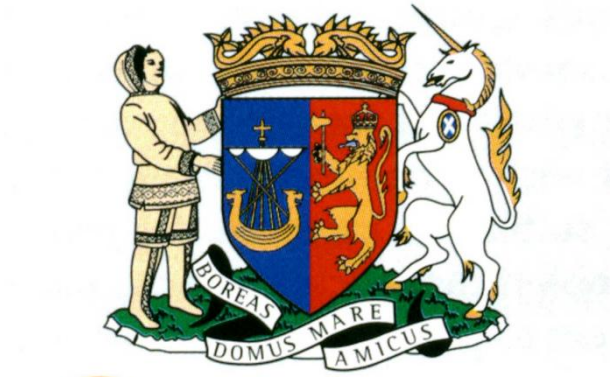


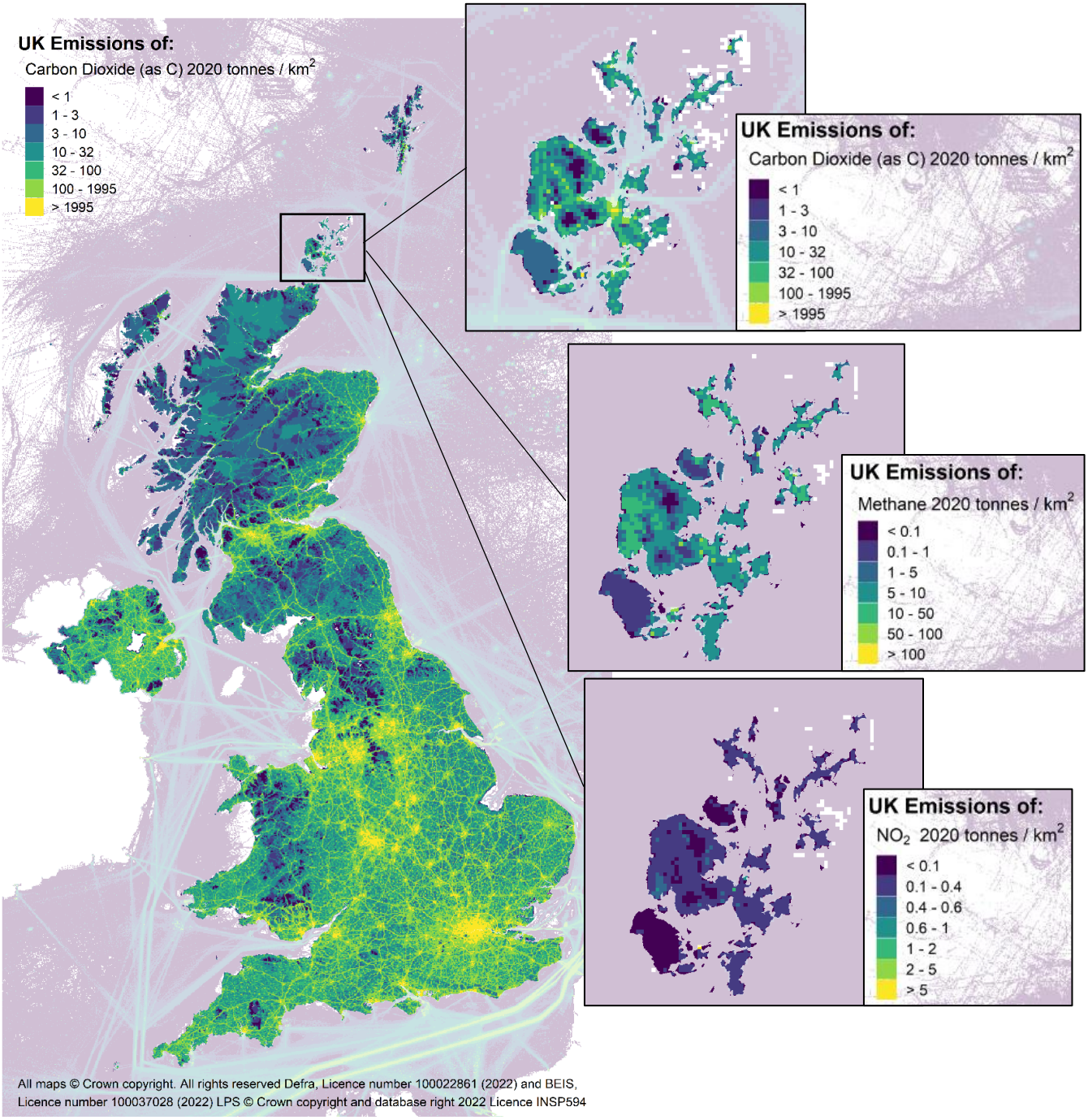
ORKNEY
ISLANDS COUNCIL

Strategic Environmental Assessment Topic Papers
2025

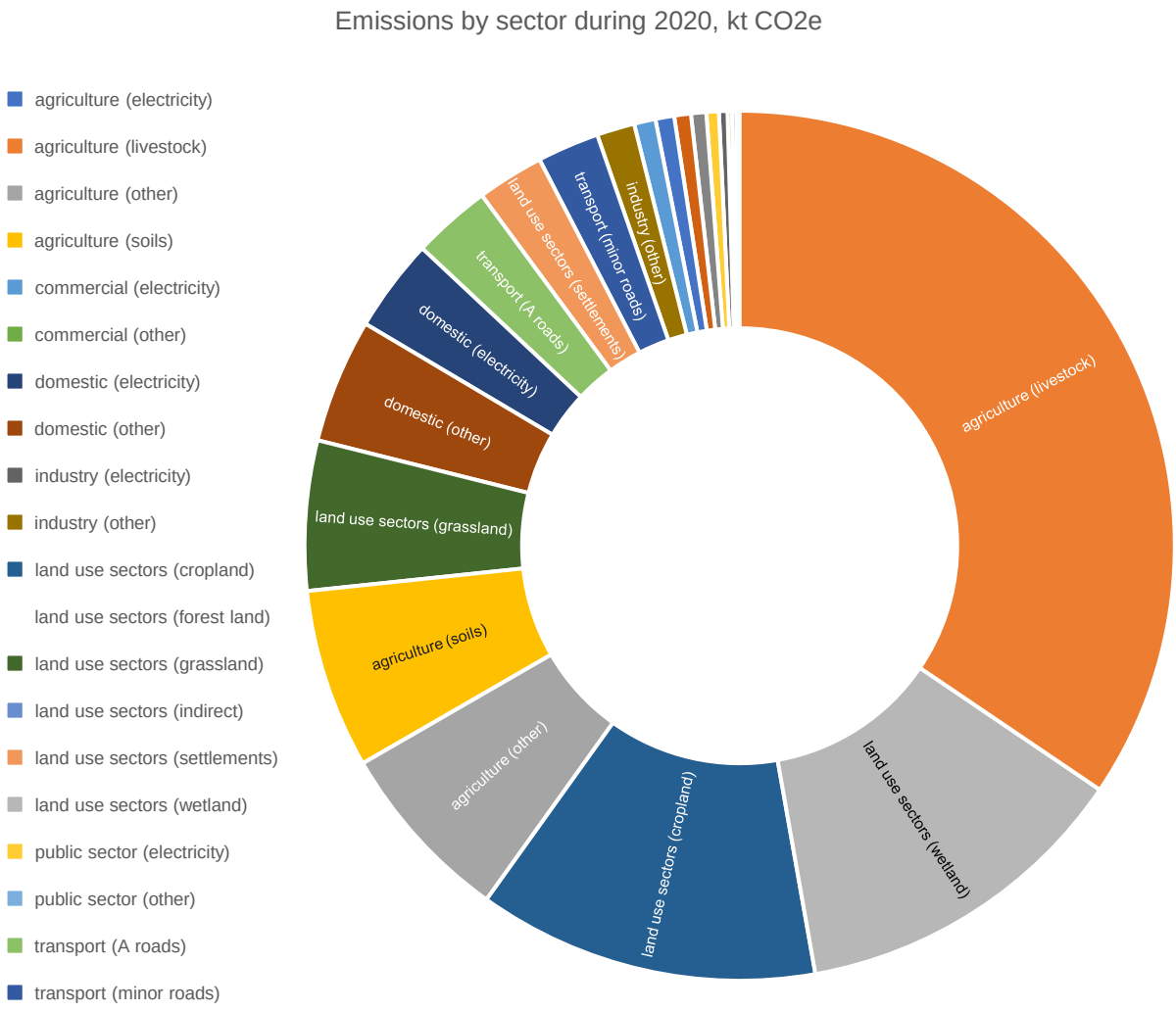
Topic 1: Climatic Factors

Greenhouse gas emissions

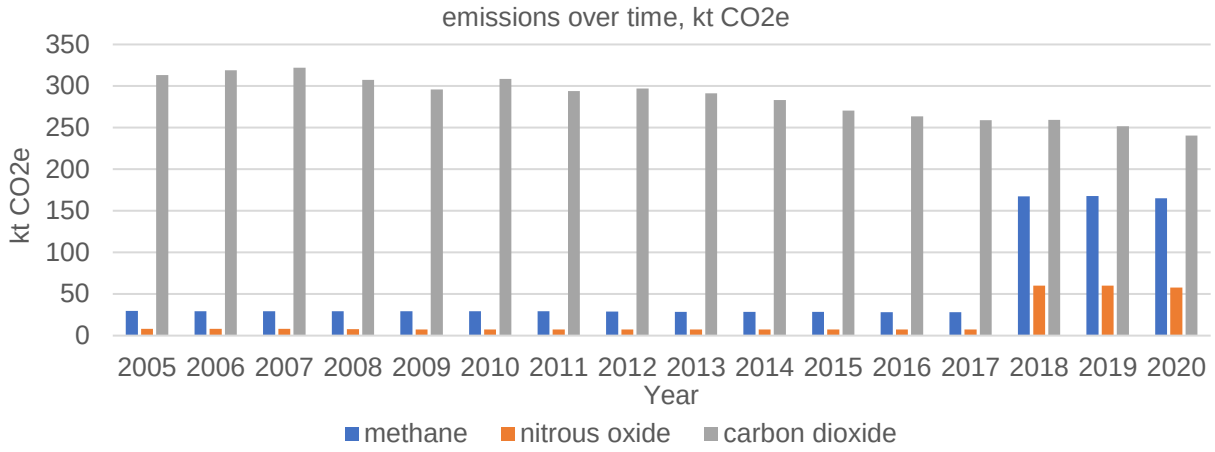
The map below, from the National Atmospheric Emissions Inventory, shows that, in common with other parts of the UK, built up areas have higher emissions of greenhouse gases (carbon dioxide, methane, nitrous oxides) than more rural areas of Orkney. The carbon dioxide map also shows the emissions traces from main shipping routes.



Looking at the sectors producing greenhouse gas emissions in Orkney, as would be expected in a predominantly agricultural landscape, the livestock farming sector produced the greatest proportion of kilo tonne C02 equivalent (kt CO2e) emissions in 2020, with other land management and uses contributing the second highest proportion of emissions. All sectors, except for transport, have shown a downwards trend in emissions since 2005. Transport emissions declined until 2012 when they started to rise again, with 2019 showing a slight decrease.



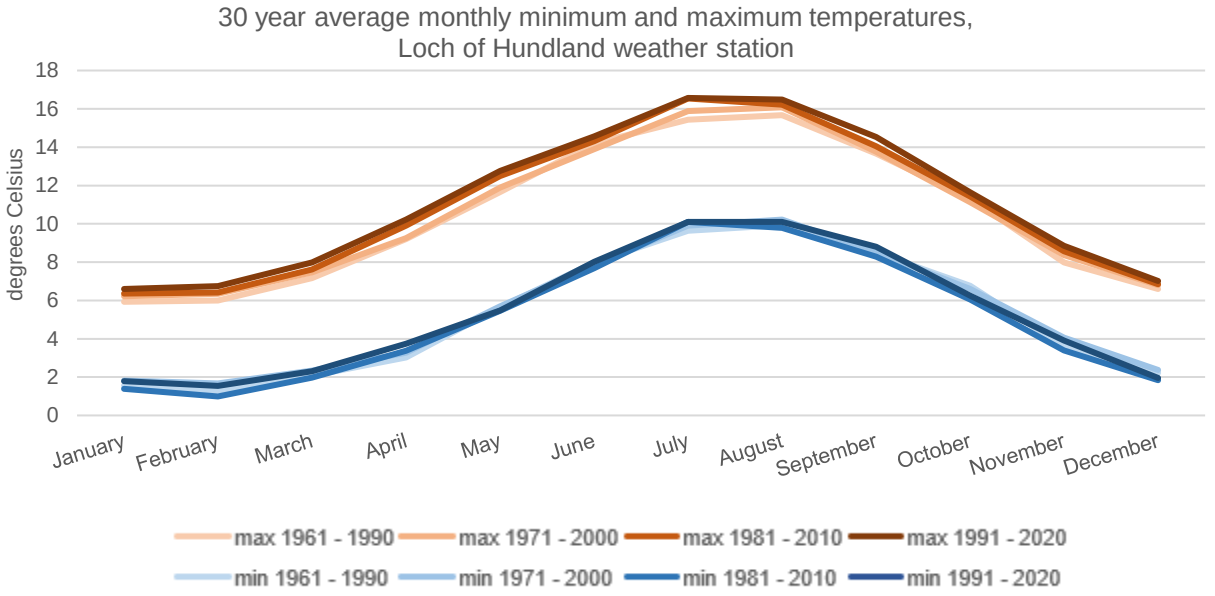
Overall, CO2 equivalent emissions in Orkney showed a downwards trend from 2005 until 2018, when the inclusion of agricultural (livestock and soil) emissions and other changes in the way data was reported in official statistics created a significant increase in reported emissions. However, the figures since then have continued the downwards trend.

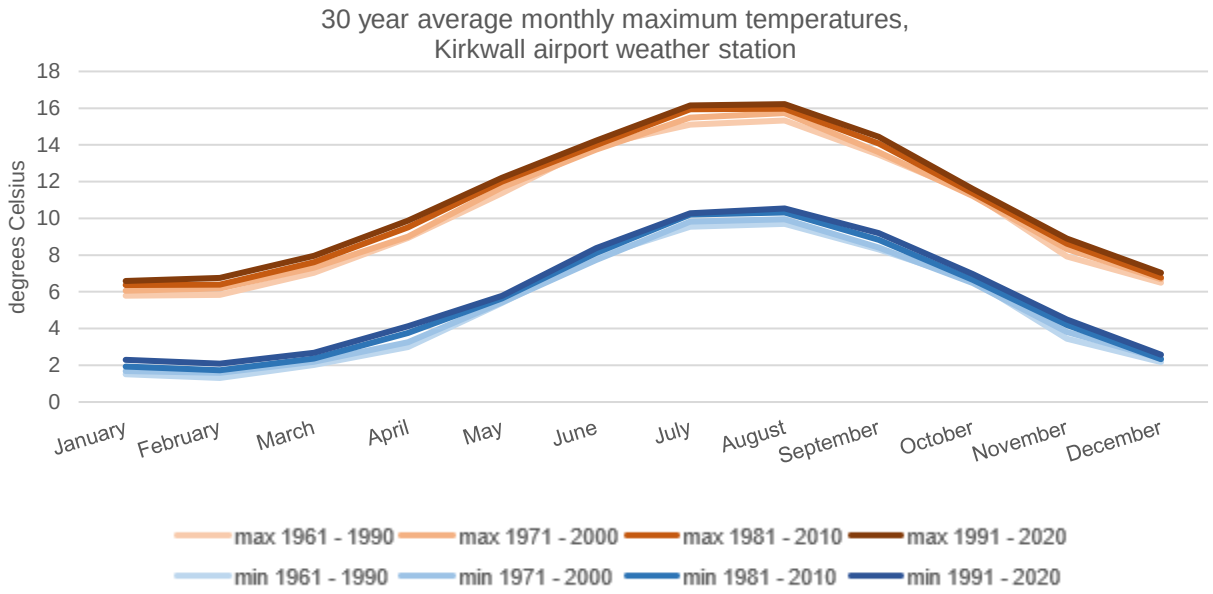


Historic climatic trends

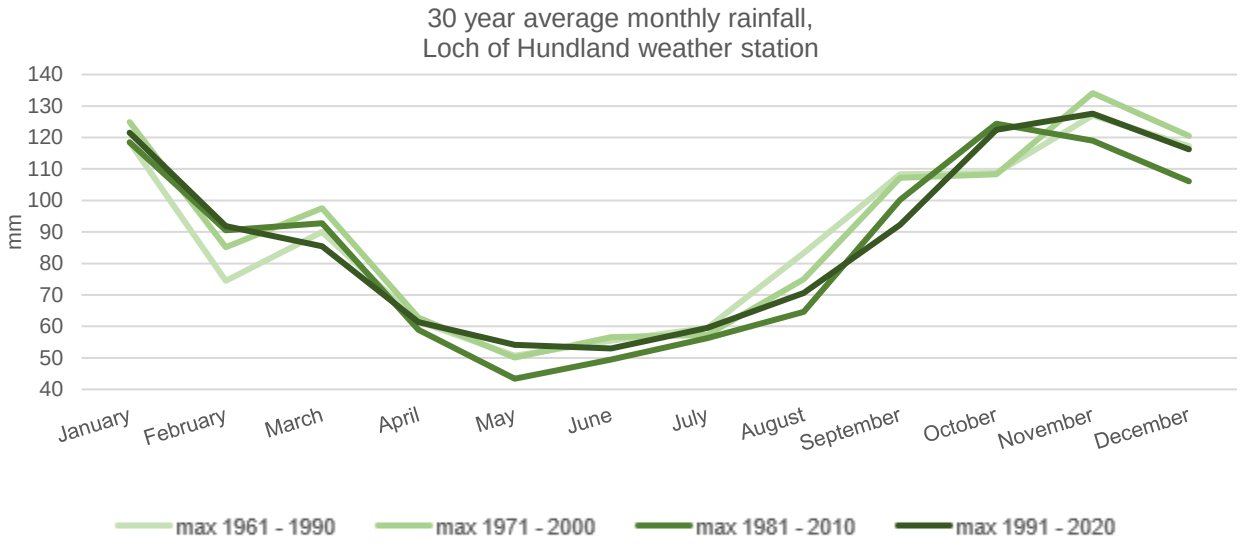
There are two weather stations with publicly available historic data in Orkney; one at Loch of Hundland approximately 4.3km from the northern coast of West Mainland, and one at Kirkwall airport approximately 4.3km from the centre of Kirkwall.

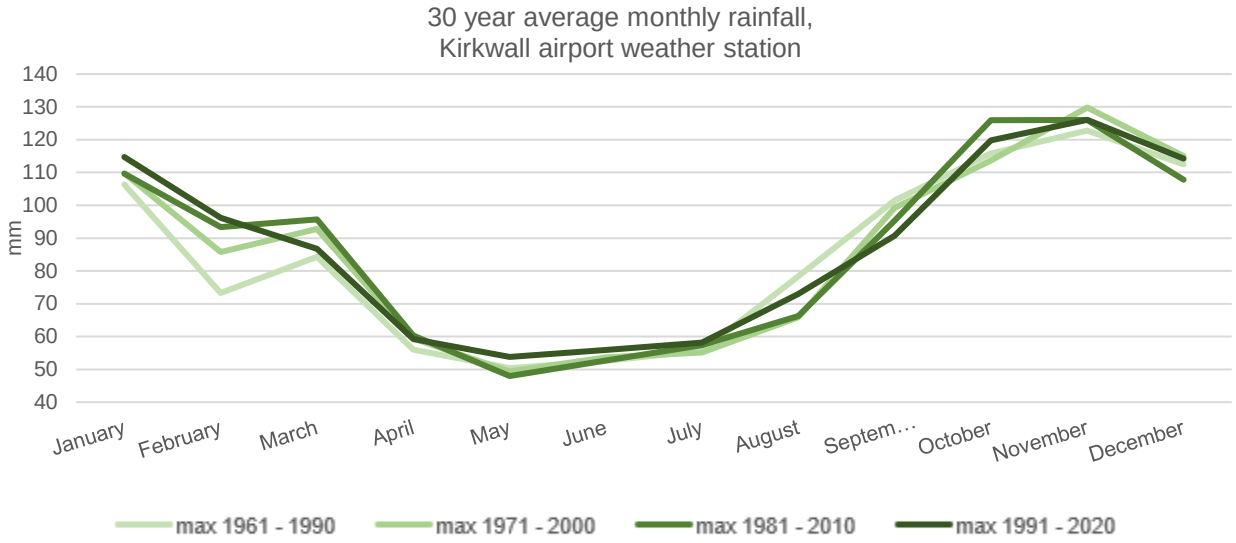
Both locations show similar trends for rising average maximum and minimum temperatures during between January and September, with Kirkwall airport continuing the rising minimum and maximum temperatures for the rest of the year. However the trend for Loch of Hundland shows increasing divergence between minimum and maximum temperatures during September to December, with decreasing average minimum temperatures and rising maximums. As would be expected with rising temperatures, both locations show a decline in the numbers of days of air frost.



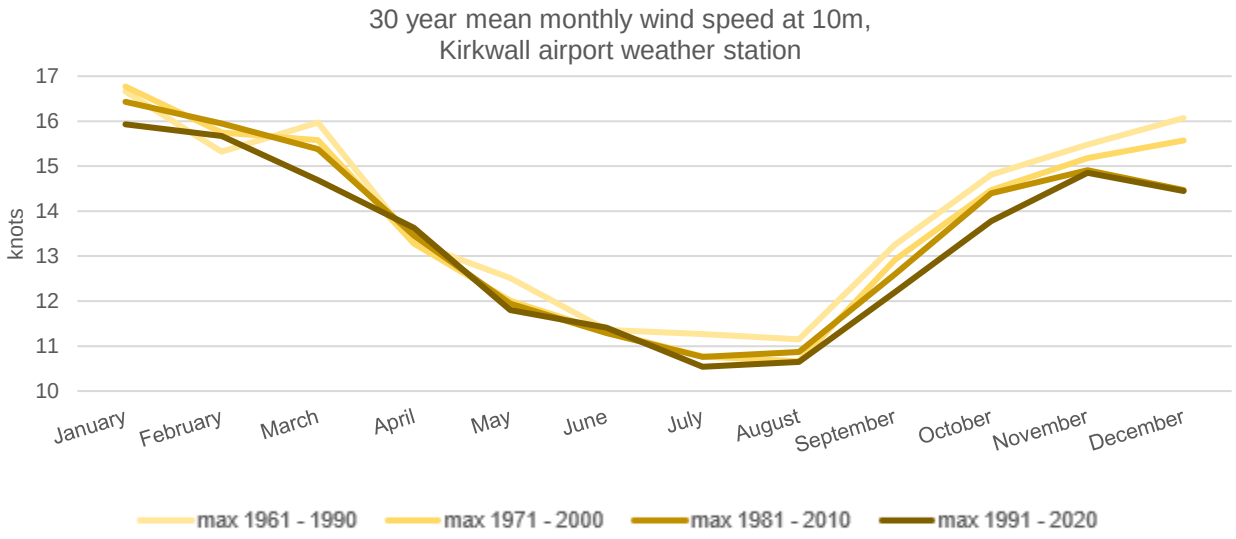


In relation to rainfall, the trend suggests a wetter start to the year followed by drier springs, wetter summers, drier autumns and winters for both locations.



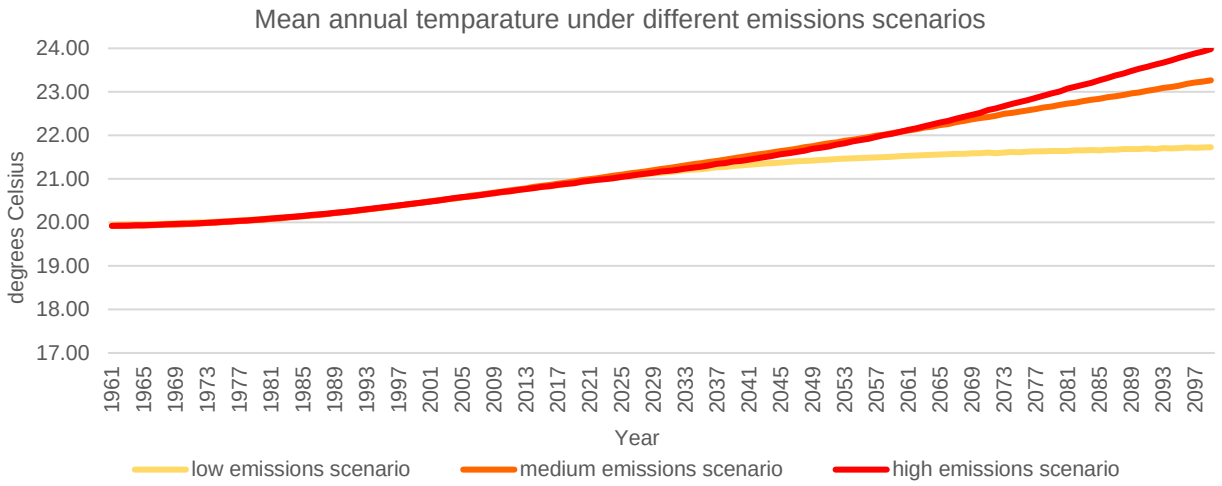


Only Kirkwall airport weather station records wind speed, so it is not possible to compare locations in relation to wind. However data from Kirkwall airport indicates a trend for lower mean wind speeds, with the exception of April, which is has a slightly higher trend.



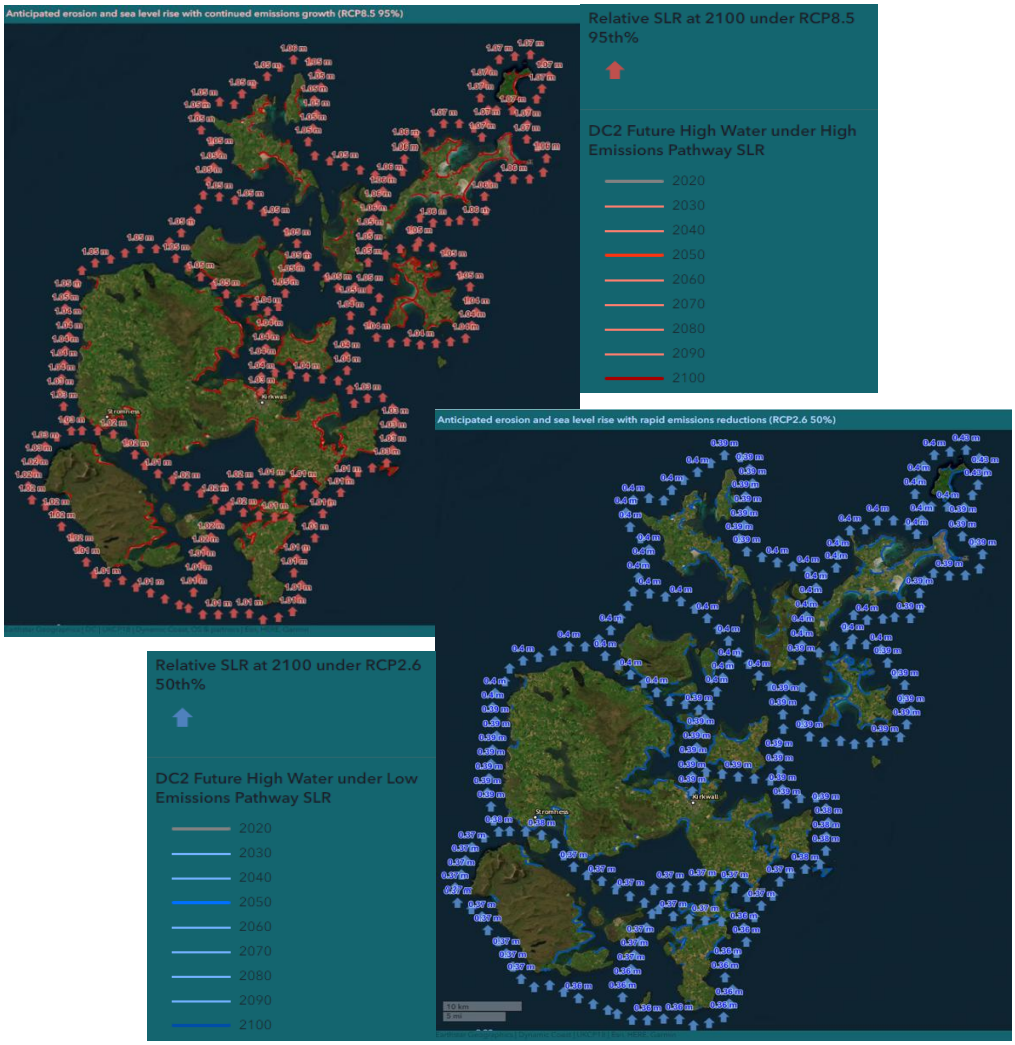
Future climatic projections

UK Climate Projections from the Met Office Hadley Centre Climate Programme provide an indication of future temperature increases under three different emissions scenarios: low, medium and high. Using data for the 25km square that includes Kirkwall airport (to allow comparison with historic weather station data), all of these scenarios predict a continued increase in annual temperatures. Associated with increased temperatures is an increase in atmospheric moisture, leading to increased rainfall. The Met Office consider that the UK will experience increased heavy rain and storm events. The historic data and projections suggest Orkney will experience the same.



Coastal change

Increased emissions will also lead to coastal change, with sea level rise affecting coastal erosion and ability of storms to affect land and infrastructure more easily. Orkney is predicted to have between around 0.36 - 0.4m (low emissions scenario) and 1.01 – 1.07m (high emissions scenario) sea level rise over 80 years to 2100.



Topic 2: Air

Air pollutants

Poor air quality can be harmful to human health as well as damaging vegetation, soils and buildings due to acidification. Objectives for harmful air pollutants are set in the Air Quality Standards (Scotland) Regulations 2010. The Cleaner Air for Scotland Strategy - An Independent Review (available via https://www.gov.scot/publications/cleaner-air-scotland-strategy-independent-review/) found that 4 of the 6 main pollutants have significantly reduced since the 1990s. This is likely to be a result of greater control and pollution prevention and control measures.

Air quality in Orkney is good. Data from 2018 to 2024 shows that no monitored locations exceeded the annual mean targets in Orkney.

		measured values in Orkney						
	Legislative annual mean objective	**2024**	**2023**	**2022**	**2021**	**2020**	**2019**	**2018**
NO2 threshold (for human health)	40 μg m-3	11.5	11.9	12.2	12.6	12.9	14.1	12.9
PM10 threshold (for human health)	18 μg m-3	7.0	7.0	7.1	7.1	7.1	7.2	7.2
NOx threshold (for protection of vegetation)	30 μg m-3	17.1	17.6	18.1	18.7	19.3	21.2	19.3

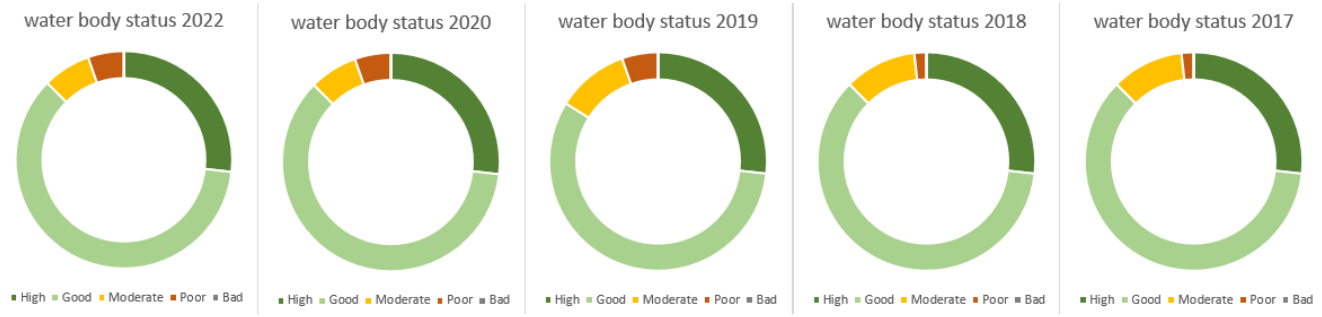
Topic 3: Water

Water quality

While there are numerous small watercourses and drainage ditches throughout Orkney, there are no rivers. There are several lochs and lochans, some of which are connected to the sea and are internationally important for nature conservation.

Objectives for water quality and ecological condition are set out in the European Union Water Framework Directive, which has been transposed into various pieces of Scottish legislation. Water features above a certain size threshold require to be assigned a classification and regularly monitored, with action taken to bring as many water bodies as possible to near natural condition.

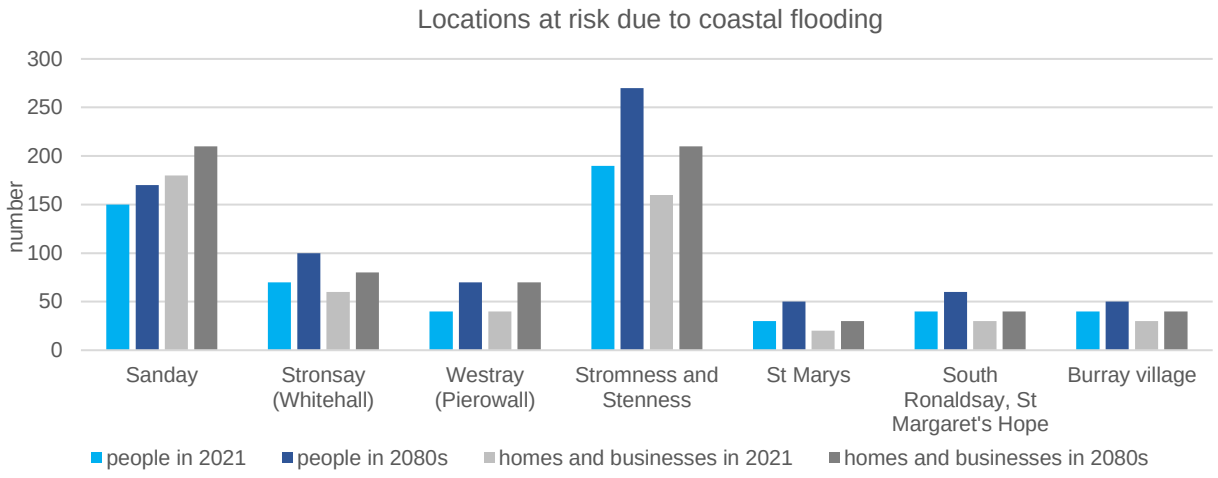
There are 56 monitored waterbodies in Orkney. Since 2016, the number of waterbodies achieving high and good status has remained largely the same over time. There has been a small decrease (2 less) in the number achieving moderate status and a slight increase in the number at poor status (2 more).

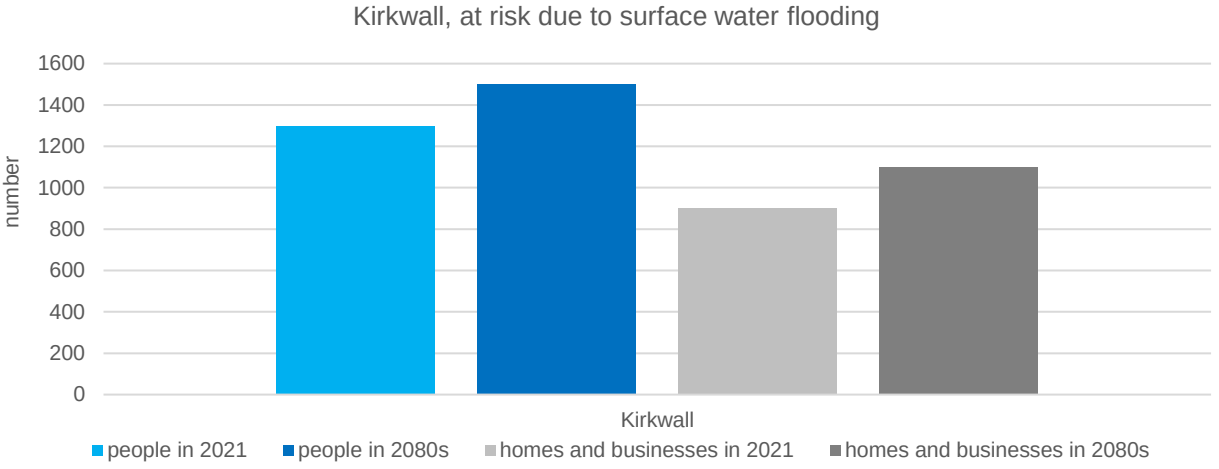


Flooding

A number of locations in Orkney experience coastal flooding. SEPA have identified nine potentially vulnerable areas related to settlements, as well as four roads (A960 Deerness; B9047 Little Ayre, Hoy; B9047, Hoy - South Walls connection, The Ayre; Churchill Barriers). Predictions of the numbers of homes and businesses at risk from coastal flooding in 2021 and by the 2080s are provided for eight locations, with the ninth not being included below due to being reported by SEPA as <10.

Kirkwall historically experienced coastal flooding but is now counted under surface water flood risk by SEPA due to the installation of flood defences to protect against coastal flooding. While there is a flood protection scheme in place and manages much of the risk associated with coastal flooding, there remains a risk to parts of Kirkwall through the effects of climate change. Surface water flooding is increased due to high sea levels and this could also increase in the future due to higher sea levels. A significant and increasing number of people, homes and businesses are at risk of flooding from surface water by the 2080s.





Topic 4: Soils and Geodiversity

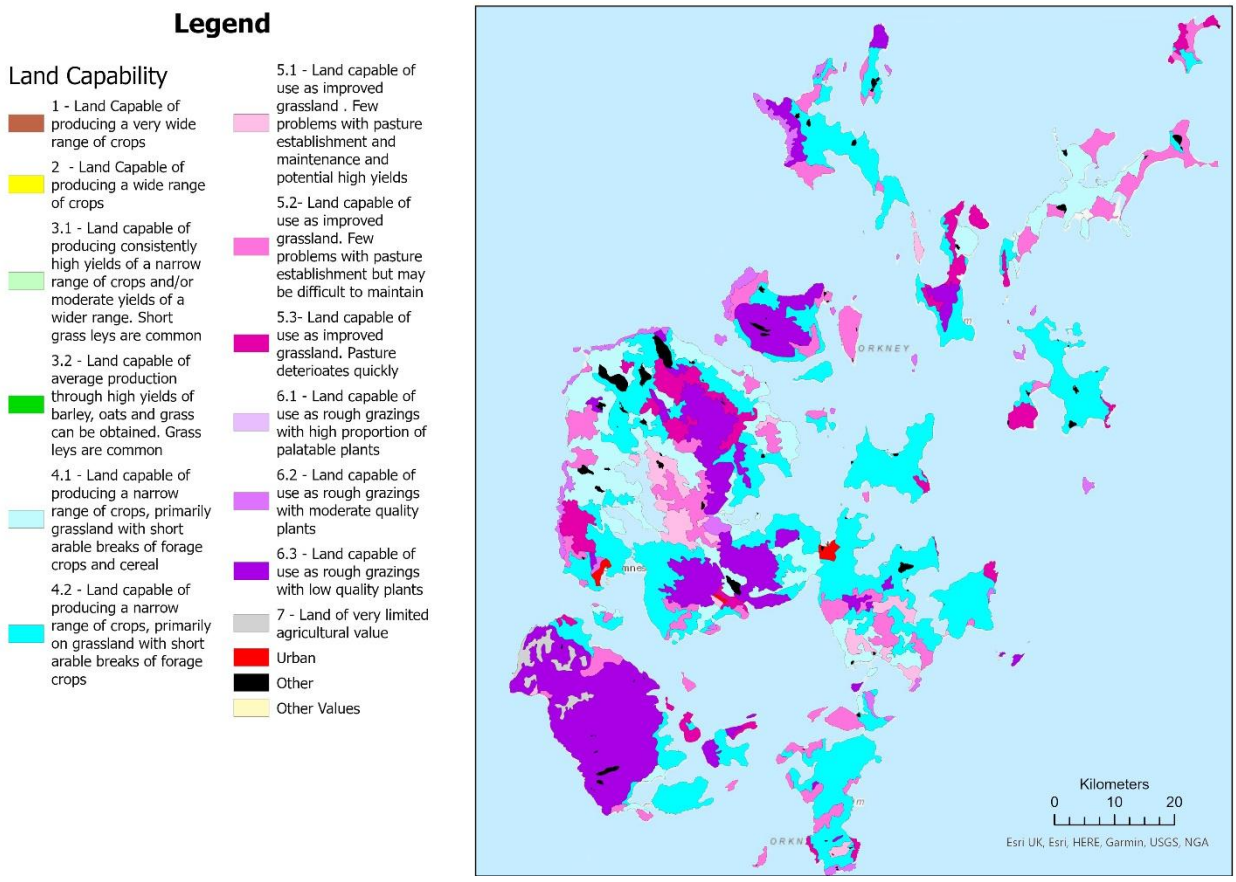
Importance of soils

Soils are the foundation for many resources that humans and nature rely on. They provide a place for vegetation to grow, creating food for people and wildlife. They have an important part in atmospheric systems and the water cycle.

Soils also have a vital role to play in carbon capture and tackling the effects of climate change. They, and the organisms that live within soil and are critical to its healthy functioning, are however fragile and easy to damage or destroy.

Land capability for agriculture

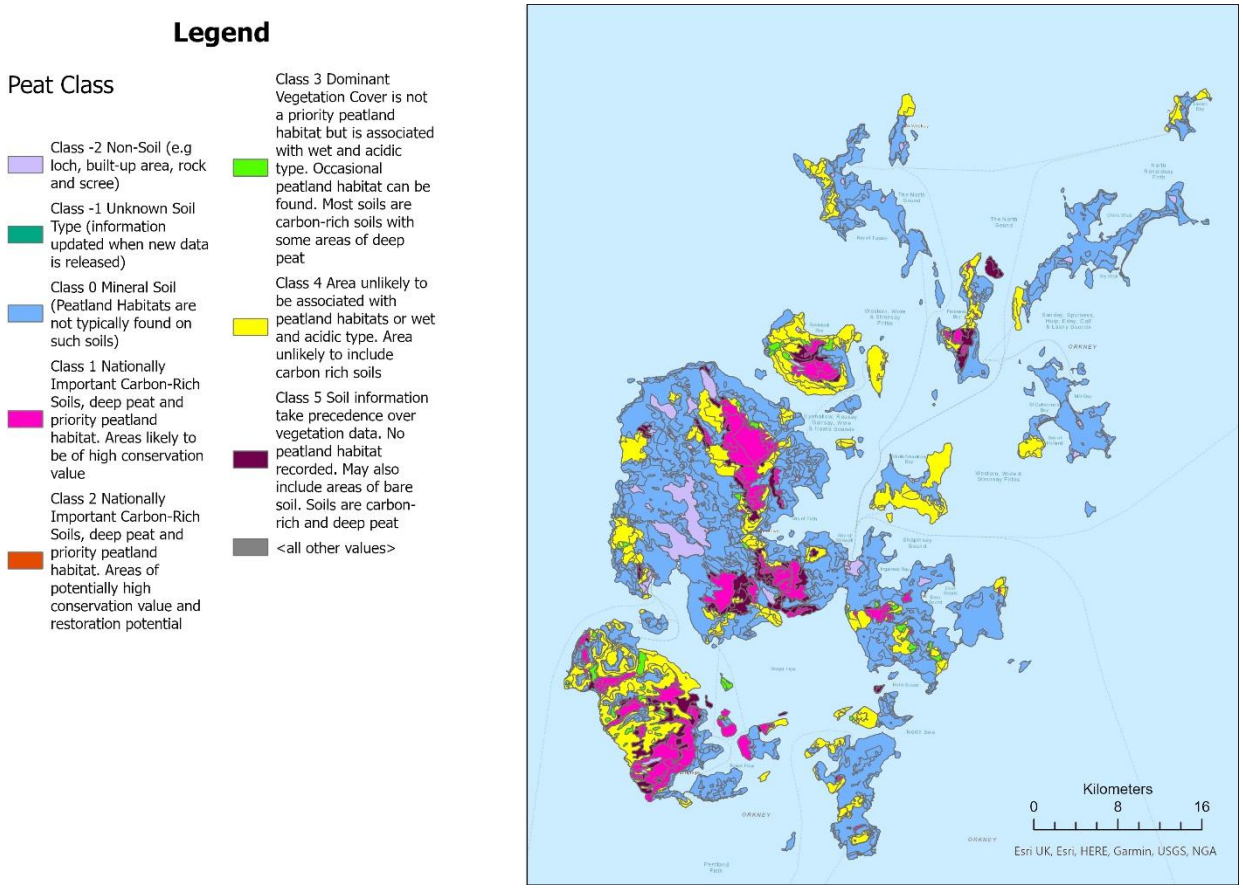
Land is classified by its capability for supporting different forms of agriculture, from livestock grazing to crop growing. The majority of the land in Orkney is between classes 4.1 and 5.3 (primarily grassland but capable of producing a narrow range of crops, to capable of use as improved grassland with varying levels of difficulty in establishment and maintenance), with some areas of 6.3 (rough grazing). There is a small area of land with very limited agricultural value (capability 7), mainly on Hoy. There is no land above class 4, meaning that there is no ground capable of supporting high yields of arable crops. However the soils in Orkney are known for being fertile, and supporting livestock, dairy and vegetable businesses.



Carbon rich soils

Carbon rich soils, such as peat and peaty soils, are an important store of carbon. Once their structure is damaged and the soil exposed, they release the stored carbon back into the atmosphere, adding to emissions that contribute to climate change.

Orkney has some areas of peatland and peaty soils, mainly associated with heath habitats that have not been directly modified by agriculture or other land management.



Geodiversity

The variety of rocks, fossils and soils laid down over time create landforms and geodiversity. Erosion, acidification and exposure or damage caused during land use activities can threaten the integrity of geodiversity interests. Geological features are also important for tourism and attracting visitors to Orkney, such as the infamous Old Man of Hoy sea stack.

There are 16 recognised areas of geological interest in Orkney. Of these, 12 are protected as part of Sites of Special Scientific Interest (SSSIs) that include geological features as part of their reasons for notification. There are also 11 Local Nature Conservation Sites (LNCS) with geological interests identified amongst their reasons for identification.

Topic 5: Material Assets

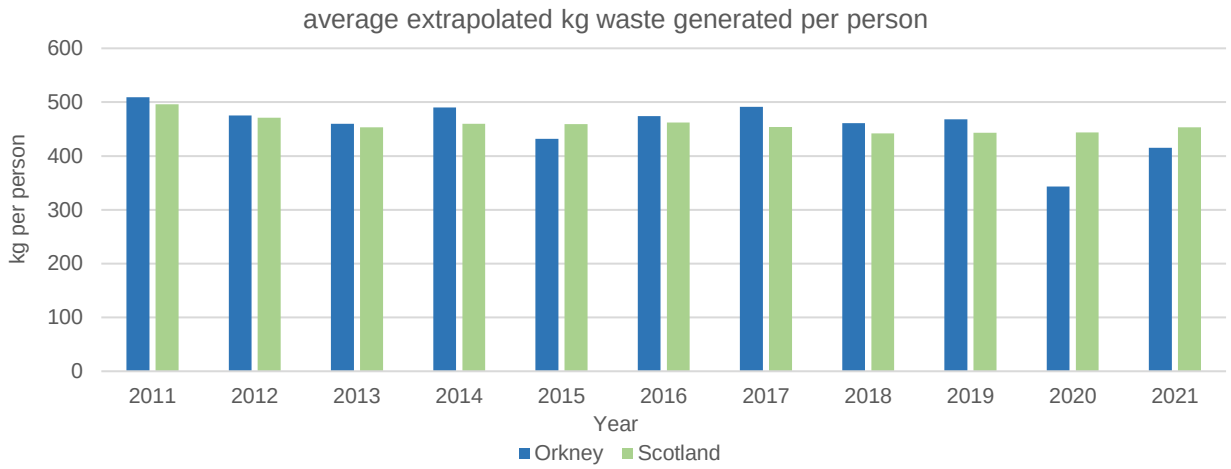
Geological mining resources

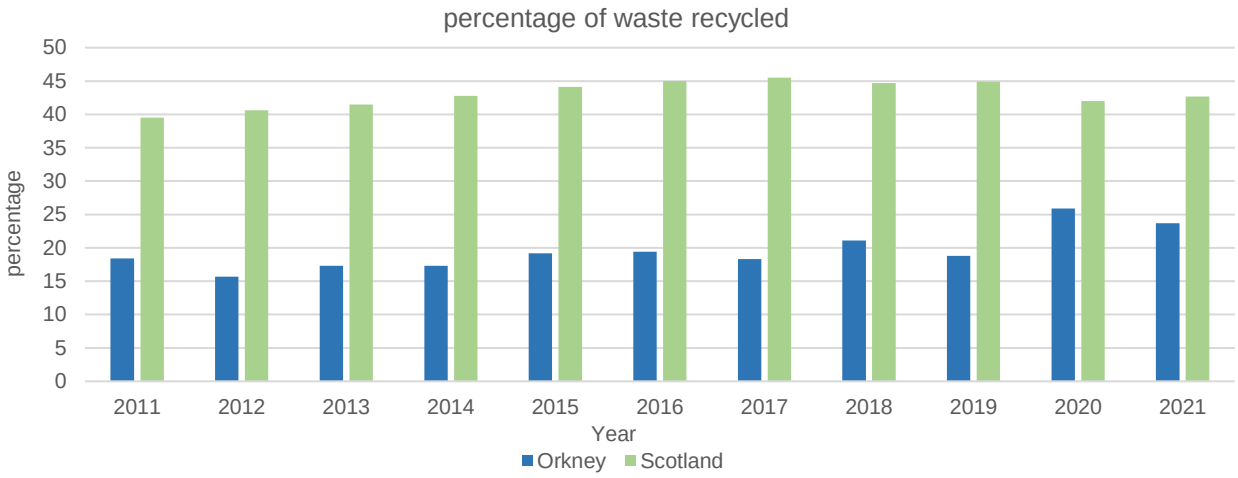
According to the British Geological Society Directory of Mines and Quarries 2020, there were five active quarries in Orkney between July and December 2019. Four were for aggregate, building stone and/or flagstones, with one being for peat for the whisky industry.

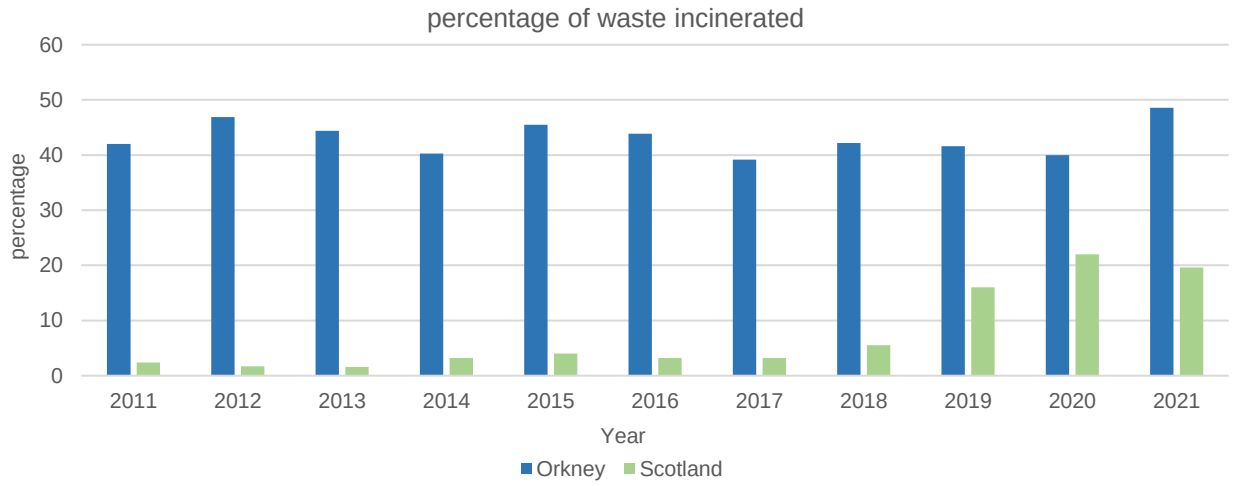
Quarry name	Material quarried	End use(s)	Permitted volume
Hobbister Moor Peat Workings	peat	energy source (distillery)	300 tonnes per annum
Gairsty B Quarry	siltstone, mudstone and sandstone, calcareous, Devonian, Sandwick Fish Bed Member, Lower Stromness flagstone formation	building stone, flagstone	15,000 tonnes per annum
(aka Dale, The) Bu Links Quarry	sand, quaternary, beach sand	as dug aggregate (building sand)	15,000 tonnes per annum
Cursiter Quarry	flagstone, Devonian, upper Stromness flagstone formation, (upper Caithness flagstones)	coated roadstone, dimension stone, crushed rock aggregate	average 95 tonnes per annum
Heddle Quarry	sandstone, Devonian, upper Stromness flagstone formation, upper Caithness flagstones	concrete aggregate, crushed rock aggregate, coated roadstone	100,000 tonnes per annum
Banks Quarry	siltstone, mudstone and sandstone, Devonian, upper Stromness flagstone formation (upper Caithness flagstones)	building stone	unknown

Waste and recycling

Orkney produces a comparable weight of waste per person to Scotland. However Orkney recycles a significantly lower proportion of that waste, with a greater proportion being transported to Shetland for incineration in their energy recovery plant.


average extrapolated kg waste generated per person
600
500
400
300
200
100
0
kg per person
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Year
Orkney
Scotland


percentage of waste recycled
50
45
40
35
30
25
20
15
10
5
0
percentage
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Year
Orkney
Scotland


percentage of waste incinerated
60
50
40
30
20
10
0
percentage
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
Year
Orkney
Scotland

Water treatment works

There are nine water treatment works in Orkney, supplying fresh water to homes and businesses, with 29 wastewater treatment plants dealing with effluent. Data provided by Scottish Water in December 2022 identified four of the water treatment works and six of the wastewater treatment plants are operating over capacity, which may affect future development.

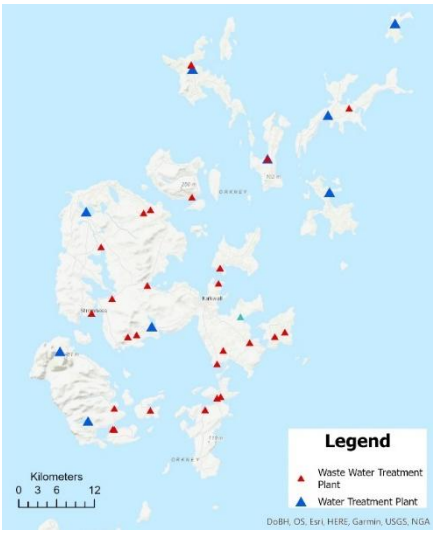
Renewable energy generation

Orkney makes good use of the renewable energy sources such as wind and solar, with the European Marine Energy Centre also providing a grid connected testing ground for marine renewable energy technologies. Despite there being only 4 commercial scale wind turbines/wind farms in operation, according to the Orkney Renewable Energy Forum Orkney has “more than 760 small-scale wind turbines and 370 solar panels in the county. As a result, approximately 10% of the population are generating their own power and as a whole Orkney hosts 10% of the UK’s domestic wind turbines” (October 2024). Combined, this means that since 2013 Orkney has frequently generated more electricity through renewable means than it consumed.

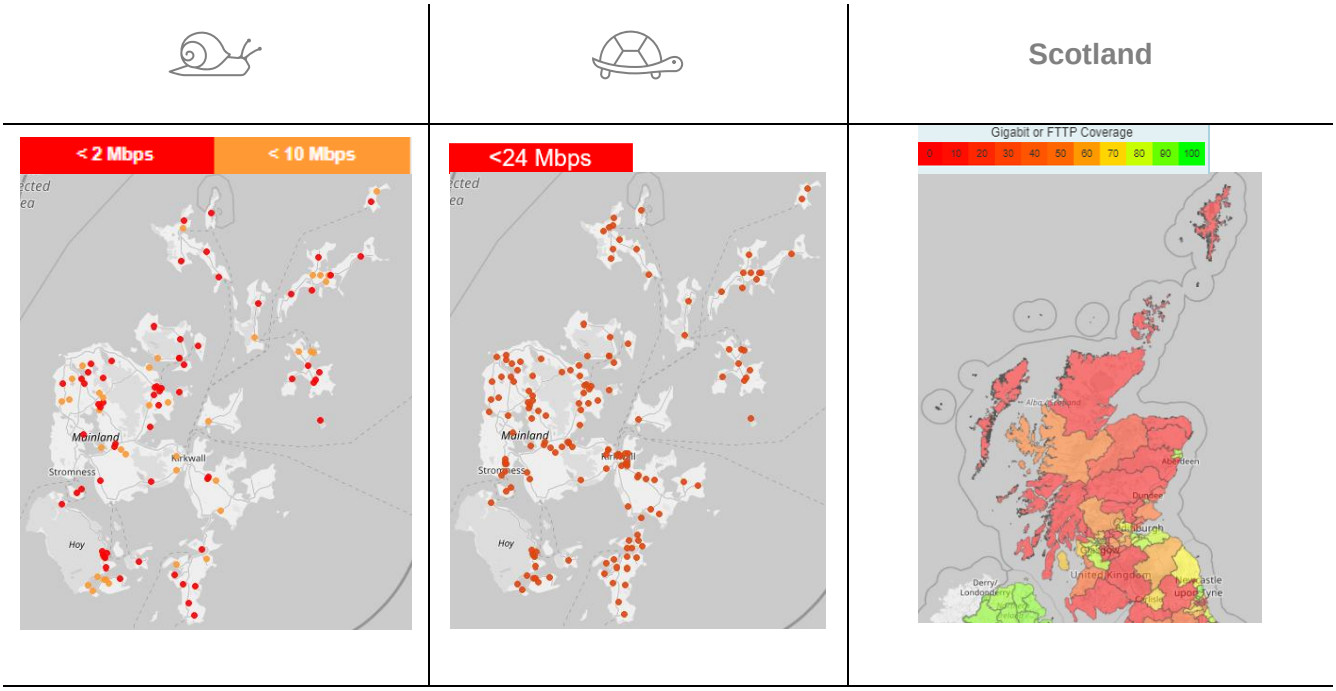
Mobile and digital connectivity

There is a disparity between those living in the central belt and those in other areas of Scotland in relation to digital connectivity. Orkney currently has a significant number of postcode areas with speeds below the 24 megabits per second (Mbps) broadband speed previously set by the EU as ‘superfast’ (the definition has subsequently been increased to 30 Mbps).

This includes numerous post code areas with very low speeds of <10 and <2 Mbps. Scottish Government have committed to providing 100% access to superfast broadband coverage under the Reaching 100% (R100) programme



https://www.gov.scot/news/delivering-faster-internet/, with R100 contracts expected to be completed in 2028.



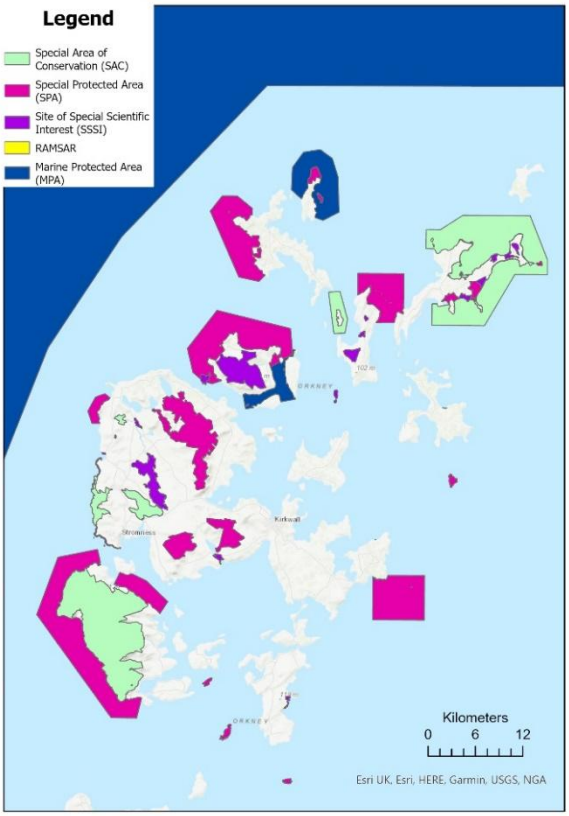
Maps correct at January 2023: Leaflet| ©OpenStreetMap contributors, Points © 2012 LINZ, Data © thinkbroadband.com

Topic 6: Biodiversity

Areas protected for nature conservation

There are 54 areas protected for nature conservation plus 3 Marine Protected Areas (MPAs) in Orkney, based on land and the surrounding sea. Some of these sites have multiple designations overlapping the same or similar areas.

Condition data is not available for MPAs. However the condition of the other protected areas could be seen as providing a reflection of the state of biodiversity in the Council area, and what pressures biodiversity outside of protected areas might be facing. The number of protected areas with features in unfavourable condition has remained fairly consistent at around 50% since 2010.



		2024		2020		2010	
	Protected areas	**Number with all unfavourable feature(s)**	**Number with all features favourable**	**Number with all unfavourable feature(s)**	**Number with all features favourable**	**Number with all unfavourable feature(s)**	**Number with all features favourable**
Ramsar	1	0	1	0	1	1	0
SPA	13	10	3	10	3	9	4
SAC	4	1	3	1	3	1	3
SSSI	36	17	19	17	19	14	22
Total	**54**	**28**	**26**	**28**	**26**	**25**	**29**

A wide range of pressures are affecting features, with those related to climate change, native invasive species, agricultural operations and water management affecting multiple features.

X 8 agricultural operations	X 5 grazing (over)	X 4 grazing (appropriate level)	X 1 grazing (under)

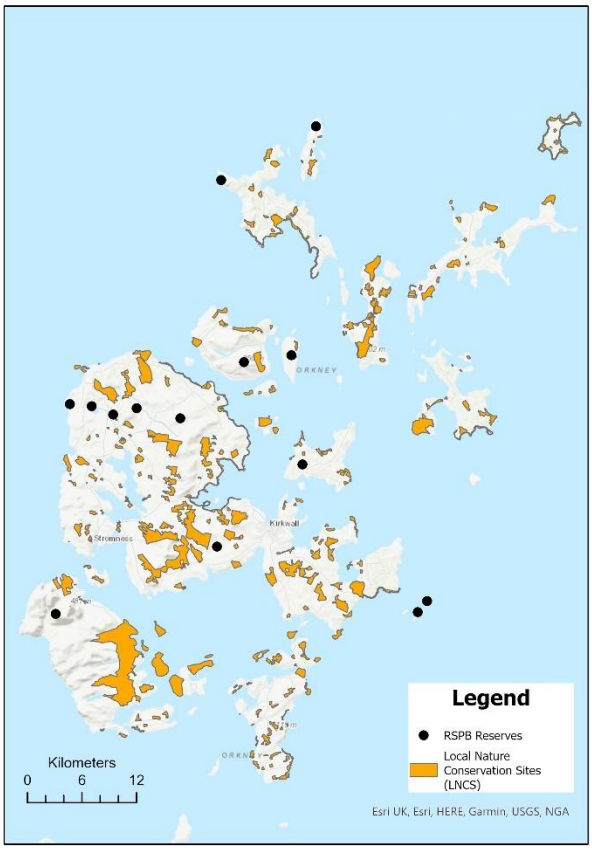
 X 8 presence/changing extent invasive species (native)	 X 2 presence or changing extent of invasive species	 X 1 presence/changing extent invasive species (non native)	 X 1 lack of remedial management
 X 8 climate change	 X 3 natural event	 X 1 plant pests and diseases	 X 1 interspecific competition
 X 7 water management	 X 4 water dependant pressure (diffuse source pollution)	 X 1 water dependant pressure (flow regulation)	 X 1 water dependant pressure (point source pollution)
 X 3 dumping/spreading /storage of materials	 X 2 mineral extraction	 X 1 geological core extraction	 X 1 fossil collection
 X 2 trampling	 X 1 fishing (recreational)	 X 1 recreation disturbance	 X 1 burning

Other areas important for biodiversity

There are also 248 Local Nature Conservation Sites (LNCS) identified by the Council as being locally important for biodiversity (and geological) interests. RSPB have 12 reserves throughout Orkney managed for biodiversity not just birds.

Woodland

Much of the woodland of Orkney disappeared thousands of years ago with the increase in human habitation. Scattered scrub exists throughout the mainland and large trees (mainly sycamore) can be found in and around the main settlements due to the shelter that buildings provide. There are also several mixed woodlands, plantation and a native woodland. All of these contribute to the variety of habitats that support biodiversity. Some are also promoted as places for people to visit.

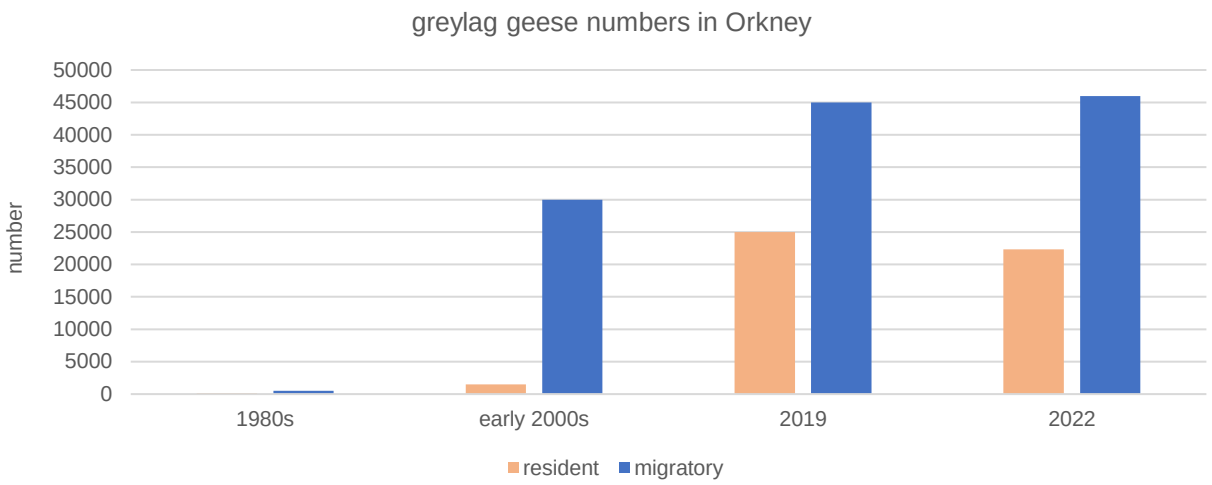


Other issues affecting biodiversity

Geese are often associated with winter migration. However resident breeding greylag geese were once present all year round throughout the UK. Changes in land use and hunting meant that by the mid-nineteenth century, numbers of resident greylag geese had significantly reduced with very small numbers remaining in some of the Outer Hebrides and north western Scotland. Since then, numbers and range of resident greylag geese has increased naturally, supplemented by reintroductions.

Migratory greylag geese also spend the winter in Orkney. In the early 1990s it was estimated that around 1% of the national wintering population were found in Orkney.

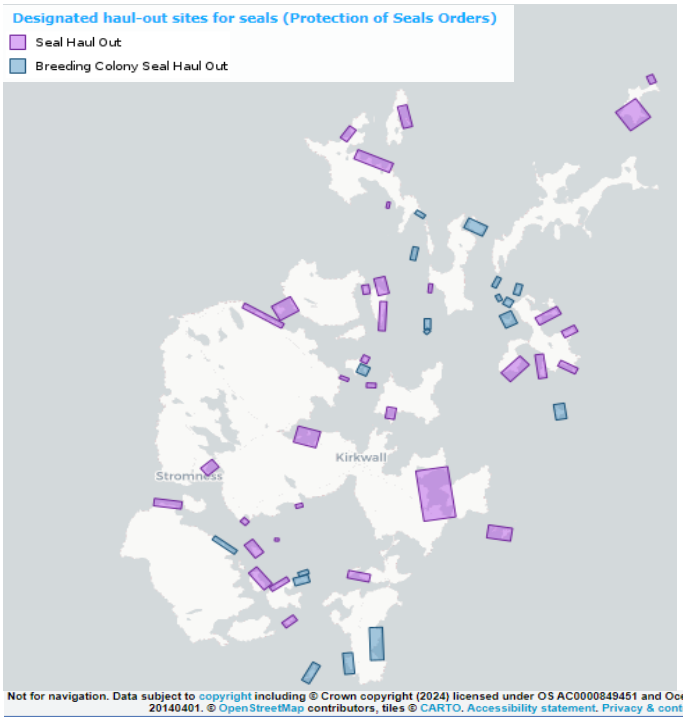
However this proportion has significantly increased, with around 60% of the national wintering population now estimated to be found in Orkney. The contemporary estimated combined migratory and resident population of 70,000 birds in winter causes adverse effects on agriculture, trampling and eating grass and crops. There are also concerns about the effects of increasing numbers of breeding geese on birds that nest in the same habitat. Culling and other population management measures are being used to try and reduce the resident greylag goose population.



Marine environment

There are 81 priority marine features (PMF) in Scottish waters that have policy protection through the need to conserve biodiversity, 32 of which occur in Orkney inshore waters. As well as being important for biodiversity, PMF provide ecosystem services such as being a carbon sink, natural coastal defence, nursery habitat, providing products for human use, supporting tourism, etc. Some PMF are also legally protected as protected species or as a feature of an area protected for nature conservation. PMF can be habitats, single species, or a combination of both habitats and species. Knowledge of where PMF occur is not comprehensive as not all areas have been surveyed.

Locations in Orkney have also been designated as haul out sites important to seals for breeding and/or resting. However not all areas used by seals have been identified and there are many more around Orkney's coast that are not mapped.

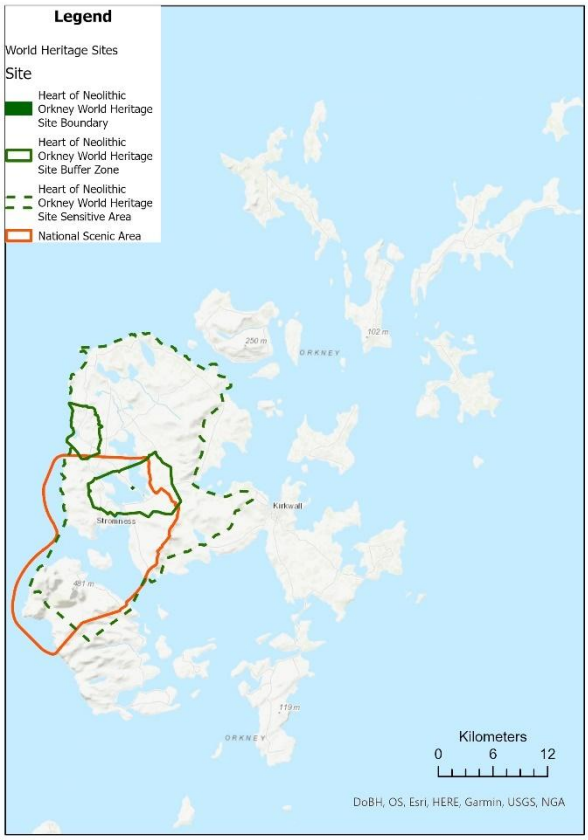


Topic 7: Landscape and cultural heritage

International and nationally important sites

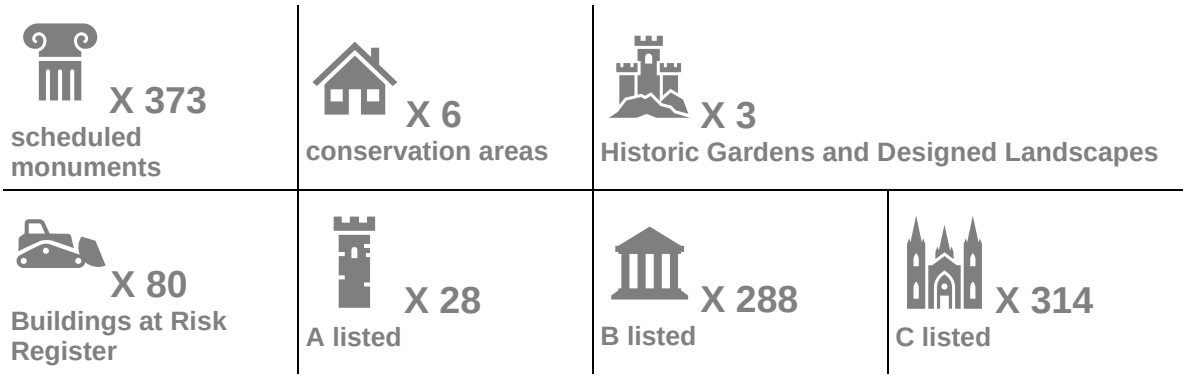
The area around the neolithic sites of Maeshowe, Ring of Brodgar, Stones of Stenness and Skara Brae have been identified as a World Heritage Site, known as the Heart of the Neolithic. The immediate and wider landscape setting of these monuments is of importance, as is finding a way to ensure that tourism is at sustainable levels that do not cause harm while still contributing to the local economy.

Hoy and part of the west mainland is recognised as being a nationally important landscape, designated as the Hoy and West Mainland National Scenic Area. It has eleven special qualities related to the coastal, agricultural and historic archaeological landscape.



Historic and built heritage

Orkney has a wide number and variety of historic and build heritage, including less common heritage such as World War II buildings, grain mills and the A listed St Magnus Cathedral, parts of which date from the 11th century. While much of the built heritage is designated, some is not and is at risk due to effects of weather and lack of use/maintenance.



Topic 8: Population and human health

Datazones

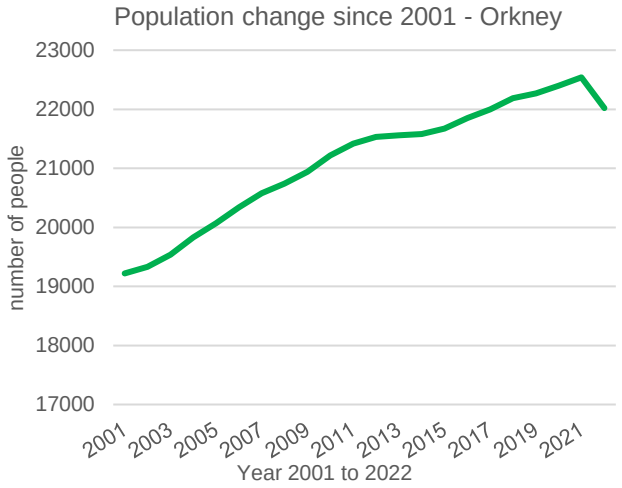
Statistical population data is collected at a national level by Scottish Government and associated organisations, either annually or every decade as part of the census. Each geographic area is split into different datazones, which usually contain around 500 to 1000 people but vary in size depending on population density. The boundaries and numbers of datazones are amended over time to reflect changing population levels. Orkney currently has 29 datazones.

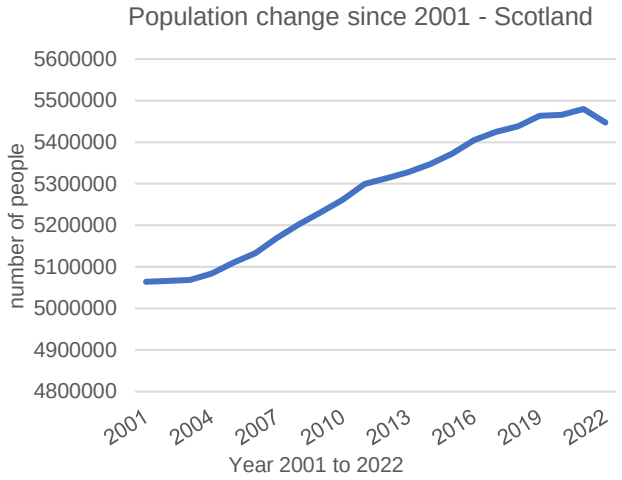
Code	Datazone name [and indicative location]	Code	Datazone name [and indicative location]
S01011804	**Stromness, Sandwick and Stenness - 01** [Stromness town]	**S01011819**	**West Kirkwall – 02** [Kirkwall town]
S01011805	**Stromness, Sandwick and Stenness - 02** [Stromness town]	**S01011820**	**West Kirkwall – 03** [Kirkwall town]
S01011806	**Stromness, Sandwick and Stenness - 03** [Stromness town]	**S01011821**	**West Kirkwall – 04** [Kirkwall town]
S01011807	**Stromness, Sandwick and Stenness - 04** [north and east of Stromness]	**S01011822**	**West Kirkwall – 05** [Kirkwall town]
S01011808	**West Mainland - 01**	**S01011823**	**East Kirkwall – 01** [Kirkwall town]
S01011809	**West Mainland - 02**	**S01011824**	**East Kirkwall – 02** [Kirkwall town]
S01011810	**West Mainland - 03**	**S01011825**	**East Kirkwall – 03** [Kirkwall town]
S01011811	**West Mainland - 04**	**S01011826**	**East Kirkwall - 04** [Kirkwall town]
S01011812	**West Mainland – 05** [including Gairsay]	**S01011827**	**Isles – 01** [Hoy, South Walls, Graemsay, Flotta]
S01011813	**East Mainland - 01**	**S01011828**	**Isles – 02** [South Ronaldsay]
S01011814	**East Mainland - 02**	**S01011829**	**Isles – 03** [Burray]

S01011815	**East Mainland - 03**	**S01011830**	**Isles – 04** [Rousay, Egilsay, Wyre, Eynhallow, Shapinsay]
S01011816	**East Mainland – 04** [Carness, Head of Work]	**S01011831**	**Isles – 05** [Stronsay, Sanday, North Ronaldsay]
S01011817	**East Mainland – 05** [west of Kirkwall]	**S01011832**	**Isles – 06** [Eday, Westray, Papa Westray]
S01011818	**West Kirkwall – 01** [Kirkwall town]		

Population

Although the trend in population change is similar between Scotland and Orkney, between 2018 to 2022 Orkney has seen an overall 3.1% increase compared to Scotland's 1.4%. The upwards trend seen up to 2021 is however not distributed equally throughout Orkney, as between 2017 and 2021 (the latest period that datazone level data is available), 11 datazone areas saw an overall decline of between -0.1 to -7.8% (-1 to -84 people), while 17 datazone areas saw increases of between 0.1 and 10.7% (+2 to +90 people). One datazone, the area to the west of Kirkwall, saw the largest increase of 35.2% (+208 people). The population of both Orkney and Scotland have subsequently taken a downward trend in 2022.





Although the populations of Orkney and Scotland have increased, this is down to inward migration as the death rate has exceeded the birth rate.

	2018	201			2	2023
Orkney births	186	182	183	171	163	162
Orkney deaths	226	232	254	254	278	277
Orkney deaths versus births	-40	-50	-71	-83	-115	-115

	2018	2019	2020	2021	2022	2023
Scotland births	51308	49863	46809	47786	46959	45935
Scotland deaths	58503	58108	64093	63587	62941	63445
Scotland deaths versus births	-7195	-8245	-17284	-15801	-15982	-17510

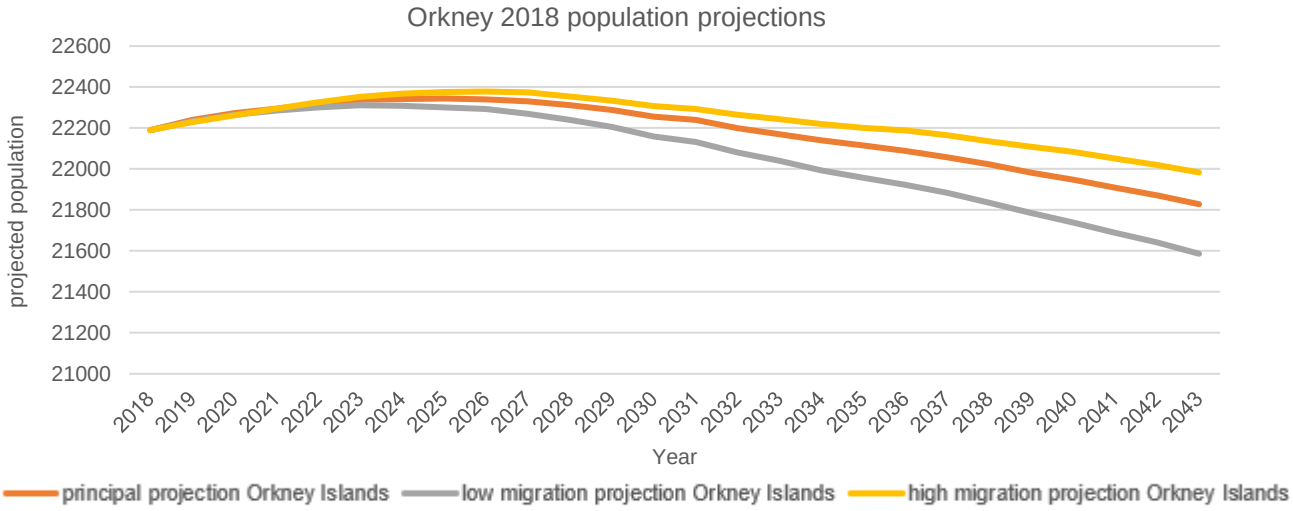
Approximately 49.1% of the Orkney population (2022 data) were male, and 50.9% female. This is comparable to the Scottish population. However in 2021 there were proportionally more females over 65 years old in Orkney (52.3%) than males (47.7%) compared to Scotland (54.9 and 45.1% respectively).

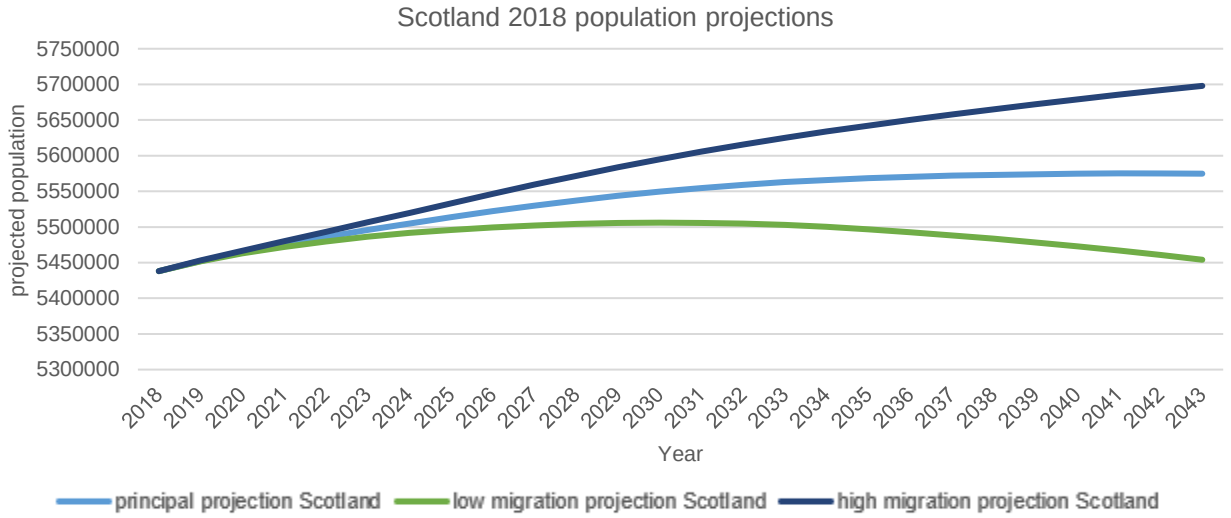
	Orkney		Scotland	
population	50.3%	49.7%	51.2%	48.8%
0-15 years	48%	52%	48.8%	51.2%
16–65 years	50.1%	49.9%	50.8%	49.2%
66+ years	52.3%	47.7%	54.9%	45.1%

Orkney also has a smaller proportion of the population at what is commonly considered to be working age and a greater proportion of the population at typical retirement age (2022 data).

	0-15 years	16-65 years	65+ years
Orkney	15.8%	59.1%	25%
Scotland	16.4%	63.5%	20.1%

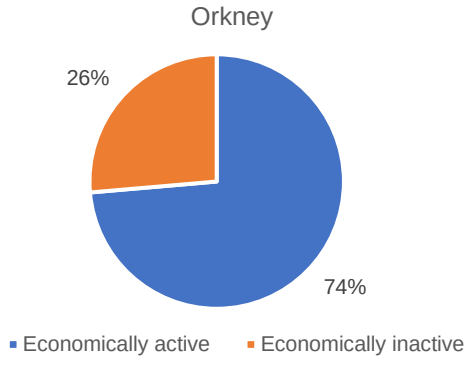
Population projections (2018 projection) predict that the Orkney population will start to decline in around 2027 and continue to decrease to 2043. This is for low and high migration rates, and principal projection. In contrast the Scottish population is predicted to increase to 2036 before plateauing to 2043 (principal projection), continue to increase with high migration but decline from around 2036.

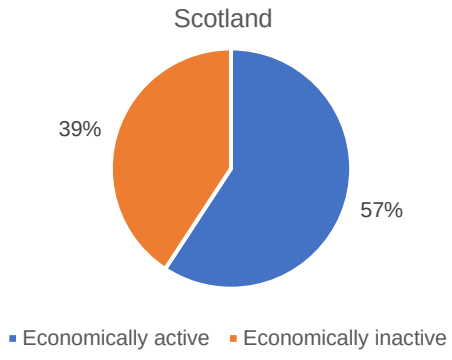




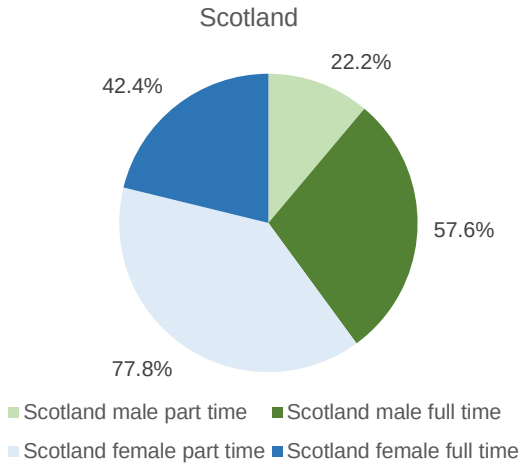
Employment

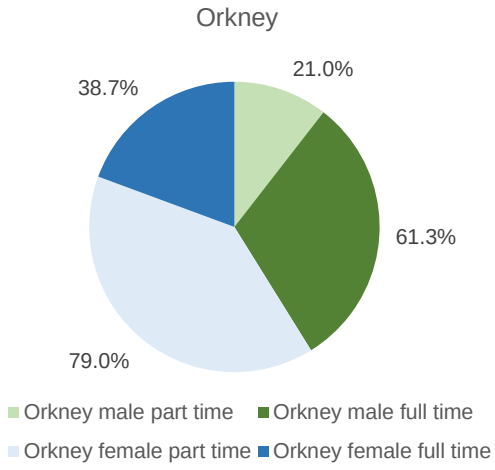
The 2022 Census found that, when compared to Scotland, Orkney has proportionally fewer people who were economically inactive (eg retired, unable to work) and more who were economically active. The Census also found that 1% of the population were unemployed in Orkney compared to 2% in Scotland.

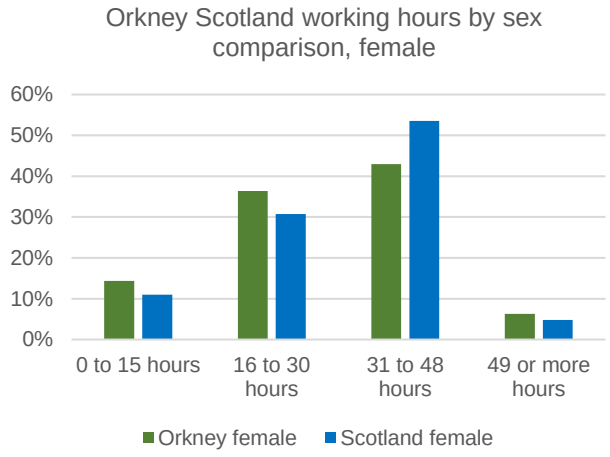


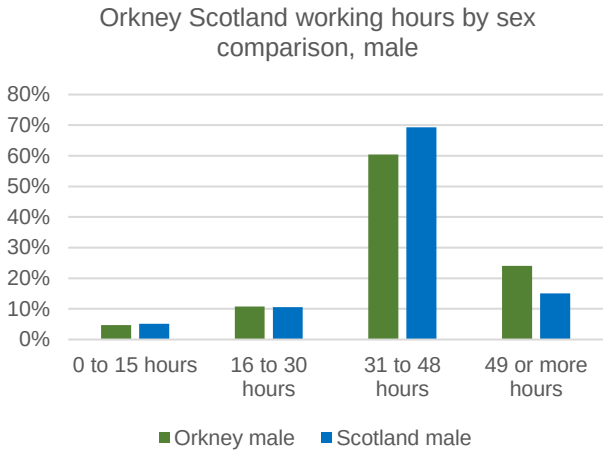


Of those working, in 2022 the Census showed that the proportions of males and females working full and part time were similar between Orkney and Scotland. However there was a marked difference between male and female hours worked, with more males working full time and working longer hours than females.

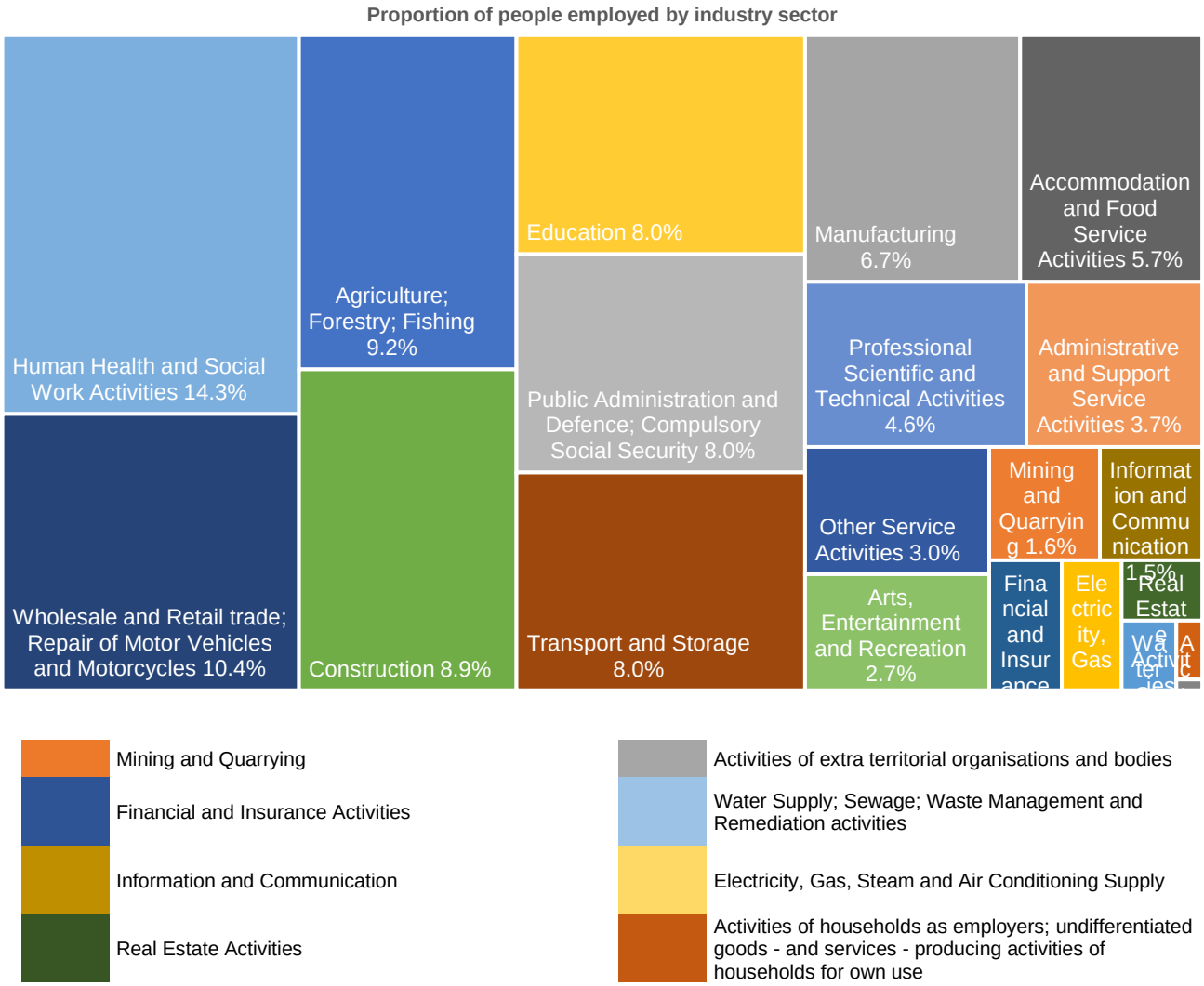








Four industrial sectors make up nearly half of the employment market, with human health and social work being the largest sector, then the wholesale and repair trade, the agriculture forestry and fishing sector, and the repair of motor vehicles sector. The agriculture sector (9.2%) and the transport and storage sector (8%) are more important in Orkney compared to Scotland (1.6% and 4.9% respectively), with the finance and insurance activities sector being less important (1.2% in Orkney compared to 4.3% in Scotland). The agricultural sector is more important on the isles (20.5%) compared to mainland Orkney (2.9 - 9.8%).



It is predicted that in the mid-term (2023 – 2026) the Orkney workforce will increase by 3.2% (compared to 2.2% for Scotland), and between 2026 and 2033 will decline by 0.9% (compared to a 0.9% increase for Scotland), with losses predicted to occur in the public administration and manufacturing sectors. Agriculture, forestry and fishing remains a dominant sector in Orkney.

	expansion	replacement
2023 - 2026	**+300**	**+700**
main sectors	agriculture forestry and fishing; wholesale and retail trade, repair of vehicles	wholesale and retail trade, repair of vehicles; human health and social work; administrative and support services; accommodation and food services
2026 - 2033	**-100**	**+2,220**
main sectors	agriculture forestry and fishing; wholesale and retail trade, repair of vehicles; transportation and storage	wholesale and retail trade, repair of vehicles; human health and social work; administrative and support services;

Housing

The number of dwellings in Orkney has risen from 9,726 in 2006 to 11,719 in 2023. A lower proportion are occupied compared to Scotland, with more vacant and second homes.

	occupied dwellings	second homes	vacant	single adult discount
Orkney	90%	4%	5.6%	35%
Scotland	96%	0.9%	3.4%	39%

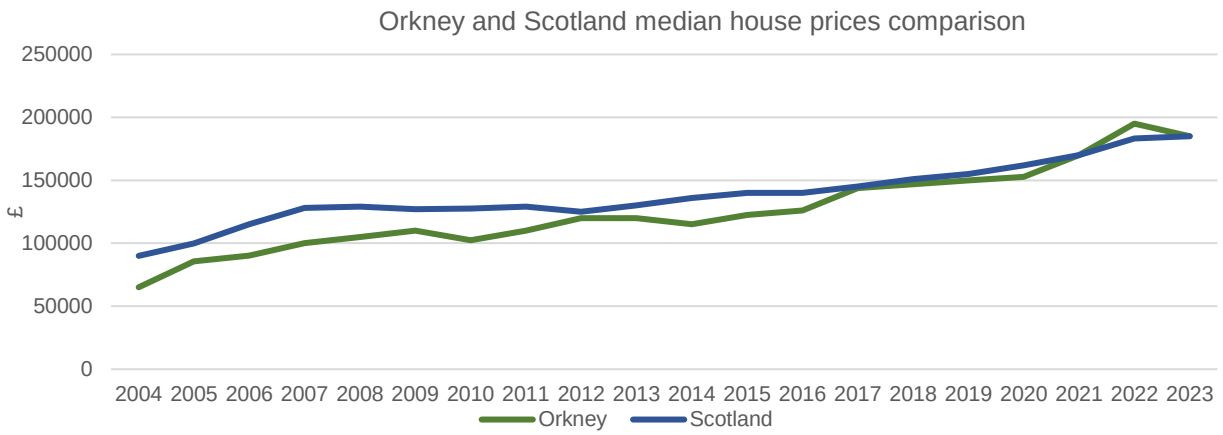
The largest proportion of dwellings have between 3 and 5 bedrooms in Orkney.

bedrooms	1	2	3	4	5+
Orkney	12.4%	35.3%	34.6%	13.4%	3.8%
Scotland	12.9%	27%	37%	17.7%	5.8%

The condition and affordability of housing stock are factors that influence human health. Similar to the rest of Scotland, based on the latest data (2018) many dwellings in Orkney required repairs of varying levels of significance.

	any disrepair	disrepair to critical elements	extensive disrepair	urgent disrepair
Orkney	59.3%	41.2%	11.1%	23.3%
Scotland	69.8%	50.9%	5.7%	29.6%

Although Orkney house prices were historically significantly less than the Scottish median, Orkney house prices have risen at a similar rate to those in Scotland over time, with two marked increases in 2012 and 2017 bringing them closer to Scottish levels. The Office for National Statistics uses 5 times the disposable income as a measure of house purchase affordability. The 2022 the figure for Scotland was 4.78 times the disposable income for low house prices, 5.29 for mid-priced houses, and 5.87 for high priced houses (no figures are available for Orkney), indicating that housing is more affordable for those on lower incomes than those on mid and higher incomes.



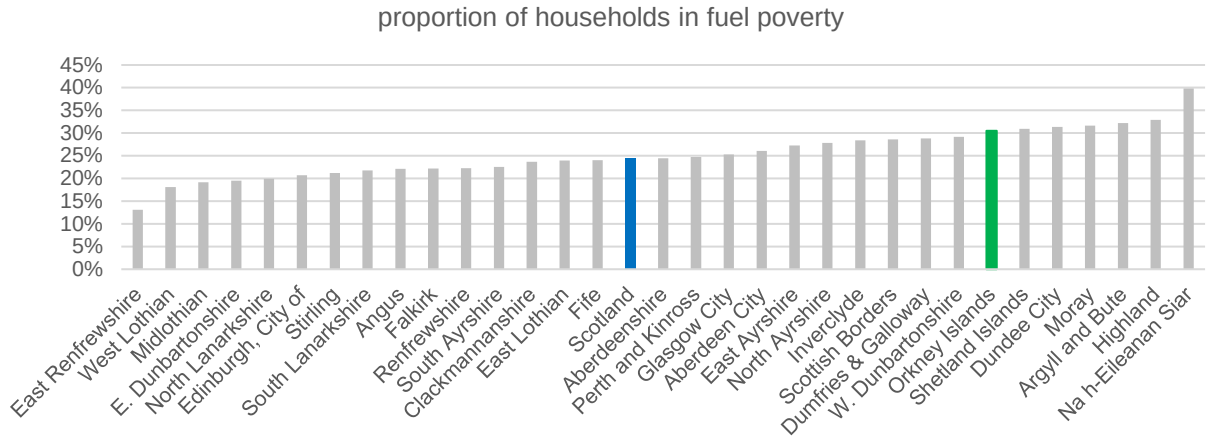
Living costs

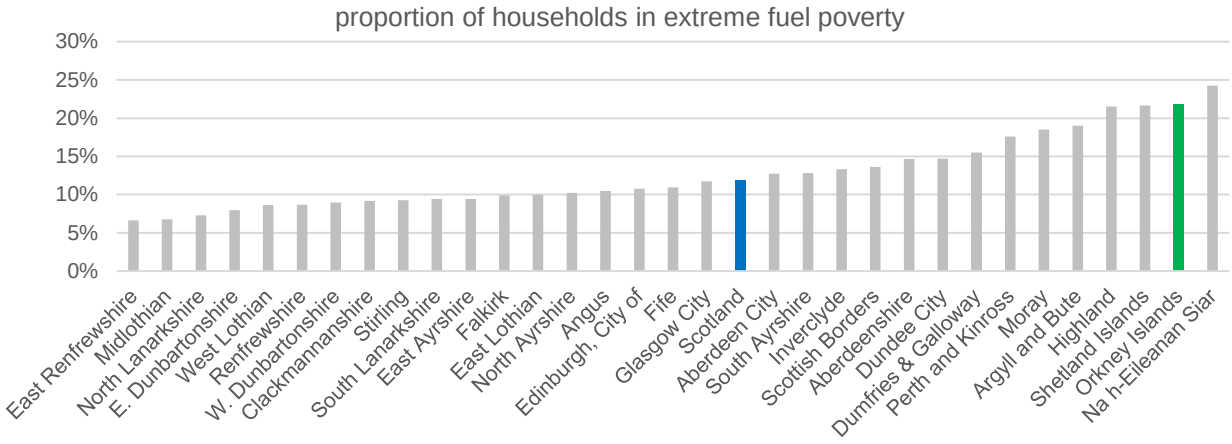
Research into additional cost of food, clothing, travel, household goods and social participation associated with living on an island found variation between different demographic groups, with single pensioners and families with children facing the greatest additional living costs.

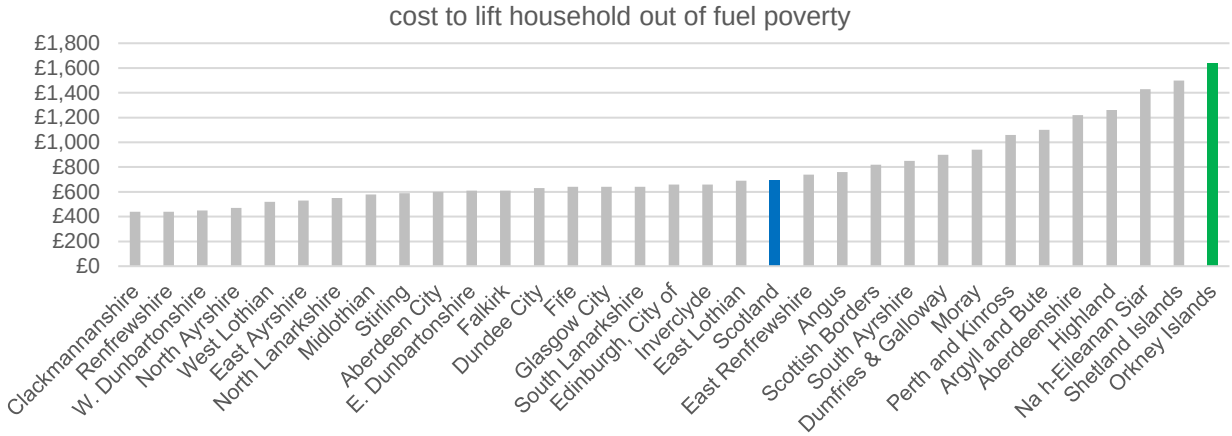
costs compared to urban areas	food	clothing	travel	household goods	social participation	overall extra cost
islands such as Orkney	+5 – 13%	+12 – 34%	+28 – 185%	+10 – 22%	+1 – 45%	14 – 37%
remote rural mainland Scotland	+2 – 4%	+10 – 18%	54 – 251%	+4 – 10%	+1 – 17%	16 – 30%

The above does not include household fuel costs. A significant proportion (31%) of Orkney households are also considered to be in fuel poverty, based on 2023 information. The Scottish Government definition of fuel poverty is that in order to maintain satisfactory heating, total fuel costs necessary for the home are more than 10% of the household's adjusted net income (after housing costs), and if after deducting fuel costs, benefits received for a care need or disability and childcare costs, the household's remaining adjusted net income is insufficient to maintain an acceptable standard of living. Extreme fuel poverty uses the same definition but 20% of net income.

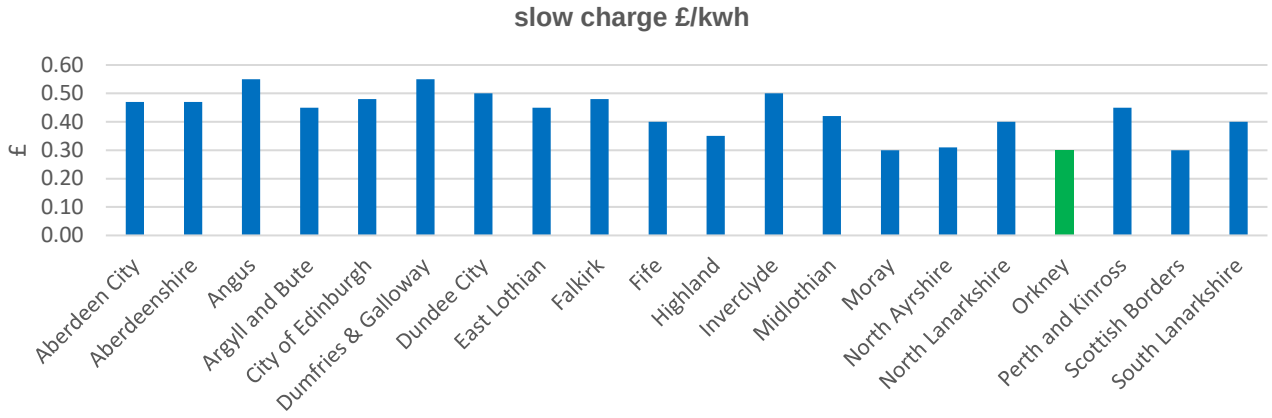
Analysis of 2017 to 2019 data for the Scottish House Condition Survey found 22% of Orkney households were in extreme fuel poverty compared to 12% in Scotland. It also found that it would take a significant uplift in income to move households out of fuel poverty. This is likely to have been exacerbated by subsequent fuel price rises and the cost of living crises.







In relation to fuel for transport, comparison data is not available for petrol and diesel. However Orkney is one of the least expensive for slow charging an electric vehicle at a local authority owned charge point.



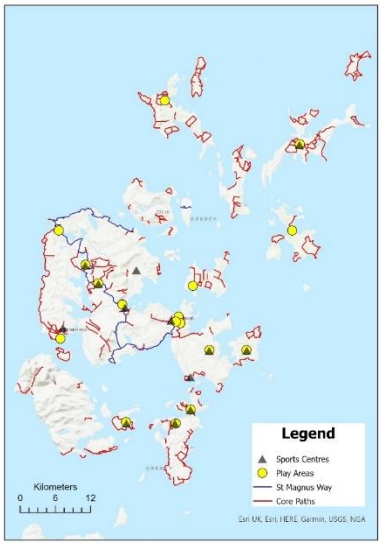
Transport

Although there is only one promoted cycle route in Orkney, there is an extensive road network managed by the Council. Mainland bus routes are run by Stagecoach with a community dial-a-bus service, as well as community bus services on Westray, Sanday and Hoy. Orkney is well connected with flights and ferries externally to mainland Scotland and also internally between the islands.

one Sustrans promoted cycle route round mainland Orkney	**10 public bus routes in mainland Orkney**	**3 island community bus services, plus mainland dial-a-bus service**
13 services to isles, plus 4 routes to mainland Scotland	**984.51km of public roads**	**6 routes to isles plus 4 connections to Scotland**

Recreation opportunities

In addition to informal outdoor recreation opportunities on beaches, paths, public parks and play areas, Orkney is well served by 11 leisure or healthy living centres, 13 playing fields, and 6 public swimming pools. There are also a number of companies providing outdoor sports training and experiences.



Access to services

Based on 2018 data (the latest available), the time it takes to get to services such as a GP and post office are comparable across the mainland and isles, although travelling by public transport takes longer than by private car. Where disparities occur is in time taken to get to secondary school and to a retail centre, with residents on many of the isles facing a significantly longer travel times than mainland residents.

	shortest time (minutes)				longest time (minutes)			
	by car		by public transport		by car		by public transport	
	Mainland	Isles	Mainland	Isles	Mainland	Isles	Mainland	Isles
GP	1.4	3.8	5.4	11.1	16	8.5	37.4	25.8
post office	1.4	3.8	5.3	12.6	9.3	8.3	21.6	24.2
retail centre	1.5	18	4.9	28.9	23.2	146.5	47.9	162.7
petrol station	1.2	3.9	n/a		10.6	25.6	n/a	
primary school	2	2.6	n/a		7.7	16.3	n/a	
secondary school	2	9.4	n/a		22.5	100.2	n/a	

Data and information sources

Topic	section/chart	data source
Topic 1: Climatic Factors	greenhouse gas emissions maps	https://naei.beis.gov.uk/emissionsapp/
	emissions over time, kt CO2e sectoral emissions	https://www.gov.uk/government/collections/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics
	historic climatic trends (temperature, rainfall, wind)	https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gfmzqh0rc
	future climatic projections	https://ukclimateprojections-ui.metoffice.gov.uk/products
	coastal change	https://www.arcgis.com/apps/dashboards/defe901982154099b6ceb19db8aa41a4
Topic 2: Air	air pollutants	https://www.scottishairquality.scot/data/mapping/data
Topic 3: Water	water quality	https://www.sepa.org.uk/data-visualisation/water-classification-hub/
	flooding	https://consultation.sepa.org.uk/evidence-and-flooding/flood-risk-management-plan-orkney/
Topic 4: Soils and Geodiversity	land capability for agriculture	land capability for agriculture link on https://soils.environment.gov.scot/
	carbon rich soils	carbon rich soils link on https://soils.environment.gov.scot/
	geodiversity information	data from https://hub.jncc.gov.uk/assets/b0f53582-f93d-4e70-8ff9-0f16b660e4ad and https://oic.maps.arcgis.com/apps/MapJournal/index.html?appid=273d8d6359ae451cbe16f3a867297276
Topic 5: Material Assets	geological mining resources	https://www2.bgs.ac.uk/mineralsuk/mines/dmg.html
	waste and recycling	https://informatics.sepa.org.uk/HouseholdWaste/
	water treatment works	data provided by Scottish Water
	renewable energy generation	https://www.oref.co.uk/orkneys-energy/ and https://www.oref.co.uk/solar/
	digital connectivity	https://labs.thinkbroadband.com/local/broadband-map#6/51.414/-0.641/
Topic 6: Biodiversity	areas protected for nature conservation	https://informatics.sepa.org.uk/ProtectedNatureSites/
	other areas important for biodiversity	https://oic.maps.arcgis.com/apps/MapJournal/index.html?appid=273d8d6359ae451cbe16f3a867297276 and

		https://www.rspb.org.uk/reserves-and-events/reserves-a-z/
	woodland	https://www.woodlandtrust.org.uk/visiting-woods/woods/happy-valley/ and https://www.orkney.com/listings/berriedale and http://www.olavswood.org.uk/ and https://www.walkhighlands.co.uk/orkney/binscarth-wood.shtml
	greylag geese	https://www.rspb.org.uk/get-involved/campaigning/climate-change-effects-on-nature-and-wildlife/effects-of-climate-change-on-wildlife/climate-change-and-birds/adaptation-of-orkneys-greylag-geese/ and https://www.bto.org/sites/default/files/publications/wituk1920forweb.pdf and https://www.researchgate.net/publication/290061000_The_merging_of_populations_of_Greylag_Geese_breeding_in_Britain and https://www.tandfonline.com/doi/pdf/10.1080/00063657.2011.585629 and https://www.gov.scot/publications/2010-review-goose-management-policy-scotland/pages/21/ and https://www.gov.scot/publications/2010-review-goose-management-policy-scotland/pages/21/
	stoats	https://www.bbc.co.uk/news/uk-scotland-66889194 and https://www.orkneynativewildlife.org.uk/project/our-progress
	marine environment	https://www.nature.scot/doc/naturescot-commissioned-report-406-descriptions-scottish-priority-marine-features-pmfs and https://marinescotland.atkinsgeospatial.com/nmpi/default.aspx?layers=446
Topic 7: Landscape and cultural heritage	internationally and nationally important sites	https://whc.unesco.org/en/list/514/ and NSA special qualities document from https://sitelink.nature.scot/site/9128
	historic and built heritage	https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/scheduled-monuments/ and http://portal.historicenvironment.scot/hes/web/f?p=1505:200:::NO:RP:SEARCH_UNDERWAY:1 and https://www.orkney.gov.uk/Service-Directory/C/Conservation-Areas.htm and https://www.buildingsatrisk.org.uk/search/planning_authority/199
Topic 8: Population	datazones	https://spatialdata.gov.scot/geonetwork/srv/api/records/7d3e8709-98fa-4d71-867c-d5c8293823f2

and human health	population	https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdata%2Fpopulation-estimates-2011-datazone-linked-dataset and https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Fconcept%2Ffolders%2Fthemes%2Fpopulation
	employment	https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/datasets/jobseekersallowanceforscottishparliamentaryconstituenciesjsa021/current and https://www.scotlandscensus.gov.uk/search-the-census#/location/topics/list?topic=Labour%20Market&categoryId=6 (datasets LC6109SC, KS601SC, LC6602SC) and https://www.scotlandscensus.gov.uk/search-the-census#/explore ('or see all results for Scotland') and https://www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning/regional-skills-assessments/ (data matrix)
	housing	https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Fconcept%2Ffolders%2Fthemes%2Fhousing (household estimates, dwellings by number of rooms, dwellings disrepair (Scottish House Condition Survey) and http://statistics.gov.scot/data/residential-properties-sales-and-price and https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingpurchaseaffordabilitygreatbritain/2022
	living costs	https://www.ons.gov.uk/economy/regionalaccounts/grossdisposablehouseholdincome/articles/investigatinghouseholdexpenditureinislandcommunities/2018-10-31#investigating-household-expenditure-in-orkney and https://www.gov.scot/publications/cost-remoteness-reflecting-higher-living-costs-remote-rural-scotland-measuring-fuel-poverty/ and https://www.gov.scot/collections/scottish-house-condition-survey/ (local authority analysis) and https://chargeplacescotland.org/charge-point-tariffs/ and https://www.gov.scot/publications/scottish-islands-data-overview-2023/pages/9/
	transport	cycling: https://explore.osmaps.com/route/5513088/sustrans-orkney-islands-burwick-to-kirkwall-and-stromness?overlays=os-ncn-layer&style=Standard&lat=58.960438&lon=-3.304773&zoom=9.3956&type=2d&placesCategory= buses: https://www.orkney.gov.uk/our-services/transport/bus-services/ and

		https://www.orkney.gov.uk/our-services/transport/community-transport/ ferries: https://www.orkney.gov.uk/our-services/transport/ferry-services/ flights: https://www.orkney.gov.uk/our-services/transport/air-services/ and https://www.flightconnections.com/route-map-loganair-lm roads: https://www.orkney.gov.uk/our-services/roads-lighting-and-parking/roads-and-lighting/plans-and-policies/ (asset management plan) geographic access to services indicators from https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Fconcept%2Ffolders%2Fthemes%2Fscottish-index-of-multiple-deprivation
	access to services	https://statistics.gov.scot/resource?uri=http%3A%2F%2Fstatistics.gov.scot%2Fdef%2Fconcept%2Ffolders%2Fthemes%2Fscottish-index-of-multiple-deprivation (geographic access to services indicators)
	recreation opportunities	https://www.orkney.gov.uk/our-services/leisure-and-culture/sport-and-leisure/ and https://www.orkney.gov.uk/our-services/planning-and-building/development-and-marine-planning-policy/outdoor-access/core-paths/ and https://www.stmagnusway.com/route