The Physical Geography of the British Isles

Location:

Islands – 1,129; off the west coast of Europe, surrounded by shallow sea – North Sea, English Channel, St George’s Channel, Irish Sea, North Channel, Atlantic Ocean
50° and 61° northern latitude
2° eastern and 10° western longitude
Total area: 314,000 km²
British Isle: 218,000 km²
Irish Isle: 83,000 km²
Hebrides: 3,100 km² (Inner and Outer Hebrides)
Orkney: 1,600 km² (67 islands)
Shetland: 1,400 km² (100)
Man: 572 km²
Wight, Anglesey, Scilly, Channel Islands

Geological history

Oldest parts: Northwest Scotland, Hebrides (Archaeozoic)
Mountains in Scotland, North England, Wales, North of Ireland: Caledonian orogeny (Silurian period)
Between the old ranges: basins, plains – Scottish Lowlands, Carlisle Plain, the central parts of Ireland; formed in the Devon and Carboniferous periods, sediments – coal in the Carboniferous layers (tropical zone in those times)
Pennine – Carboniferous, with Mesozoic layers, principally sedimentary rocks
Variscan orogeny – South Wales, Cornwall, South of Ireland; east-west direction
Exe –Tees line: southeast – younger; mainly Mesozoic layers (Triassic, Jurassic, Cretaceous) with some older (Permian) ones; scarp and vale structure (steep scarp slopes on one side, gentle dip slopes on the other)
London Basin: Tertiary sediments, south of it: Mesozoic again
Pleistocene: glaciation; southern limit: Bristol Channel – Thames; most salient: coastal regions (submerged coasts)

Landforms

British Isle:

Scotland: North West Highlands, Grampian Mountains, Scottish Lowlands, Southern Uplands, Cairngorms, Cheviot Hills
England: Cheviot Hills, Cumbrian Mountains (Lake District), The Pennines (Peak District), Cleveland Hills, North York Moors, The Fens, Cotswold Hills, Chiltern Hills, North Downs, South Downs, The Weald, Salisbury Plain, Mendip Hills, Dartmoor Forest, Exmoor Forest
Wales: Cambrian Mountains, Snowdonia, Brecon Beacons, Black Mountains
Irish Isle: Mountains (or Glens) of Antrim, Mourne Mountains, Wicklow Mountains, Galty Mountains, The Burren
Peaks: Ben Nevis (1343 m), Snowdon (1085 m), Carrauntoohill (1041 m), Slieve Donard (852 m)
Climate

Location: temperate zone (northern), marine climate area

Air masses:
- Northwest: polar maritime (cold, moist)
- North: arctic maritime (very cold, moist; in winter)
- Northeast: polar continental (very cold, dry; in winter)
- Southwest: tropical maritime (warm, moist)
- South: tropical continental (hot, dry)

Westerlies, islands – much precipitation, evenly distributed; close to Iceland (Icelandic low) – stormy weather

North Atlantic Drift: mean annual temperature 7-8 °C warmer than on the same latitude

Britain:
- Mean annual temperature: 7-11 °C
- Mean maximum temperature: 13-18 °C (Orkney, Shetland: 11 °C)
- Mean minimum temperature: 3-7 °C
- Temperature extremes:
  - Highest: 38.5 °C (Brogdale, Kent; August 10, 2003)
  - Lowest: -27.2 °C (Braemar, Scotland, January 10, 1982; Altnaharra, Scotland, December 30, 1995)

Precipitation: 600 to 1500 mm (extremes: 553 mm in Cambridge; 2-4000 mm in Scottish Highlands)

Amount of sunshine: 900 to 1,750-2,100 (Hebrides to Southeast)

Fog, more than 50% of the days overcast

Ireland:
- Mean maximum temperature: 14-16 °C
- Mean minimum temperature: 4-7 °C
- Precipitation: 700-1400 mm (60% of it between August and January)

Hydrology

Seas
Abundant precipitation – lots of rivers; even water level, high water output; many small rivers with small drainage basins; no freezing even in winter

Estuaries

Canals – altogether 7,500 km of inland waterways

Rivers:
- Britain: Thames – 338 km, 16,000 km²; Severn – 354 km; Mersey, Tyne, Tees, Clyde, Avon, Trent
- Ireland: Shannon (longest: 386 km; largest drainage basin), Barrow, Boyne, Lagan, Bann, Liffey

Lakes: Scotland, Ireland, Lake District; largest: Lough Neagh (38 km²)

Moors and bogs
Natural vegetation

Originally: deciduous forests – beech and oak (limit: Scotland: 300 m, England: 500 m); marshlands, bogs
Forests: < 5%
South: evergreens (no frost)

Soils

Southeast: brown forest soils; other: forest soils, alluvial soils, podzol
Ireland: south and east – brown forest soils and podzols; north and west – peats, gleys and podzols

Appendix:
The geological time scale

<table>
<thead>
<tr>
<th>Era</th>
<th>Period</th>
<th>Epoch</th>
<th>Duration in million years</th>
<th>Million years ago</th>
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