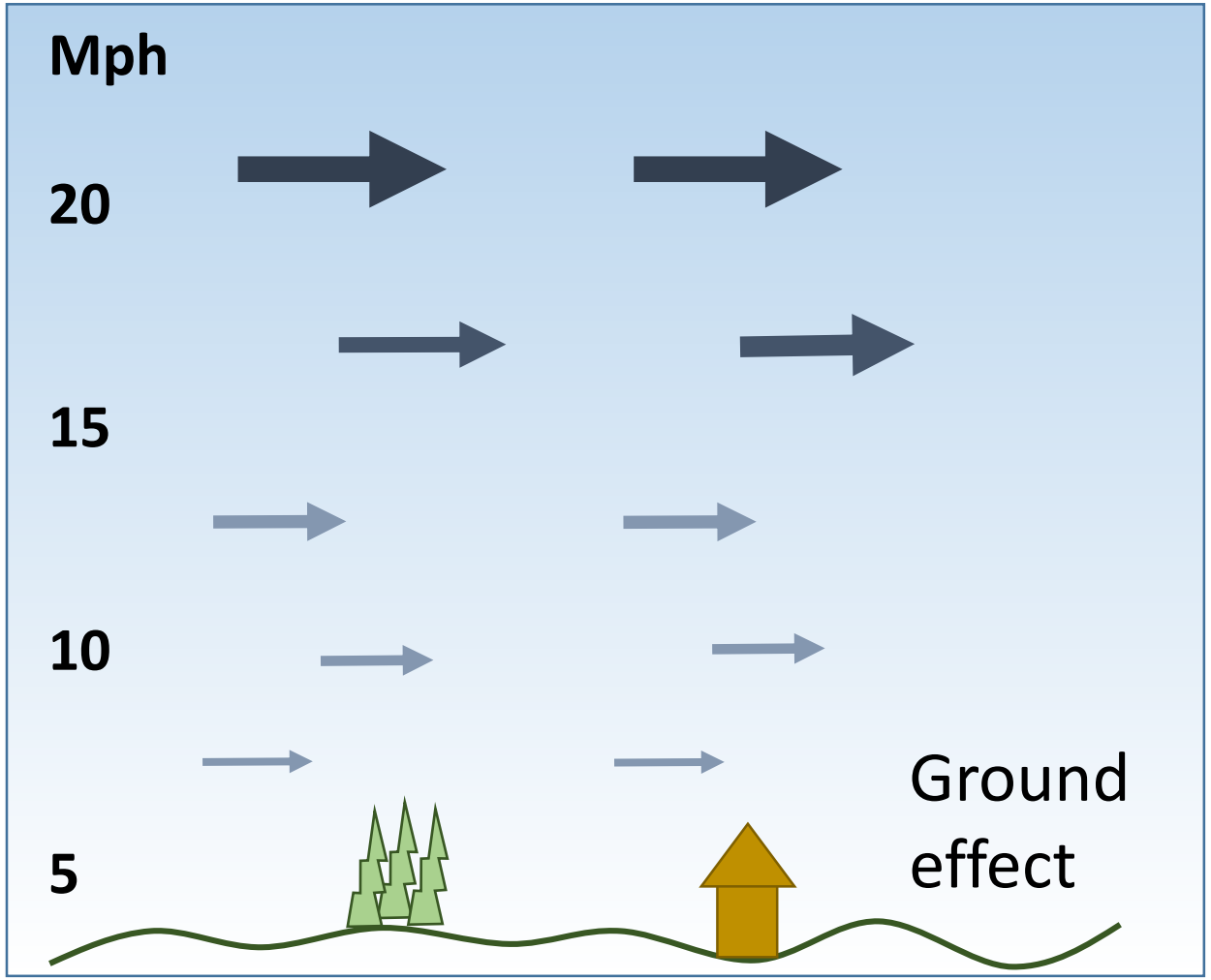
Wave: out-of-phase

- Reduced lift for given wind-speed
- Difficulty soaring higher and further out

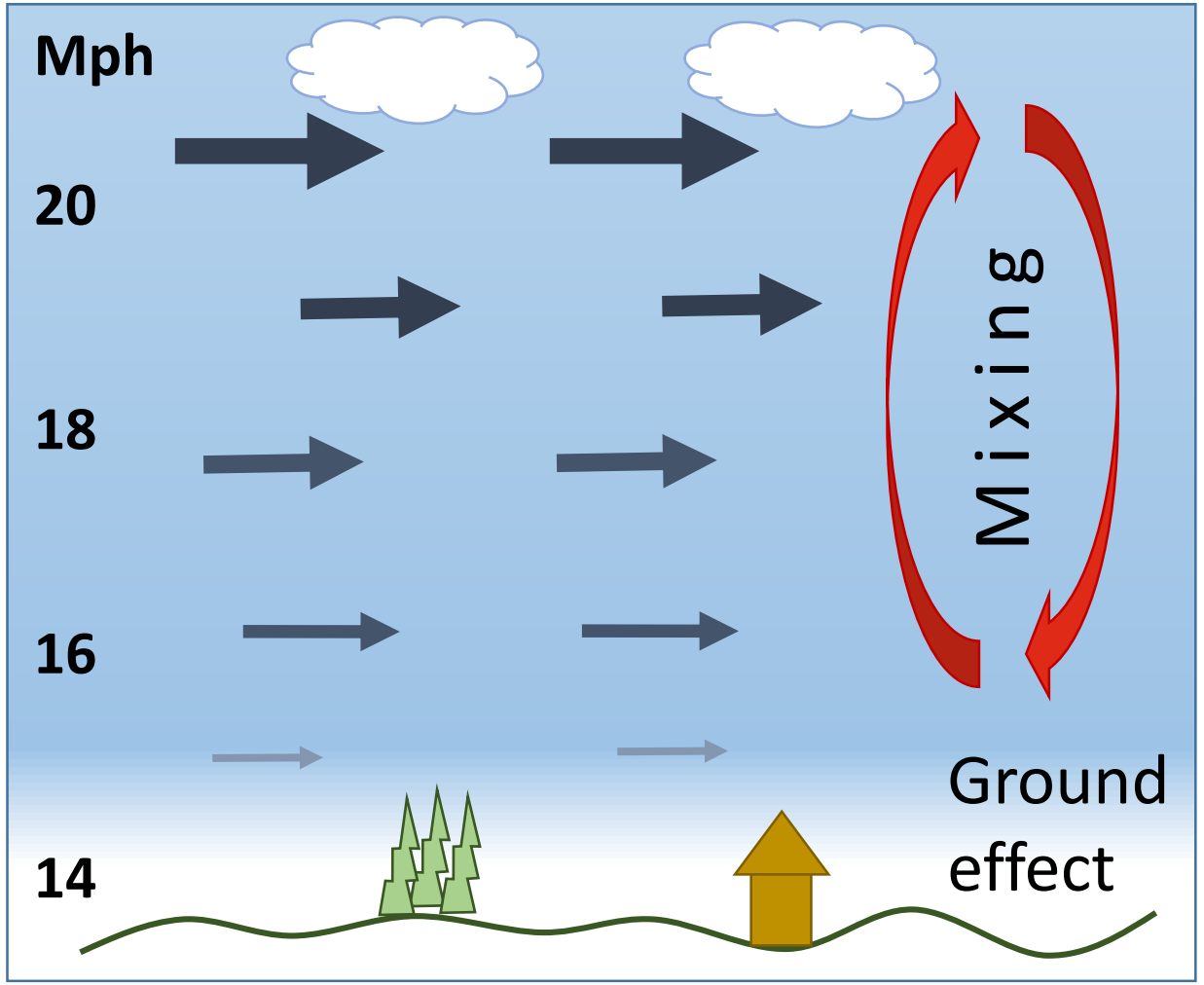


Wind gradient

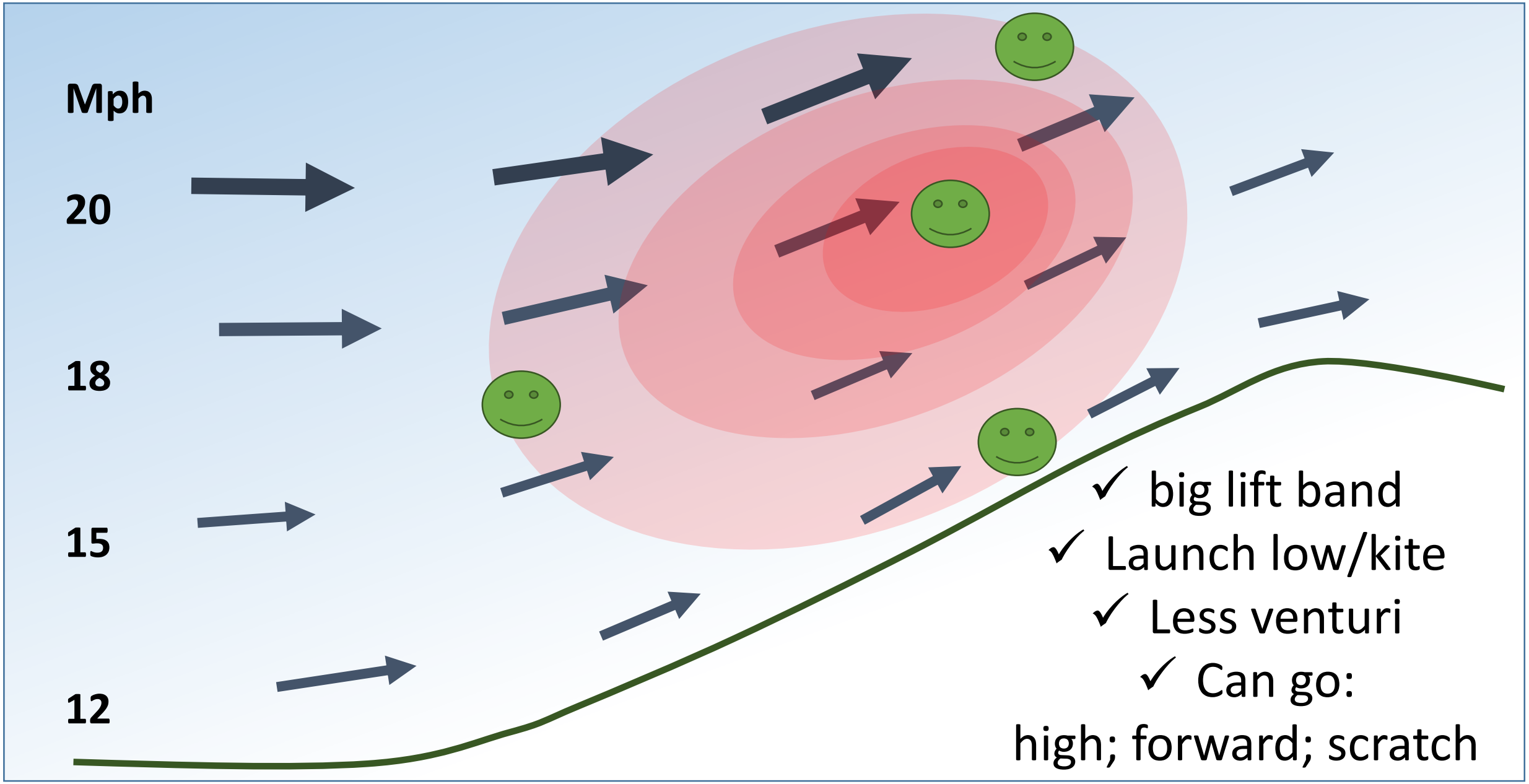
- Winter - Autumn
  - Late evening
- Stable/high pressure



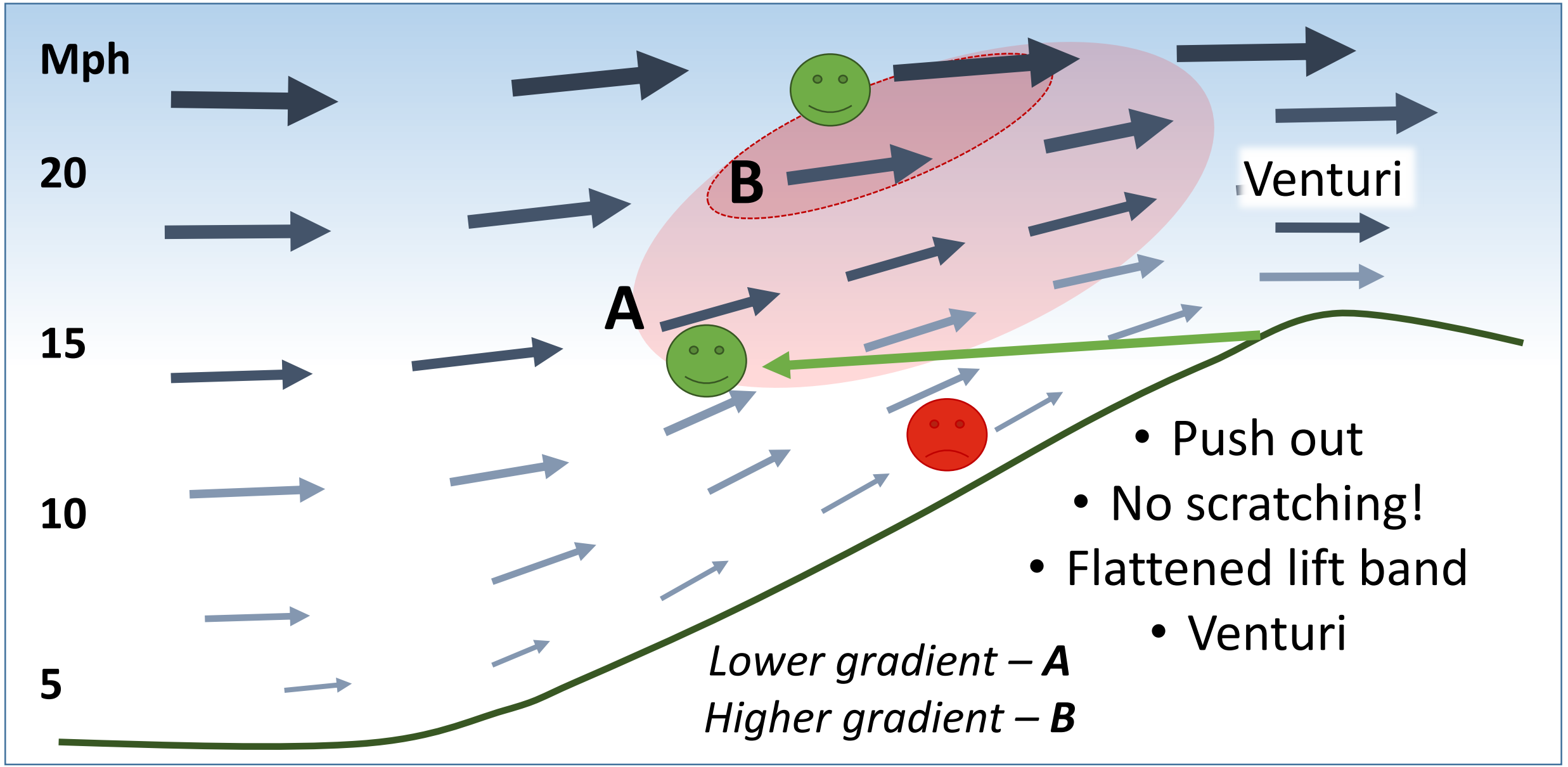
- Spring - Summer
  - Daytime
- Thermic/unstable



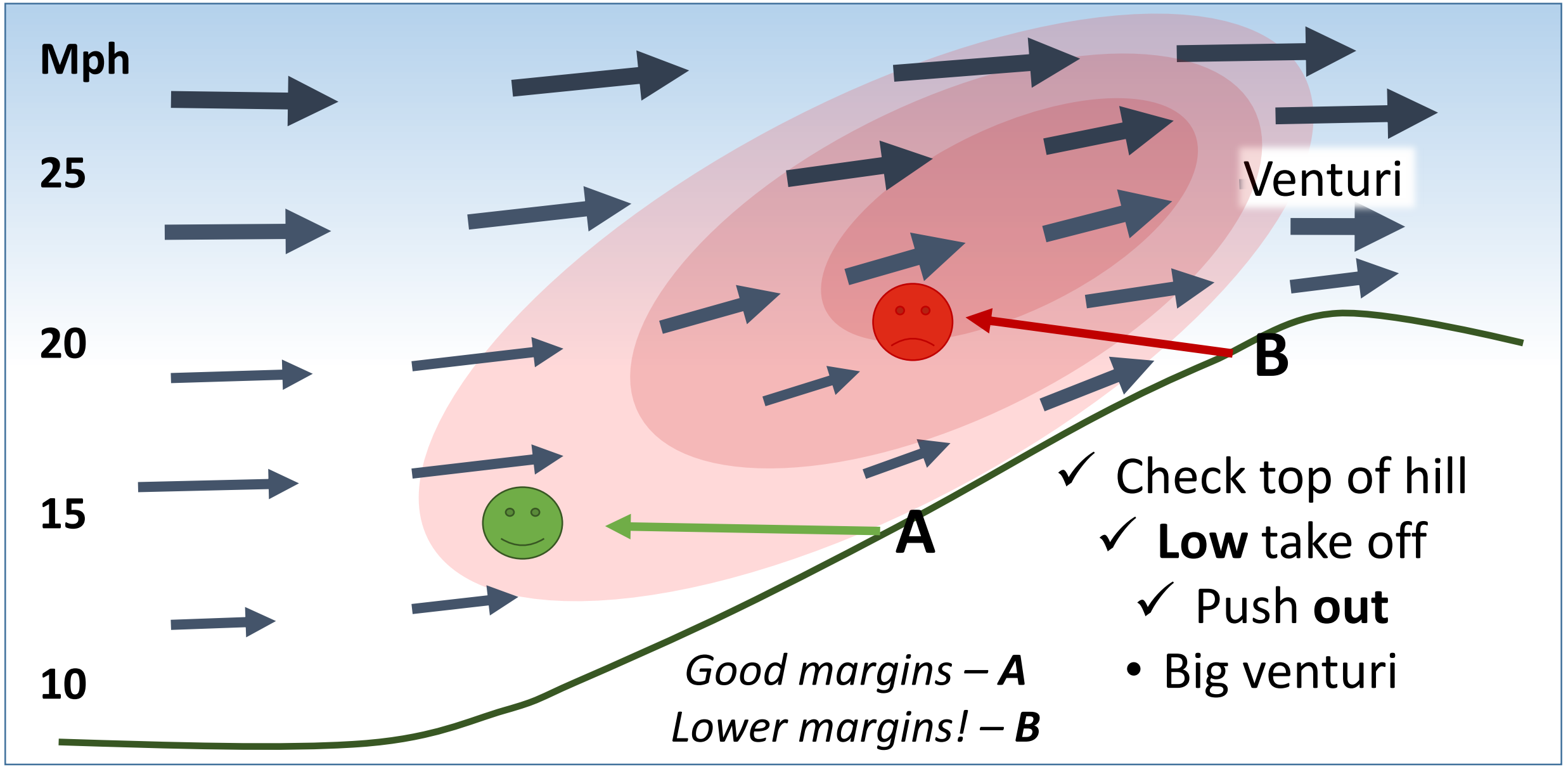
Lift with little wind gradient



Flying with wind gradient



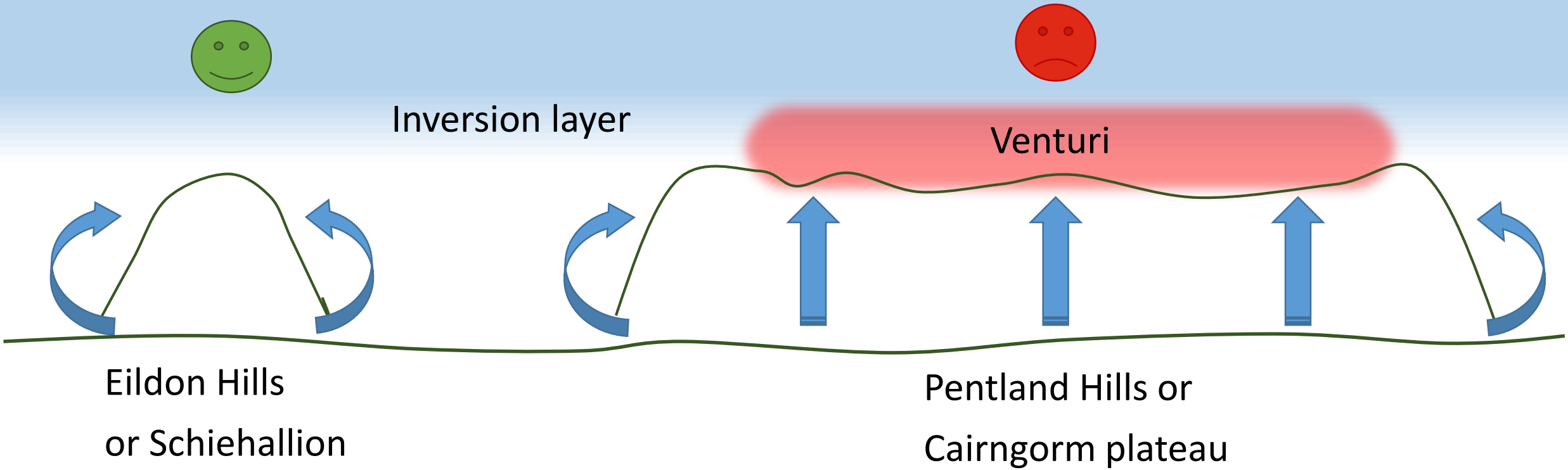
Flying in high wind (with gradient)



High wind gradient – fly isolated hills

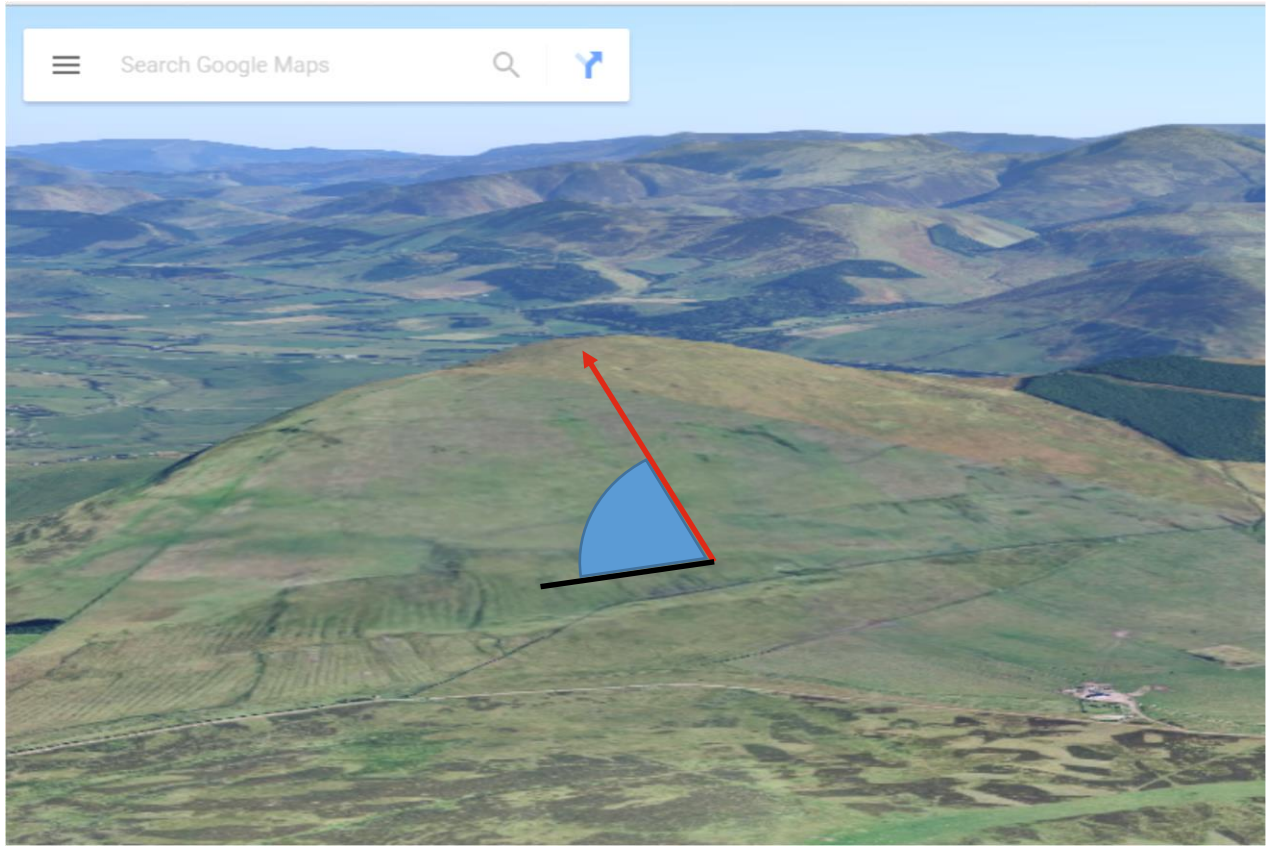
Choose isolated hills when inversions and stable air, i.e. winter.

- Isolated hill – air flows round the sides
- Plateau – air forced up against inversion so venturi.

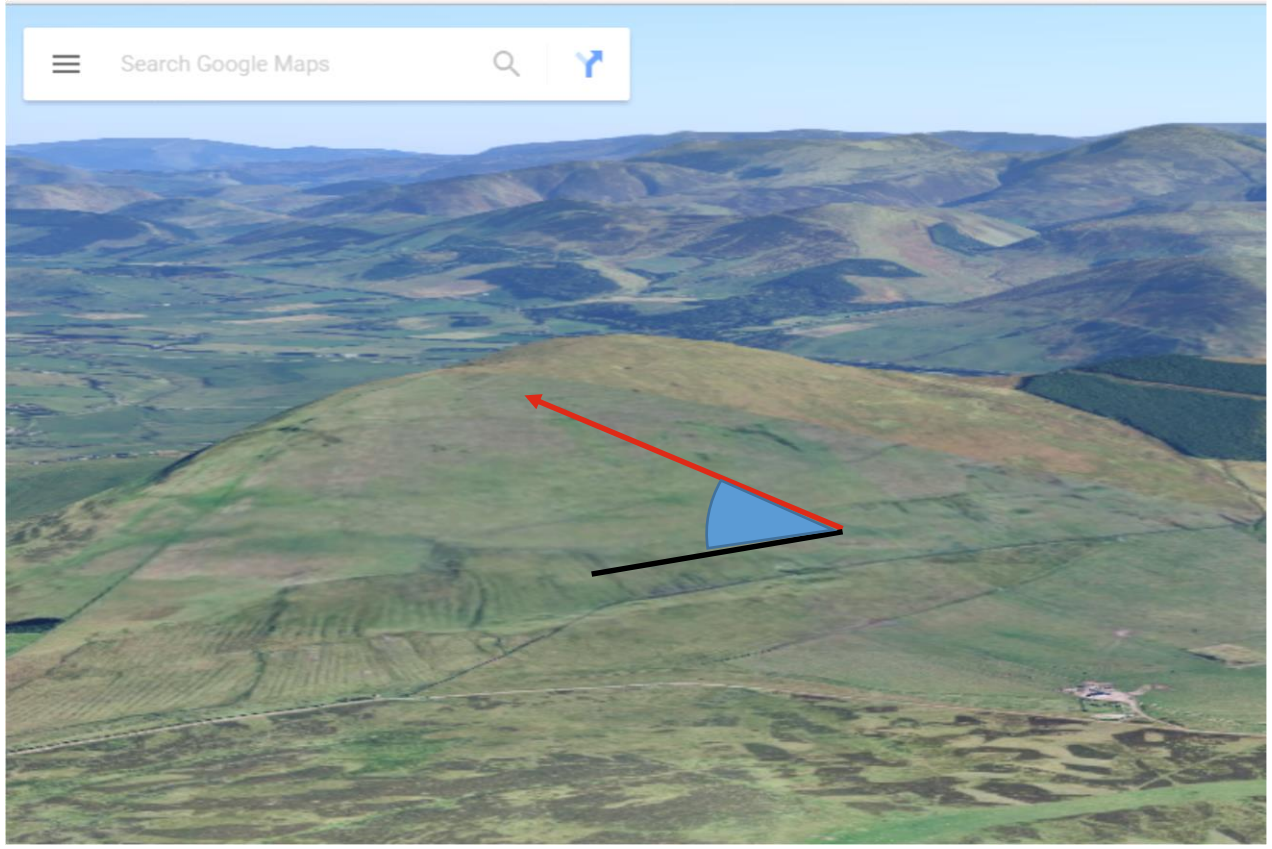


Wind direction: Effect on lift

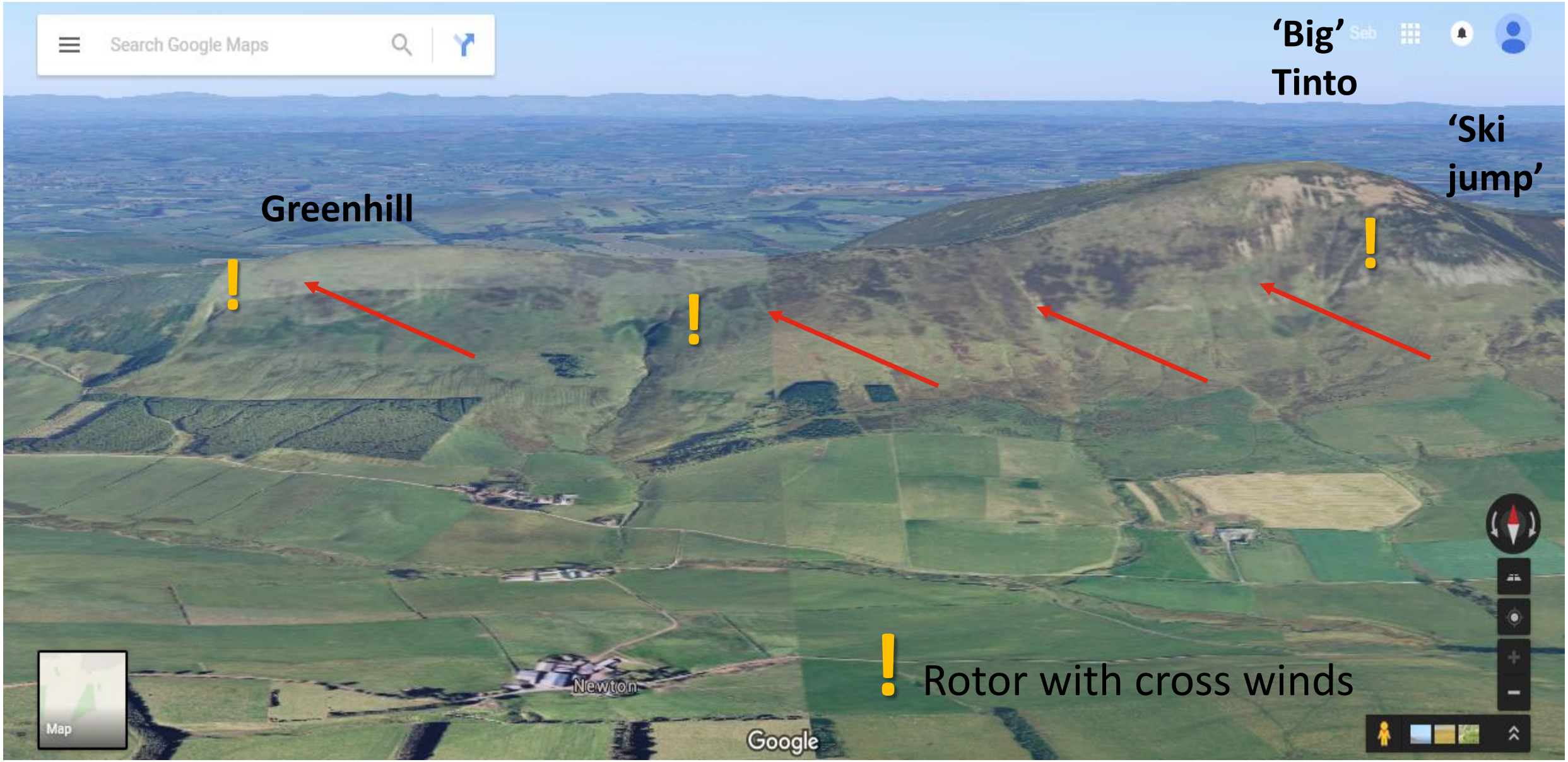
Directly up-slope = maximum lift



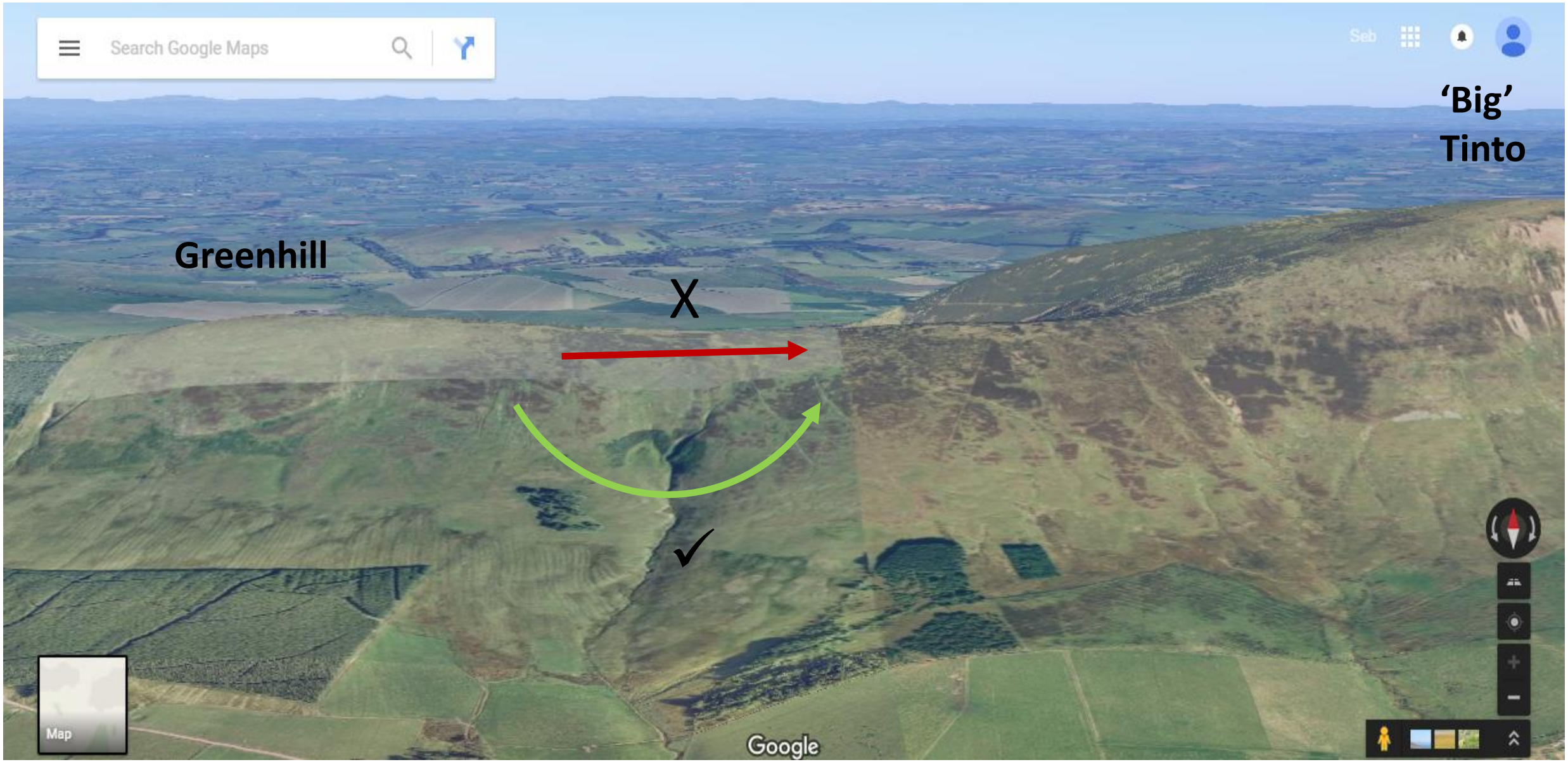
Across slope = reduced lift



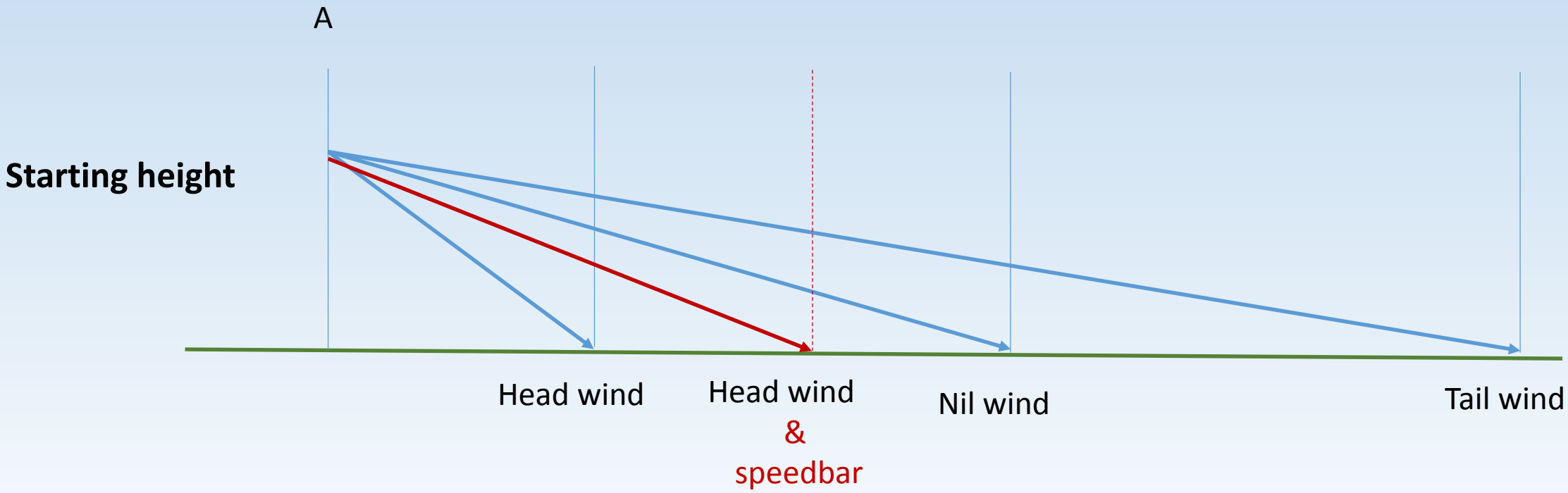
Crosswind and possible rotor



‘Valley/gully’ crossings to avoid venturi

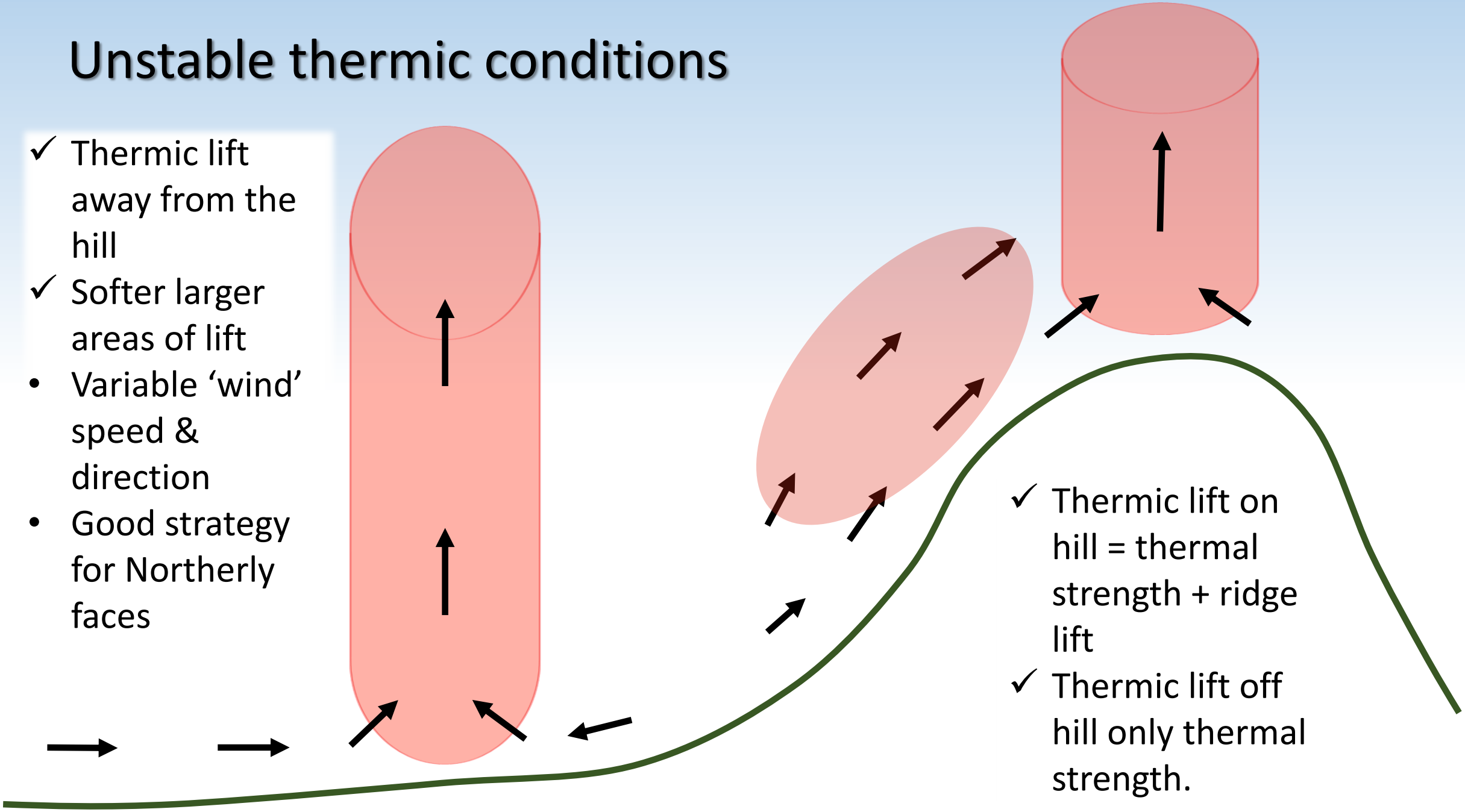


Flying speed in wind



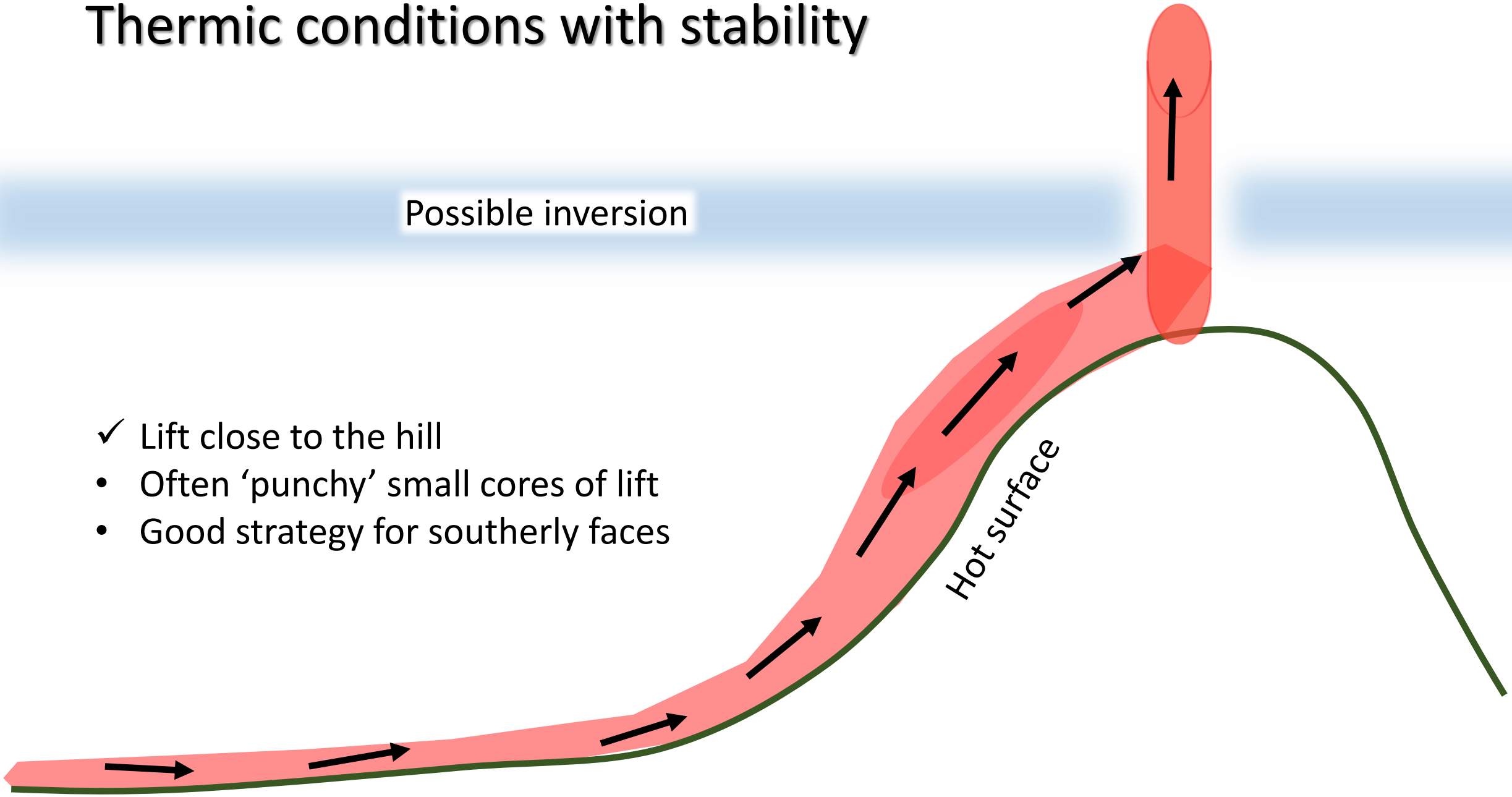
Unstable thermic conditions

- ✓ Thermic lift away from the hill
- ✓ Softer larger areas of lift
- Variable ‘wind’ speed & direction
- Good strategy for Northerly faces



- ✓ Thermic lift on hill = thermal strength + ridge lift
- ✓ Thermic lift off hill only thermal strength.

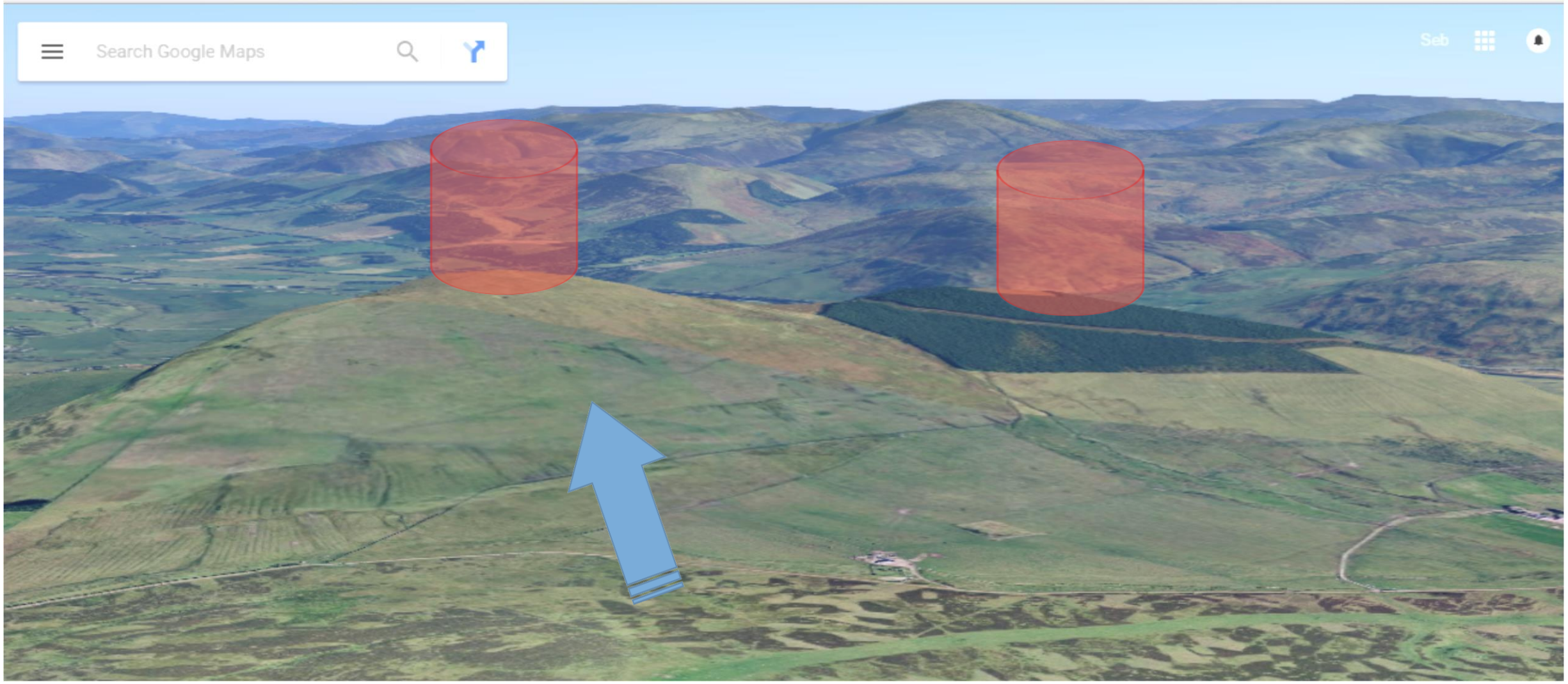
Thermic conditions with stability



- ✓ Lift close to the hill
- Often ‘punchy’ small cores of lift
- Good strategy for southerly faces

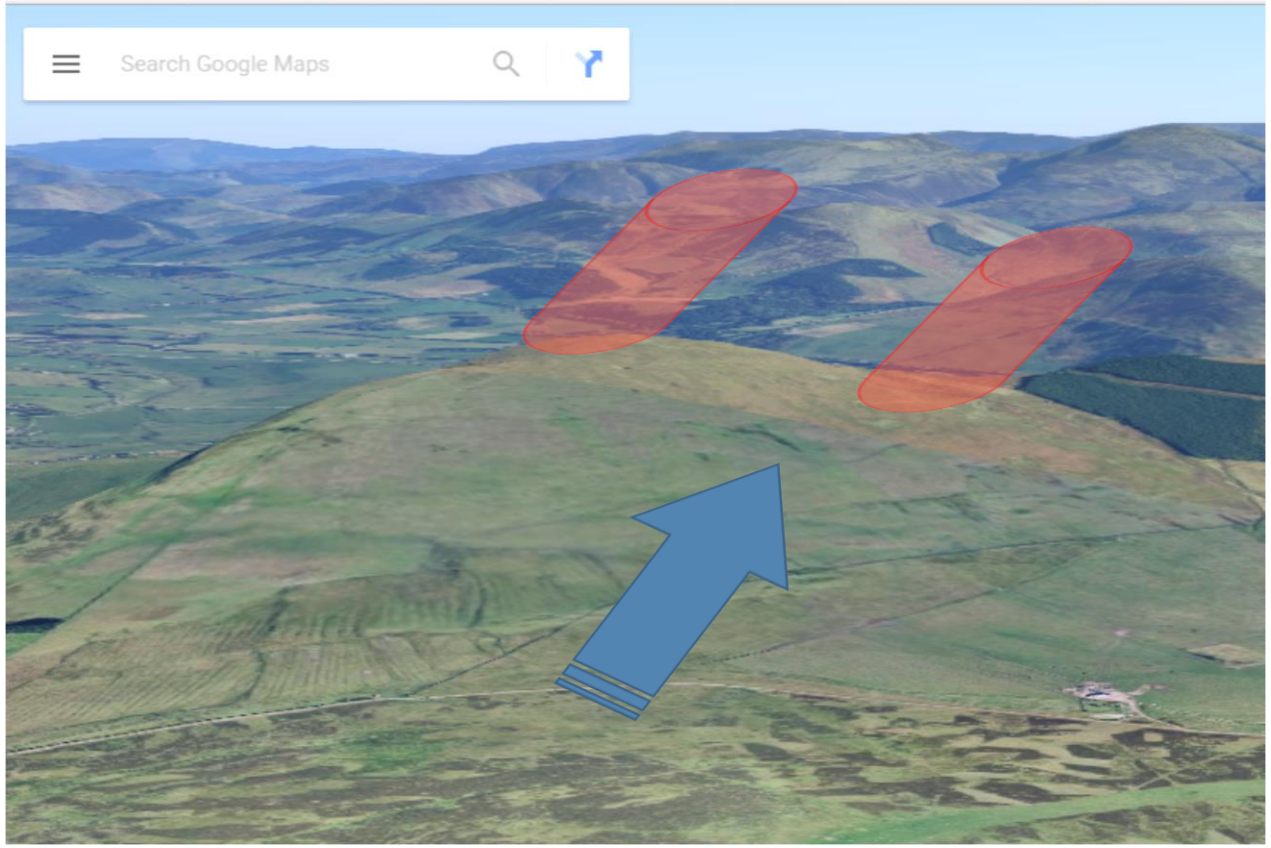
Ridge thermal trigger points

Wind directly on the hill

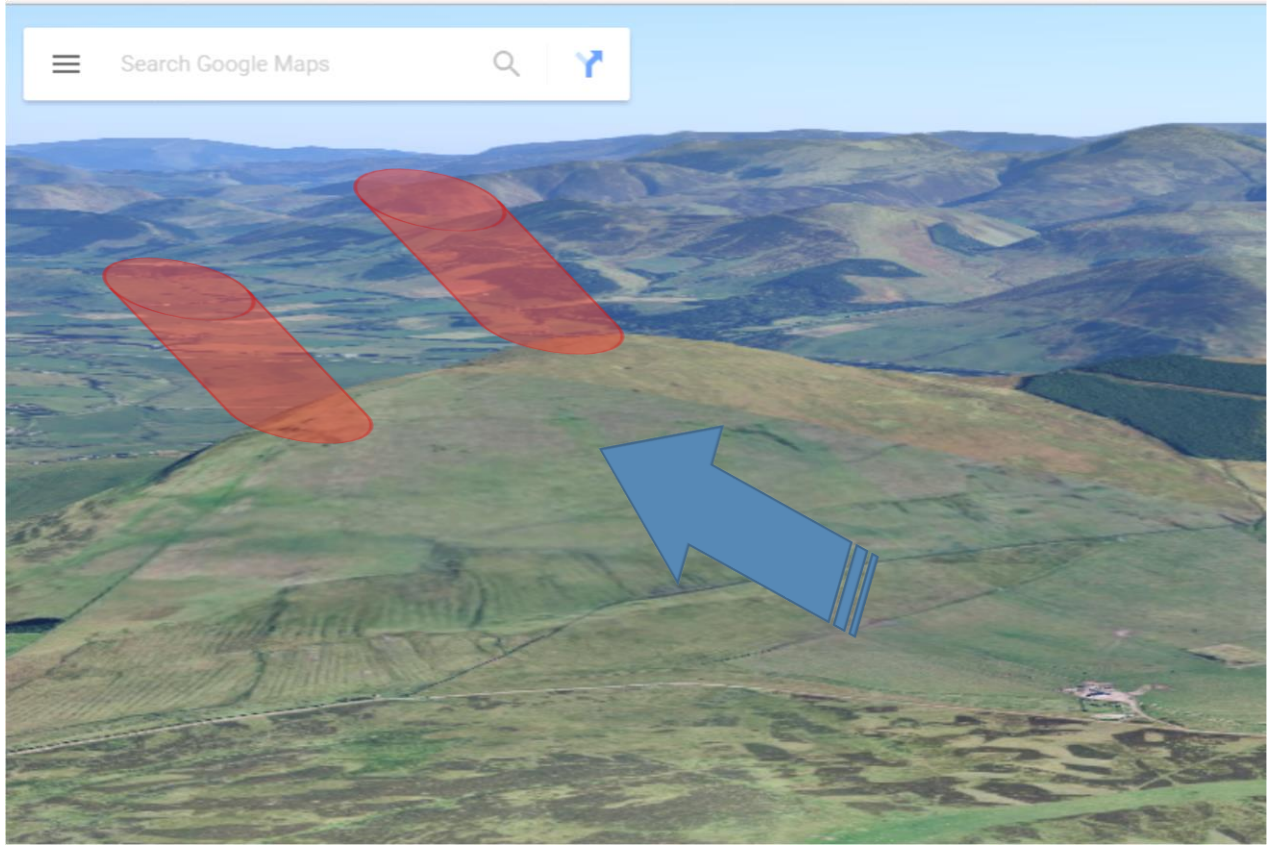


Ridge thermal trigger points: offset wind

Wind favour to the north



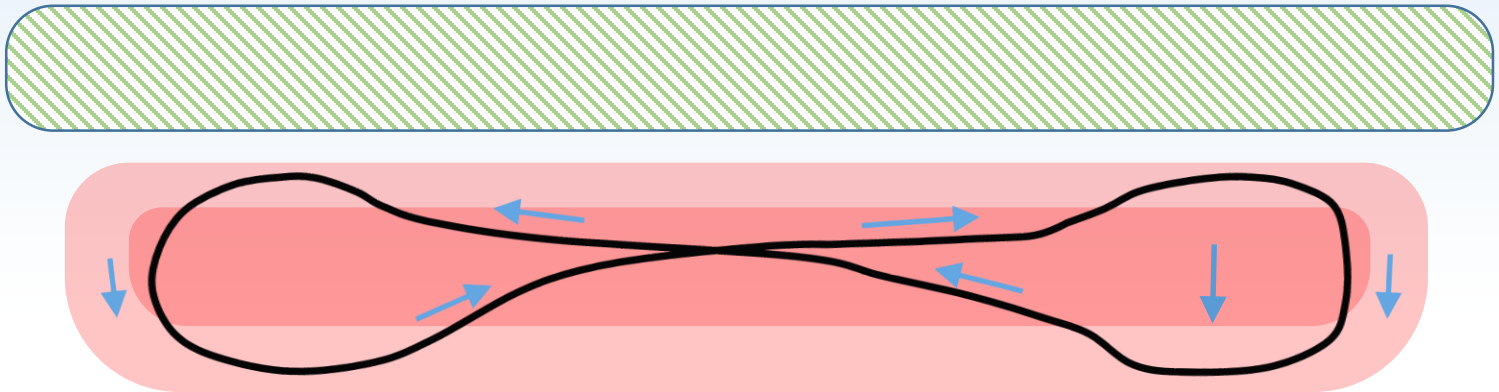
Wind favour to the south



Flying theory

Turning:

- Turns use height so…
  - ✓TURN IN LIFT!
  - ✓Less turns, longer beats
  - ✓Weak lift, flat turn
  - ✓Strong thermic lift, tighter turn
  - ✓Out from hill & thermic, 360s
  - ✓Ridge lift, 180s optimal



Turning to stay in strongest part of lift band for longer

Air speed:

- Based on laws of Polar curve…
  - ✓Faster in sink
  - ✓Slower in lift
    - ✓(but more speed is safer, careful!)
  - ✓Speed into wind
  - ✓Min sink downwind
  - ✓Pitch control, keep wing above you for efficient glide.

Flying theory…cont.

Positioning:

- Fly/turn over best lift…
  - ✓Areas up slope wind steepest
  - ✓Back of bowl if light
  - ✓Side of bowl if thermic
  - ✓End or top of ridge if thermic
    - -or change of topography
  - ✓Middle of ridge if only dynamic
  - ✓Use thermic bubbles, turn in them!
  - ✓Unstable, head out from ridge
  - ✓Stable keep closer, but be careful
    - -unpleasant punchy conditions
  - ✓Away from trees day, over them late eve
  - ✓Stay up high in late eve
  - ✓Stay in strongest part of lift band

Flying theory…cont.

Other tips:

- ✓If something is not working, try something different!
- ✓Zero on the vario is lift
- ✓Use vario averager: 20-30sec
- ✓Just a TBB? Make it better by flying less sinky areas
- ✓If terrain allows kite, you will know conditions better before launching
- ✓Don’t stop learning or questioning!

Still learning in Pakistan!

Flying safely.

Margins

Keep margins **big…**

- ✓ Availability of numerous options
- ✓ Distance & time from problems- think well ahead

Small margins…

- Closer to problems
- Fewer options

Keeping good margins

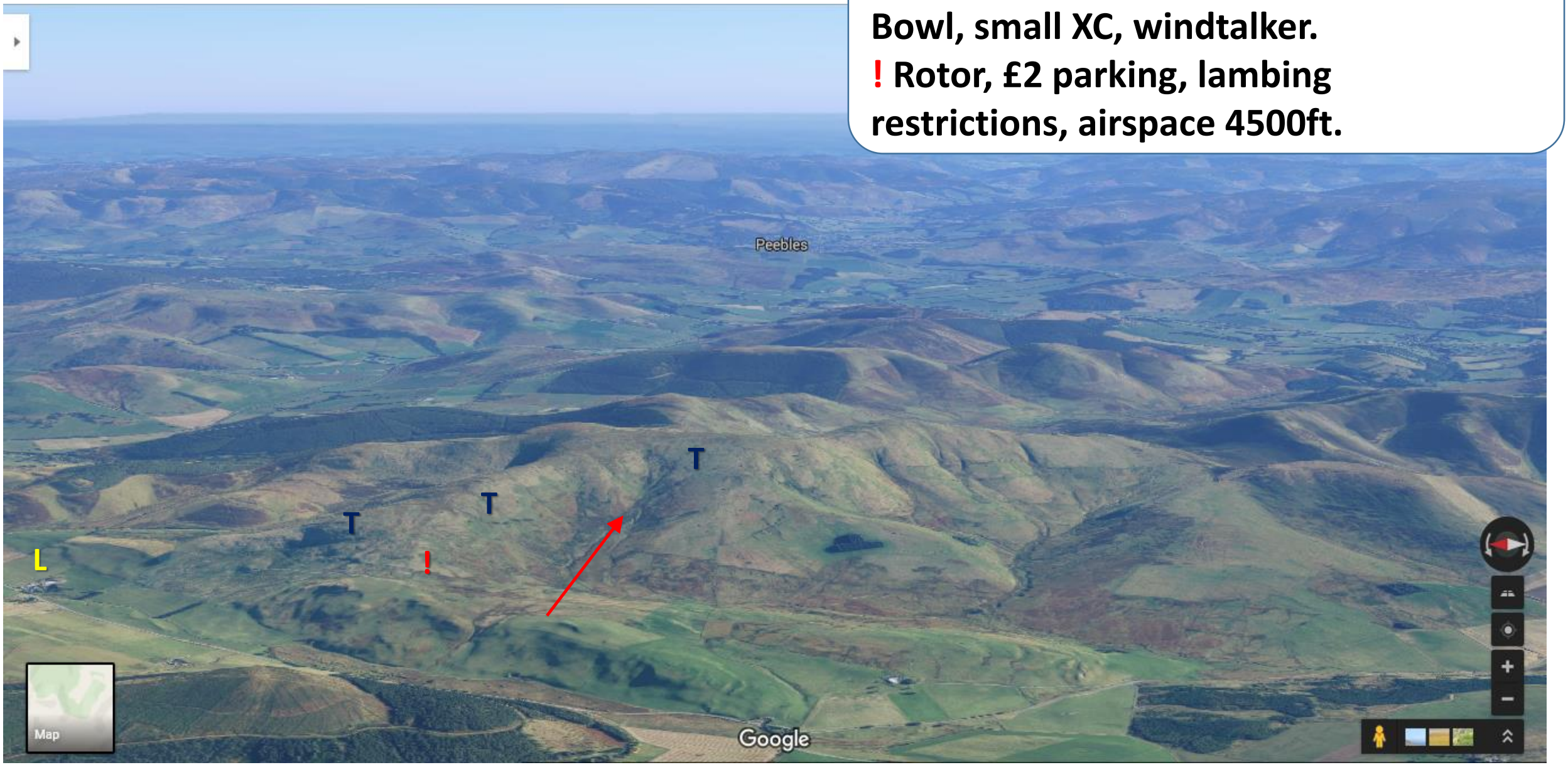
1. Conditions NOW and LATER?
2. Is equipment checks?
3. Best take-off?
   - Height and position on hill
   - Dragging zone
   - Optimal flight path
   - Can I mess up my launch?
   - Rotor
4. Monitor conditions…all the time!
5. Am I safe to scratch or not?
6. Landing
   - Wind direction – maybe not same as launch
   - Rotor?
   - Power lines, ditches?
   - No low turns


WINDSTOPPER

Local flying sites.

Broughton

<u>West, southwest, northwest.</u>
Bowl, small XC, windtalker.
! Rotor, £2 parking, lambing restrictions, airspace 4500ft.

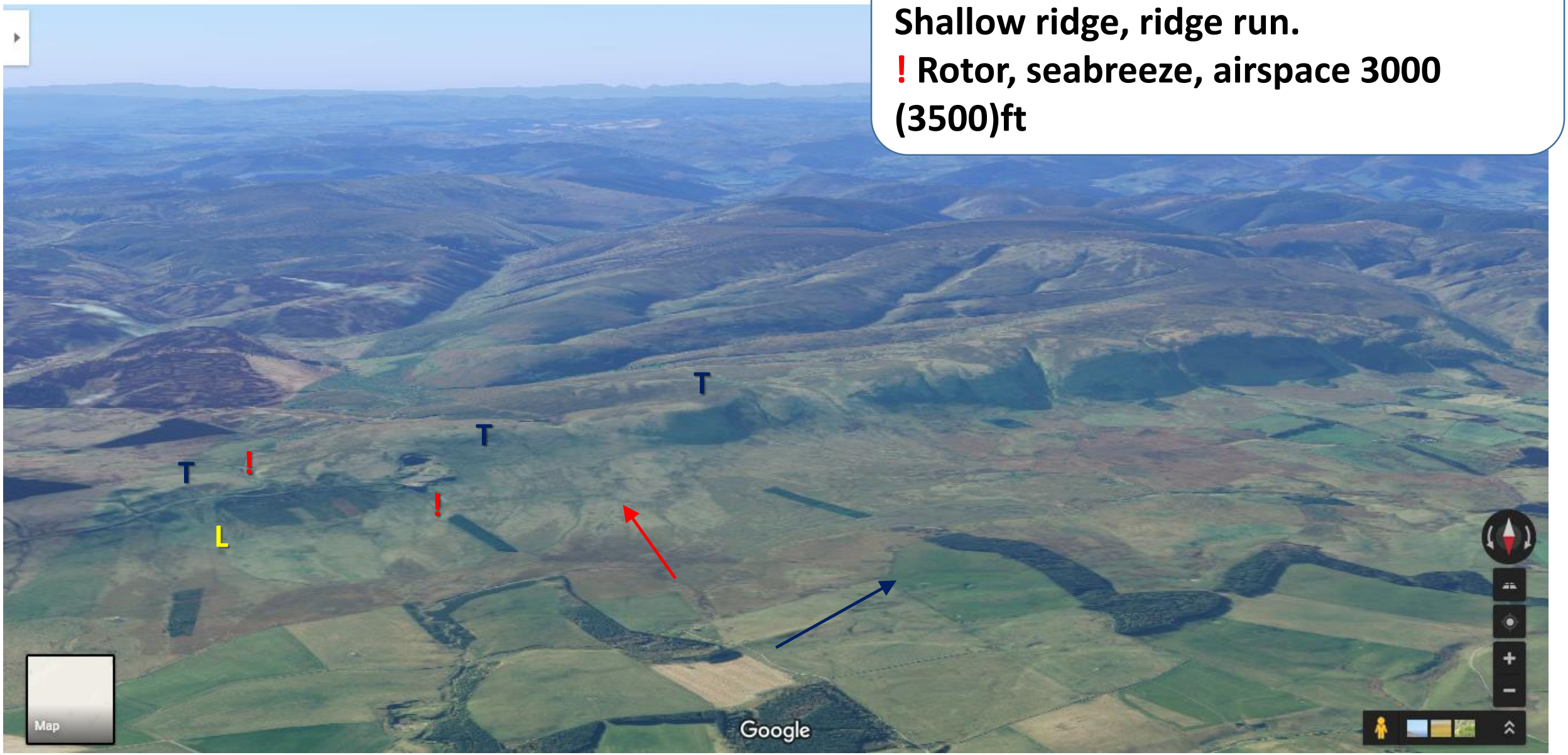


Moorfoots

Northwest.

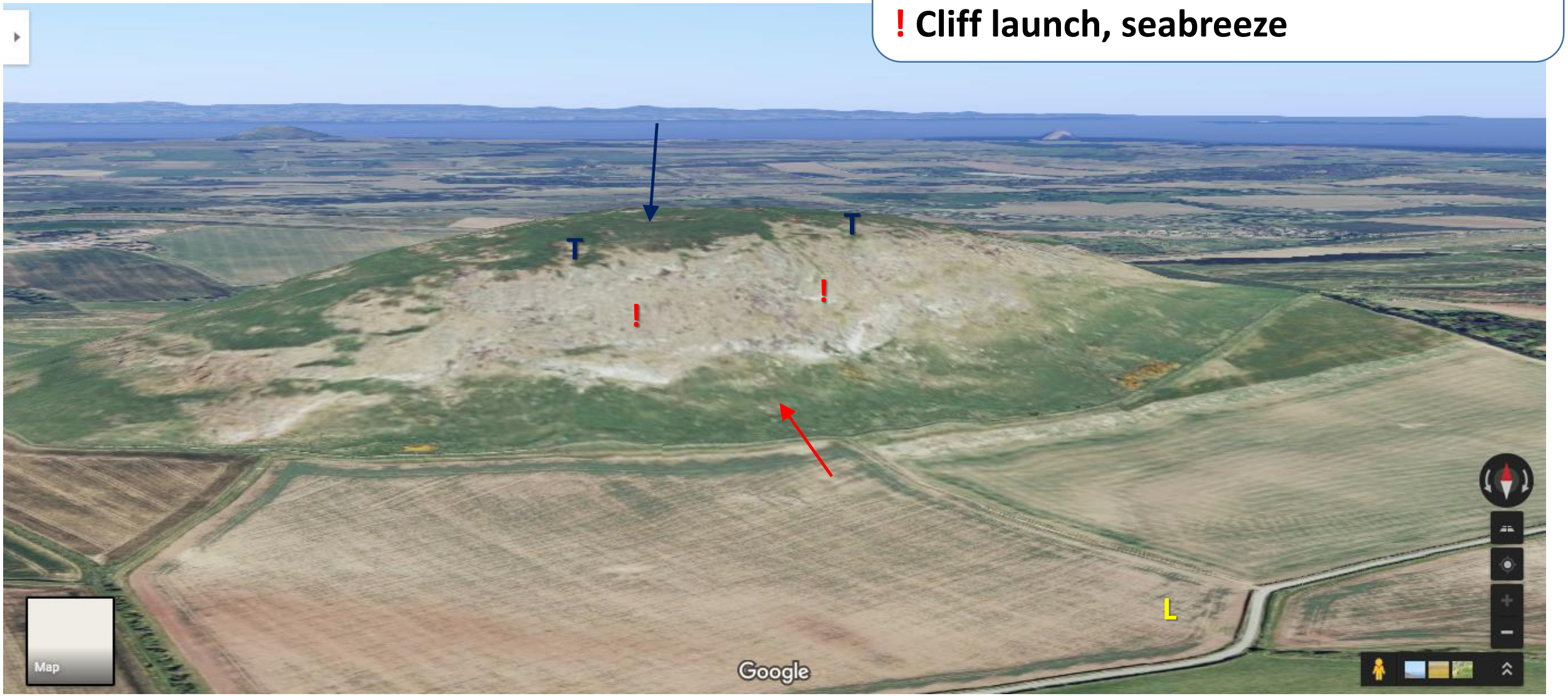
Shallow ridge, ridge run.

! Rotor, seabreeze, airspace 3000 (3500)ft



Traprain Law

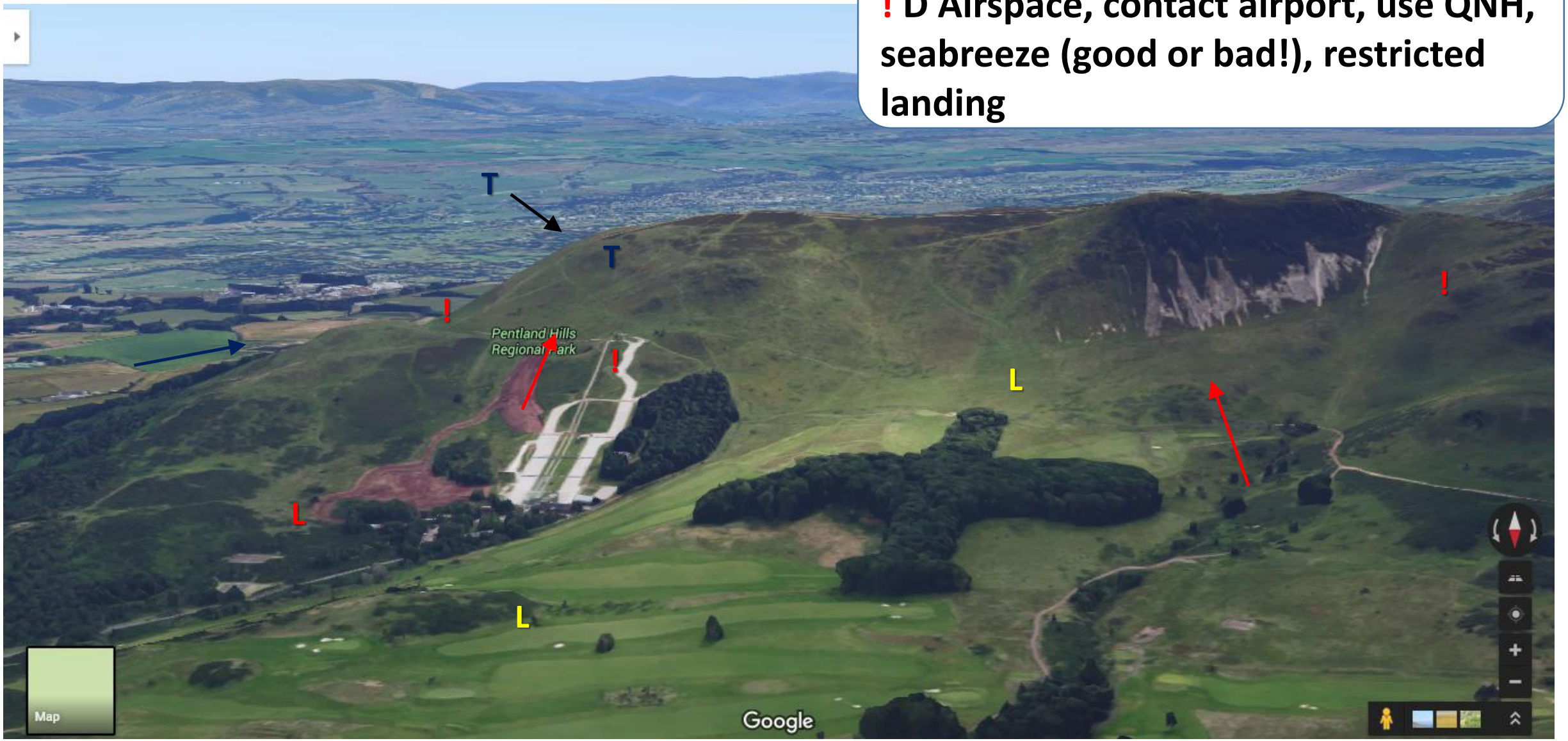
<u>Southeast, west, northwest?</u>
Steep cliff.
! Cliff launch, seabreeze



Hillend

<u>Southeast, northwest, north.</u>

! D Airspace, contact airport, use QNH, seabreeze (good or bad!), restricted landing

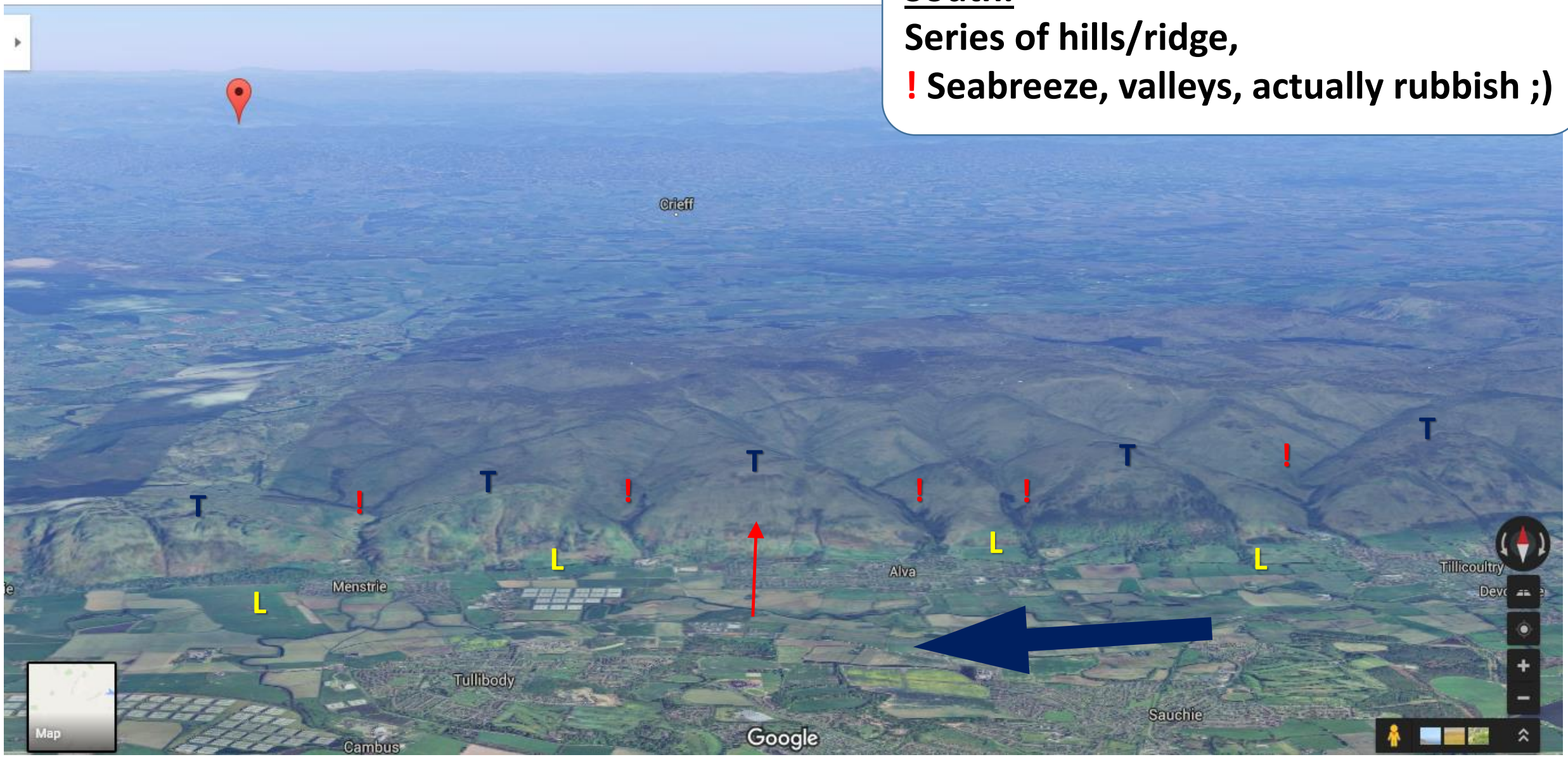


Ochils

South.

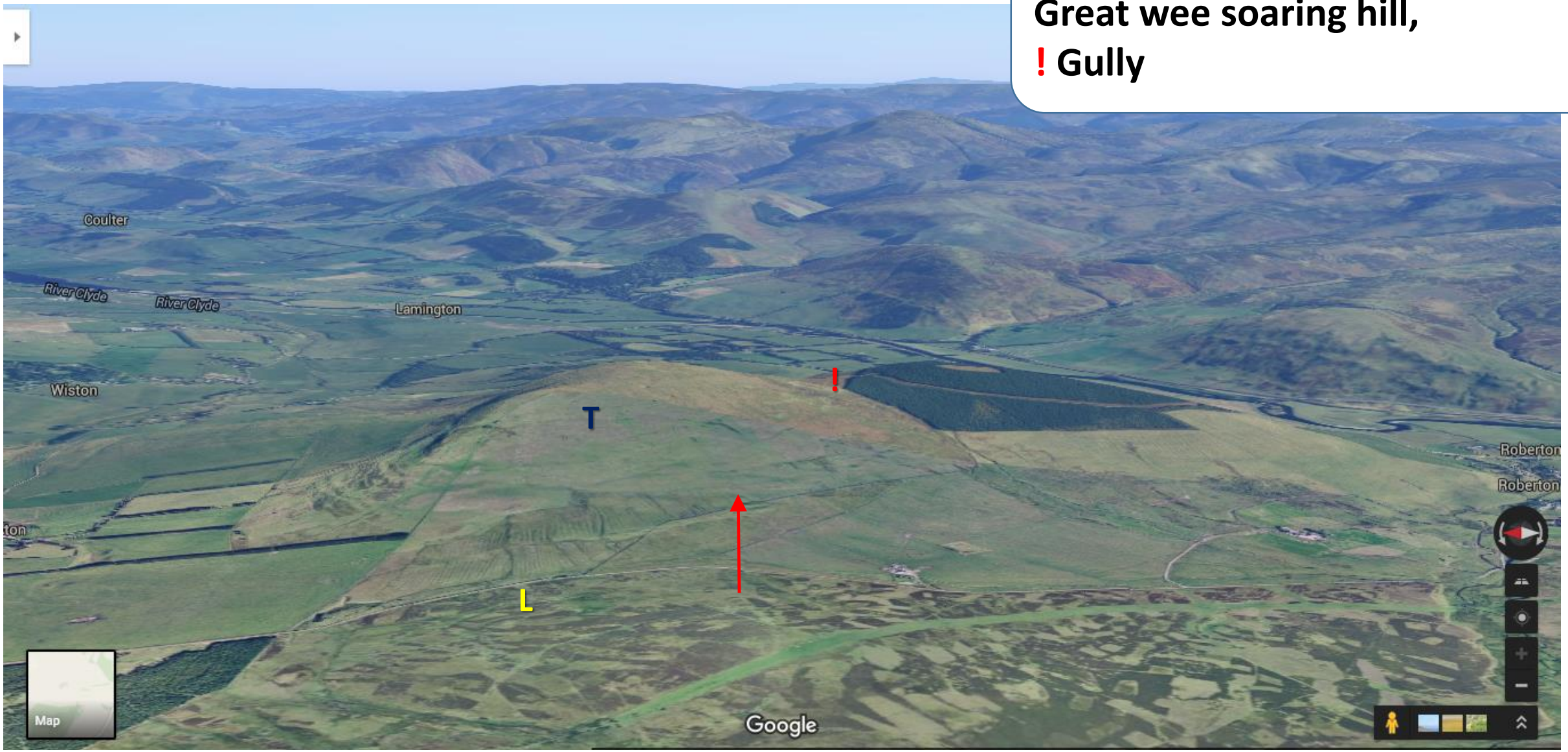
Series of hills/ridge,

! Seabreeze, valleys, actually rubbish ;)



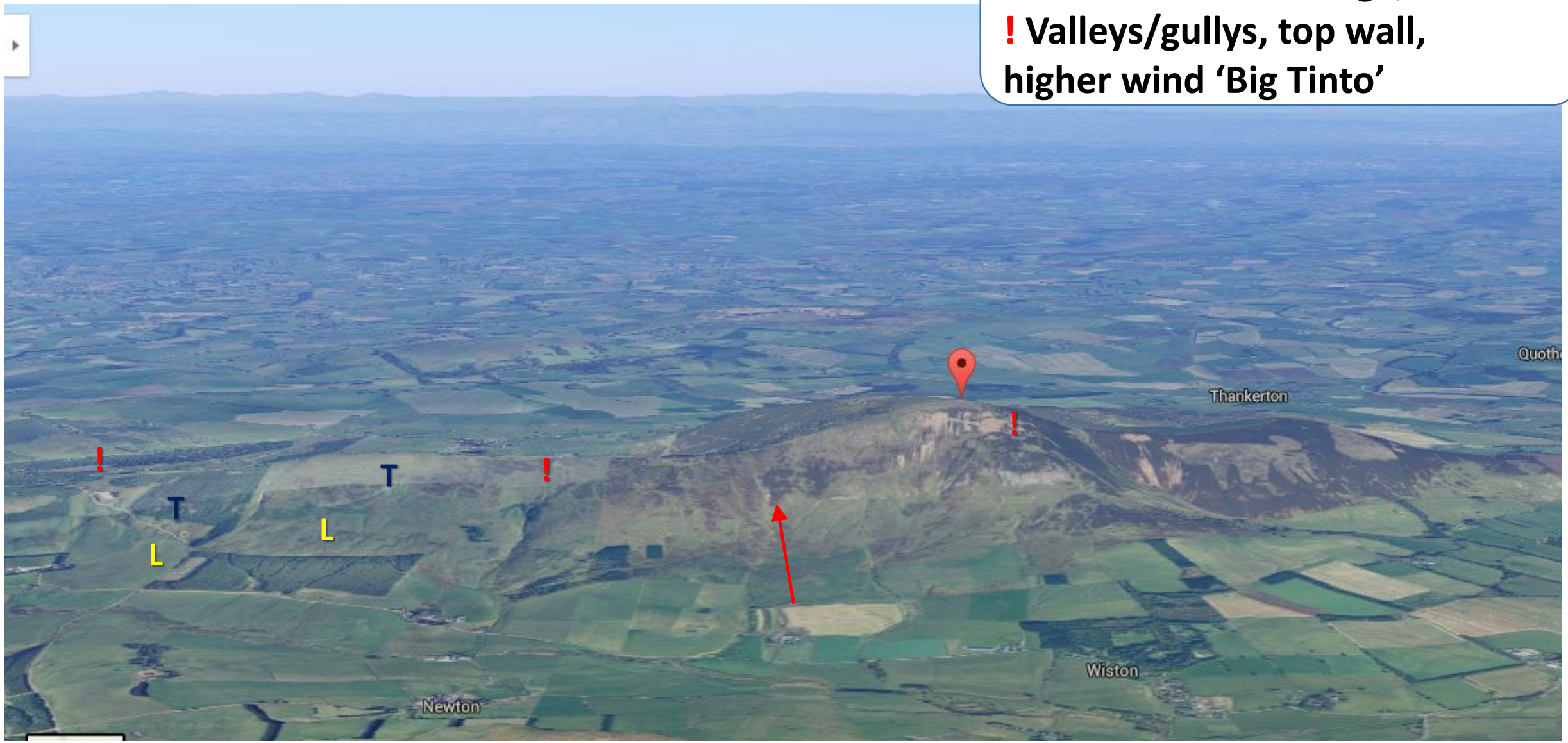
Dungavel

<u>West, southwest.</u>
Great wee soaring hill,
! Gully

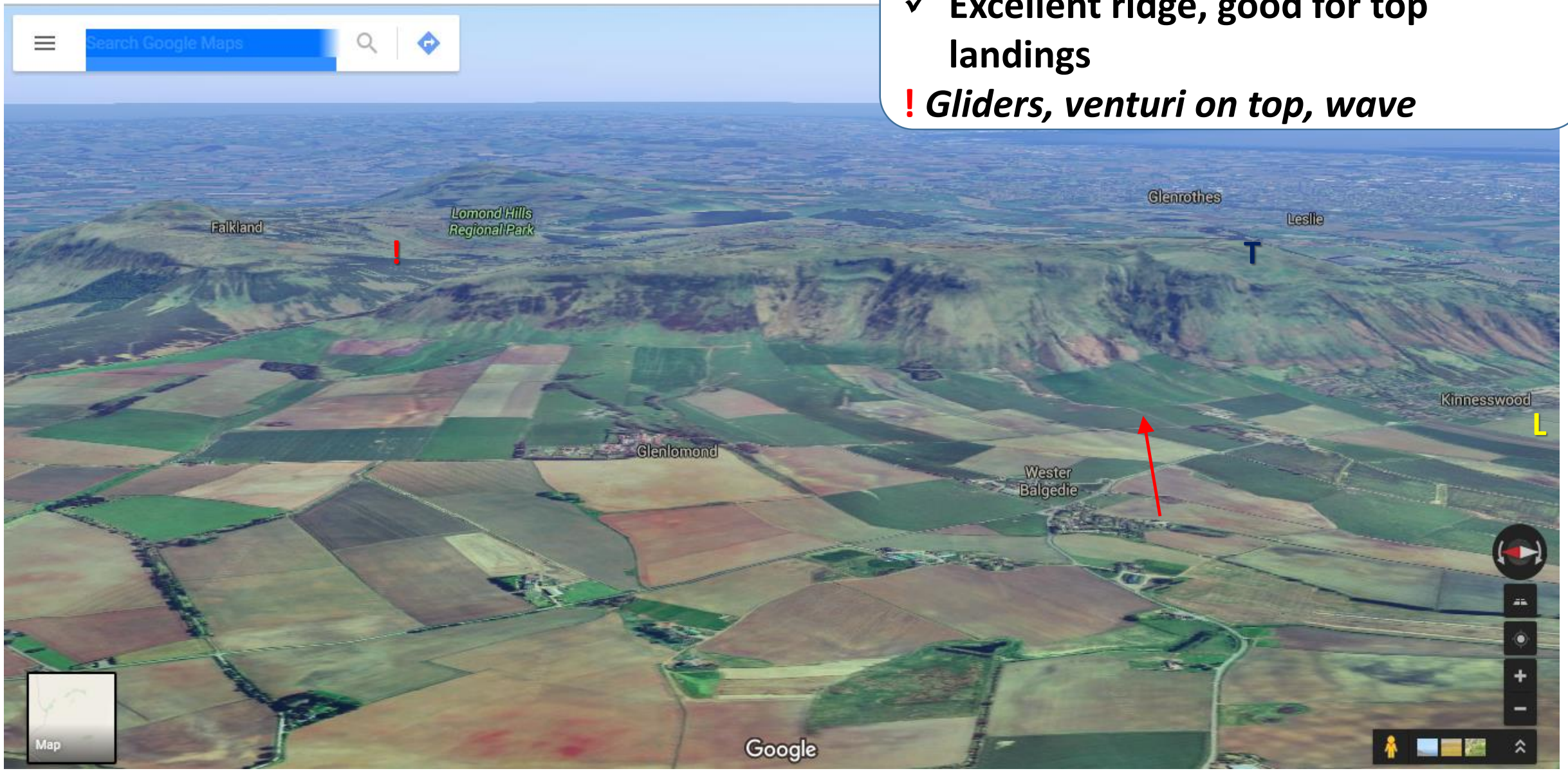


Tinto

<u>South, southeast, north.</u>
South is excellent ridge,
! Valleys/gullys, top wall,
higher wind ‘Big Tinto’



Bishop



West, northwest.

- ✓ **Excellent ridge, good for top landings**
- ! ***Gliders, venturi on top, wave***

Some other local sites

Gargunnock – Northwest

Bodesbeck – Northwest

Carnethy Hill – Southeast

Abington – East, northeast

Fairlie – West, northwest,

need letter of agreement

Campsie Fells – not allowed

Soaring Bishop Hill

Go exploring!

Trotternish…perhaps my favourite to date ☺

THE END!

QUESTIONS?