

Comparative Climate Analysis of Inverness, Applecross, Durness, Dornoch, and Altnaharra (Scotland)

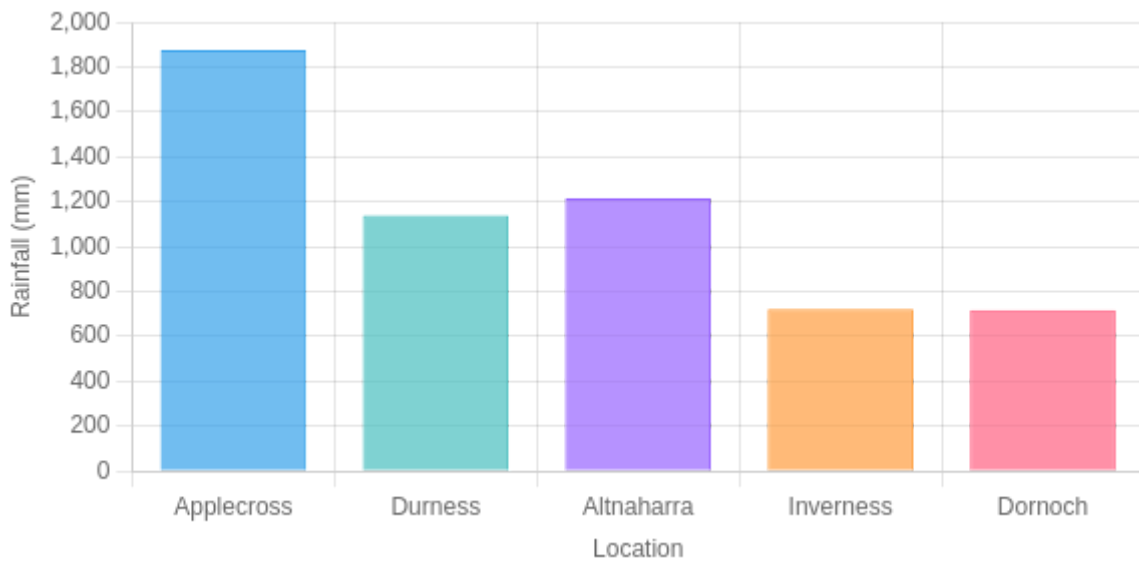
Scotland's climate varies significantly across regions, influenced by factors like latitude, elevation, and exposure to prevailing winds. This report compares the **annual average rainfall** and **annual average temperature** for five locations in northern Scotland – **Inverness, Applecross, Durness, Dornoch, and Altnaharra** – highlighting their microclimates and how they are shaped by local geography.

Annual Average Rainfall

Rainfall totals show a clear west–east gradient, with coastal and highland areas on the west receiving much more precipitation than sheltered eastern areas. Applecross, on the exposed west coast, is the wettest of the five, while Dornoch, on the east coast, is the driest. Inverness, Durness, and Altnaharra fall in between, with Durness and Altnaharra still considerably wetter than Inverness. (All rainfall data are long-term averages, typically 30-year normals.)

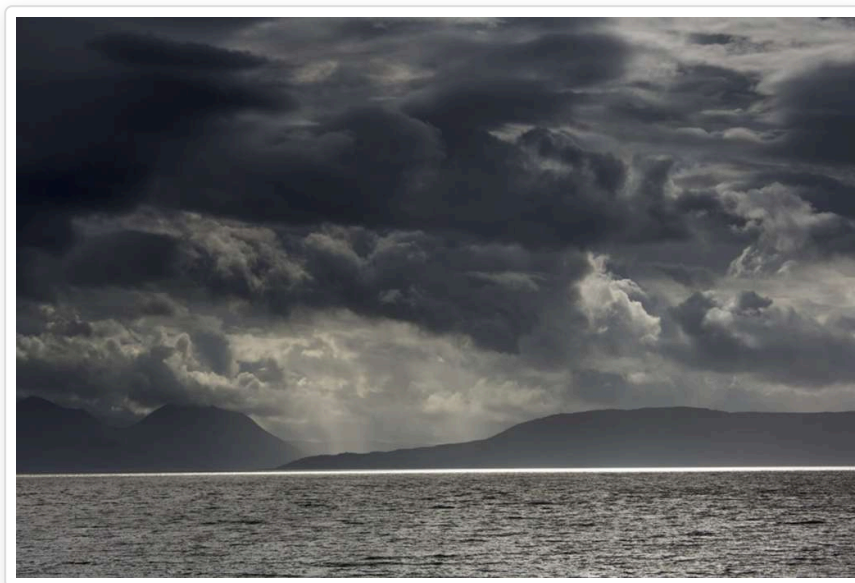
The chart below illustrates the significant differences in annual rainfall across the five locations, highlighting the pronounced west-east gradient in Scotland's climate.

Annual Average Rainfall by Location



Source:,,,

Applecross (Highlands, west coast) – **~1876 mm** per year. This small village on the Applecross Peninsula is one of the wettest places in Scotland. Its location on the exposed Atlantic coast, facing prevailing southwesterly winds, results in high year-round rainfall. Precipitation is especially concentrated in winter; Applecross typically sees over 200 mm of rain in December and January. The terrain around Applecross also contributes to heavy rain – the Bealach na Bà mountain pass (the road into Applecross) rises over 600 m, forcing moist air to rise and condense, which enhances rainfall in this area. Overall, Applecross averages rain on about **212 days** per year, more than any of the other locations.



Dramatic coastal landscape likely Applecross, Scotland, under a heavily clouded sky

Durness (Sutherland, northwest coast) – **~1141 mm** per year. Durness, on the remote northwest coast, also has a wet climate but slightly less so than Applecross. It receives roughly **1100–1200 mm** annually. Like Applecross, Durness’s rainfall is higher in winter; December often brings around 160 mm, while the driest

month (May) might see ~85 mm. The difference between wet and dry months is not huge, meaning rain is frequent year-round. Durness lies in the path of Atlantic weather systems and has relatively high terrain nearby (the Foinaven and Arkle hills), which can enhance rainfall via orographic lift. Still, being on the coast, some of the moisture may be intercepted before reaching Durness, making it a bit drier than the more mountainous Applecross. Durness has about **195 rainy days** per year.



Rugged coastal landscape near Durness, Scotland, under a partly cloudy sky with a sandy beach and rocks

Altnaharra (Sutherland, inland north) – **~1216 mm** per year. Altnaharra is a remote settlement in the far north, located inland (about 20 km from the coast) at an elevation of ~80 m. Its rainfall (~**1200 mm** per year) is comparable to Durness. Altnaharra also sees a winter maximum in precipitation; its wettest months are November and December (~130–140 mm each), while late spring (May–June) is the driest period (~60 mm/month). The area around Altnaharra is relatively flat (it sits in the Strath Halladale valley), but it is surrounded by moorland and some low hills. This inland location can still receive plenty of rain from Atlantic frontal systems, although it may be slightly sheltered from the immediate coastal downpours. Altnaharra has about **197 rainy days** per year, meaning precipitation is frequent (almost every other day on average).

Inverness (Highlands, east coast) – **~723 mm** per year. Inverness, the regional capital, is comparatively dry. It averages roughly **700–750 mm** of rain annually, making it one of the drier areas of Scotland. Inverness benefits from a rain-shadow effect: prevailing winds from the southwest deposit most of their moisture on the western Highlands, so by the time air reaches Inverness (situated in the Great Glen), much of the rain has already fallen. Indeed, Inverness is often cited as one of Scotland’s driest cities. Its rainfall is spread fairly evenly through the year, with slightly wetter autumn months (October–December) and slightly drier spring months (February–April). For example, October might see ~70–80 mm, while April sees ~40 mm. Inverness has about **143 rainy days** per year – significantly fewer “rain days” than the wetter west-coast locations.



Panoramic view of Inverness, Scotland, showcasing the Ness River flowing through the city with lush green banks

Dornoch (Highlands, east coast) – **~719 mm** per year. Dornoch, a town on the northeast coast (Moray Firth), is similar to Inverness in rainfall. It averages about **700 mm** per year, essentially on par with Inverness and among the lowest rainfall totals in Scotland. Like Inverness, Dornoch lies in the lee of the highlands and thus receives relatively little rain from the prevailing westerlies. The driest months are spring (e.g. April ~44 mm), and the wettest tend to be late autumn (October ~80 mm). Overall, Dornoch has about **147 rainy days** annually – similar to Inverness. The relatively dry climate has earned Dornoch and the surrounding area a reputation for a “sunny microclimate.” In fact, the Moray Firth coast (including Dornoch) is said to have “*the same level of rainfall as the South East of England*”, thanks to shelter from the mountains to the west. This makes Dornoch a relatively pleasant place in terms of weather, with more fine days than many other parts of Scotland.



Aerial photograph of a picturesque coastal town, likely Dornoch, Scotland, under a clear sky, emphasizing its sunny microclimate

Annual Average Temperature

All five locations have a **temperate oceanic climate**, with cool summers and relatively mild winters for their high latitude. However, there are subtle differences in average temperatures due to elevation and proximity to the sea:

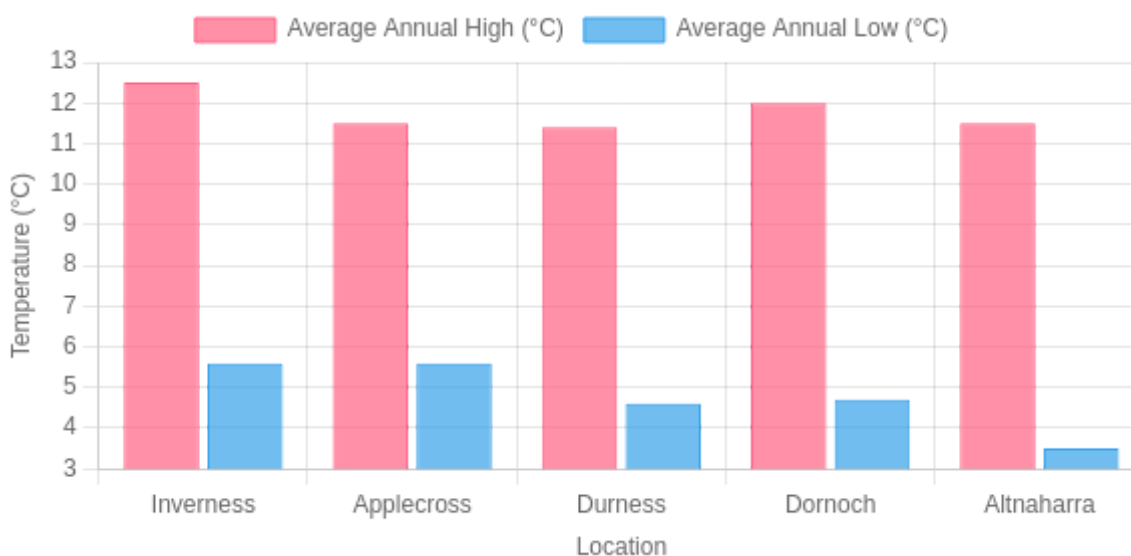
- **Inverness** has the warmest climate of the five. Its **annual average temperature** is around **8.0 °C**. Inverness benefits from its low elevation (near sea level) and coastal location on the Moray Firth, which keeps temperatures moderate year-round. Winters in Inverness are **mild for Scotland** – January averages about **7.0 °C** during the day and **1.2 °C** at night. Summers are pleasantly warm: July days typically reach **19.0 °C** with lows around **11.5 °C**. Inverness rarely sees extreme heat (temperatures above 25 °C are uncommon) or extreme cold (temperatures below –5 °C are rare). The Gulf Stream’s influence and the sheltering hills contribute to this mild climate. Overall, Inverness enjoys **“very warm”** summers and **“mild”** winters by Scottish standards.
- **Dornoch** has a climate very similar to Inverness, given its proximity and coastal location. Dornoch’s **annual average temperature** is approximately **7.3 °C**. Its winter temperatures are nearly as mild: January averages about **6.5 °C** in the daytime and **0.2 °C** at night. Summers in Dornoch are also warm – July days reach **18.3 °C** on average, with lows of **10.5 °C**. These values are almost identical to Inverness’s. The slight difference in annual average (7.3 vs 8.0 °C) could be due to Dornoch being a touch cooler in winter (it can see a few more frosty nights, with about **48 days of air frost** per year, compared to Inverness’s 38 days). Overall, Dornoch experiences **“cool”** winters and **“warm”** summers for Scotland. Its coastal setting and low elevation (sea level) keep temperatures moderate, much like Inverness.
- **Applecross** has a **cooler climate** than Inverness and Dornoch, primarily because it is more exposed to the Atlantic and has higher terrain nearby. Applecross’s **annual average temperature** is around **7.0 °C**. Winters are **mild for Scotland** (thanks to the warming effect of the sea), with January averaging about **6.8 °C** during the day and **1.6 °C** at night – very close to Inverness’s winter temps. However, summers in Applecross are noticeably cooler: July days typically reach only **16.8 °C** with lows around **10.6 °C**. This makes Applecross’s summers **“cool”** rather than warm. The frequent cloud cover and ocean winds keep peak summer temperatures lower than in sheltered inland spots. In summary, Applecross has a climate where **winters are nearly as mild as Inverness**, but **summers are a few degrees cooler**, resulting in a slightly lower annual average.
- **Durness** also has a **cool climate**, similar to Applecross. Its **annual average temperature** is roughly **7.0 °C** (estimated from monthly averages). Durness’s winters are **cool for Scotland**: January averages about **6.5 °C** in the daytime and **0.5 °C** at night. This is comparable to Applecross and Dornoch’s winter lows, though Durness can see a few more frosty nights (it has **48 days of air frost** per year on average).

Summers in Durness are **cool**, with July daytime temperatures around **16.9 °C** and lows about **10.1 °C**. These summer values are nearly identical to Applecross’s, indicating similarly cool summer conditions on Scotland’s northwest coast. The combination of a northerly latitude and exposure to cool ocean breezes keeps Durness from getting very warm. Overall, Durness experiences **mild summers and relatively cold winters** for Scotland, with an annual temperature regime quite close to Applecross’s.

- **Altnaharra** is the **coldest** of the five locations. Its inland position and higher latitude contribute to cooler temperatures year-round. Altnaharra’s **annual average temperature** is about **7.0 °C** or slightly lower (estimated). Winters in Altnaharra are **distinctly colder**: December and January average around **6.0 °C** in the daytime, and nights often drop below freezing. In fact, January nights average **-1.4 °C** (the coldest month’s low). Altnaharra is known for its frosty conditions – it records about **74 days of air frost** per year, far more than the coastal towns. It holds the record for the UK’s lowest temperature (**-27.2 °C**) measured in December 1995. Summers in Altnaharra are **warm** by northern Scotland standards but still not hot: July days reach **17.7 °C** on average, with lows of **9.6 °C**. That’s a bit cooler than Inverness’s summer highs (**~19 °C**) but similar to the coastal west (Applecross/Durness **~16.8–16.9 °C**). The lack of marine moderation means Altnaharra can have larger temperature swings – warmer days in summer (when skies clear) but colder nights and winters than the coasts. In summary, Altnaharra has **chilly winters and moderately warm summers**, leading to the lowest annual average temperature among these locations.

The chart below visualizes the average high and low temperatures for each location, highlighting these regional differences.

Average Annual High and Low Temperatures by Location



Source:,,,,,

(Note: The annual average temperature is often approximated as the average of the annual daily high and low. Using that method, the averages would be roughly 8.0 °C for Inverness, 7.0 °C for Applecross, ~7.0 °C for Durness, 7.3 °C for Dornoch, and ~7.0 °C for Altnaharra. These are consistent with the ranges given above.)

Microclimates and Geographic Influences

The climate differences among these locations are largely explained by their **geographic settings**. Key factors include:

- **Latitude and Solar Exposure:** All five towns are at a high latitude (between 57°N and 58°N). This means long summer days and short winter days, which affects temperature and rainfall patterns. In summer, the long daylight can warm the land, but in winter, the short days contribute to colder temperatures. However, Scotland's climate is moderated by the ocean, so even at this latitude, extreme cold is tempered (except in sheltered inland spots like Altnaharra). The high latitude also means **sunlight hours vary greatly** – for example, Inverness has about 17.5 hours of daylight in June but only 7 hours in December. This large seasonal variation in daylight drives the seasonal temperature cycle.
- **Proximity to the Sea (Maritime Influence):** Locations closer to the sea (Inverness, Applecross, Durness, Dornoch) have their temperatures moderated by the ocean. The sea warms them in winter and cools them in summer, resulting in relatively **mild winters and cool summers**. In contrast, Altnaharra's inland position means it experiences more **continental-like temperature swings** – colder winters and slightly warmer summer days (when conditions are calm). The influence of the **Gulf Stream** (North Atlantic Drift) is also significant for all these coastal sites, keeping winter temperatures much higher than at similar latitudes in continental Europe or North America. For instance, Inverness and Dornoch rarely see prolonged sub-freezing weather in winter, thanks to the warming effect of the nearby Atlantic waters.
- **Prevailing Winds and Rainfall Patterns:** Scotland's prevailing winds are from the southwest, carrying moist air from the Atlantic. This results in a classic **orographic rainfall** pattern: **western and upland areas get much more rain** than eastern lowlands. Applecross, on the west coast, is directly exposed to these moist winds and lies at the foot of mountains, so it receives heavy rainfall year-round. Durness, on the northwest coast, also faces Atlantic storms and is wet, though slightly less so than Applecross (possibly due to its terrain being a bit lower and more open). In contrast, Inverness and Dornoch lie on the **eastern side** of the country or in sheltered valleys. The mountains of the Highlands act as a barrier, causing the air to lose most of its moisture before reaching these eastern areas. As a result, Inverness and Dornoch are in a **rain shadow**, with significantly lower rainfall. In fact, the difference is stark: Applecross gets over **1800 mm** of rain, while Inverness and Dornoch get only around **700 mm** – a

difference of more than 2.5 times. This west-east rainfall gradient is a defining feature of Scotland's climate.

- **Elevation and Local Terrain:** Elevation plays a role in temperature and rainfall. Applecross, although coastal, is surrounded by high hills (the Applecross Hills rise to over 900 m nearby), which can enhance rainfall via orographic uplift and also keep temperatures cooler (especially at higher elevations). Durness is mostly at sea level, but inland from Durness the land rises into hills, which can cause additional rain. Altnaharra is at a modest 80 m elevation, but being inland and surrounded by open moorland, it has less shelter from cold air masses in winter – hence its colder nights and more frosts. Inverness and Dornoch are at or near sea level with gentle surrounding terrain, so they experience the full moderating effect of the sea and are less prone to temperature extremes. Notably, **higher elevations in Scotland are generally cooler and wetter** than lowlands; for example, the Cairngorm Mountains (south of these locations) have much lower average temperatures and heavier snowfall. None of the five towns here are high-altitude, but the influence of nearby high ground is seen in Applecross's heavy rain and in the cooler summer climate of Applecross and Durness compared to the lower-lying Inverness/Dornoch.
- **Local Microclimates:** Each location has its own microclimate nuances. **Inverness** benefits from being in the Great Glen (a valley), which funnels weather systems and can sometimes create a bit of shelter. It's also the largest settlement here, so an urban heat island effect might slightly raise nighttime temperatures. **Applecross** is effectively in a coastal pocket – its peninsula setting means it can be very wet but also sometimes enjoys sunny spells when the weather clears, as the mountains can trap clouds. **Durness's** microclimate is influenced by its coastal moorland environment; it can be windy and cool, but it also has some of the most dramatic scenery (like Cape Wrath) where fog and mist are common. **Dornoch** is known for a relatively **sunny, dry microclimate** in the summer – being on the east coast, it often sees clearer skies than the west, and its sheltered position means it's a bit warmer and drier, a fact not lost on tourists and golfers who flock there. **Altnaharra**, by contrast, has a microclimate that leans towards a **continental subarctic feel** in winter – very cold and often snowy, with frequent frosts, whereas in summer it can be pleasantly warm and relatively dry (since it's not on the path of the wettest Atlantic winds). In fact, Altnaharra is sometimes referred to as the “*cold spot*” of Scotland, and it's not uncommon for it to record the UK's lowest temperatures in winter.

Summary Table

The table below summarizes the key climate statistics for each location:

Location	Annual Rainfall	Annual Avg Temp	Typical Summer Temp (July)	Typical Winter Temp (Jan)	Notes on Climate
Inverness (Highlands, east coast)	~723 mm(low – driest in Scotland)	~8.0 °C(mild)	~19.0 °C (day), ~11.5 °C (night)(cool summer)	~7.0 °C (day), ~1.2 °C (night) (mild winter)	Sheltered by mountains; relatively dry and mild year-round. Rainfall spread evenly, fewer rainy days.
Applecross (Highlands, west coast)	~1876 mm(very high – one of wettest)	~7.0 °C(cool)	~16.8 °C (day), ~10.6 °C (night)(cool summer)	~6.8 °C (day), ~1.6 °C (night) (mild winter)	Exposed to Atlantic storms; heavy year-round rain. Moderated by sea (mild winters), but cooler summers due to cloud and wind.
Durness (Sutherland, northwest coast)	~1141 mm(high – wet year-round)	~7.0 °C(cool)	~16.9 °C (day), ~10.1 °C (night)(cool summer)	~6.5 °C (day), ~0.5 °C (night) (cool winter)	Remote NW coast; frequent rain from Atlantic fronts. Cool summers and winters, with more frosty nights than west coast further south.

Location	Annual Rainfall	Annual Avg Temp	Typical Summer Temp (July)	Typical Winter Temp (Jan)	Notes on Climate
Dornoch (High lands, northeast coast)	~719 mm(low – similar to Inverness)	~7.3 °C(cool)	~18.3 °C (day), ~10.5 °C (night) (warm summer)	~6.5 °C (day), ~0.2 °C (night) (cool winter)	Sheltered east coast location; low rainfall. Mild, with warm summers and cool (but not very cold) winters. Known for a relatively sunny, dry microclimate.
Altnaharra (Sutherland, inland north)	~1216 mm(high – wetter inland)	~7.0 °C(coolest)	~17.7 °C (day), ~9.6 °C (night)(warm summer)	~6.0 °C (day), ~-1.4 °C (night)(cold winter)	Inland moorland setting; coldest winters of the group (frequent frosts, snow). Summers are warm but short. Rainfall is high, especially in winter, with rain on ~200 days/year.

Sources: The data above are based on long-term climate averages (typically 1981–2010 or similar 30-year normals) from the Met Office and other climate databases. They illustrate the classic pattern of Scotland’s climate: **wet and cool in the west, drier and milder in the east**, with inland areas experiencing the most extreme temperatures.

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