The Bexhill Wild Domesday Project

1. Introduction

The Bexhill Wild Domesday Project centres on involving the population of Bexhill, especially young people, in an assessment of our wild and natural treasures, how to conserve them and how, in the end, to enhance their habitats for the greater benefit of the town's population and its natural assets.

They could not do this alone. Fortunately, Bexhill has access to a host of local naturalists, wildlife organizations and enthusiasts backed up by voluntary and professional organisations, and experts on environments and species ranging from beetles and butterflies to soil erosion, bird migration and sea defences, who want to make sure that our natural environment is logged, monitored, and rescued before it is too late.

In 1971, L. J. Bartley, the Editor of the Bexhill-on-Sea Observer, wrote a book entitled *The Story of Bexhill*. In its 200 pages describing the history of Bexhill from the founding by King Offa in 772 through to the 20th Century, there was no mention of the landscape or coastal assets, fens, marshes, woodland, or meadows. There was no mention of wildlife, climate, weather patterns or anything to do with Bexhill's natural environment.

Yet Bexhill is not just a hard landscape with a List 1 building, a railway, shops, some schools and 43,000 residents. It has some of the finest wildlife in Britain, some treasured woodlands, a wide variety of wet and dry landscapes including marsh and rare fen and beach plant environments, parklands, public and private gardens, allotments, some good farming country and miles of footpaths and hedgerows. Many of its trees have legal preservation orders. It is an important landing point for migratory birds and insects. It also has a beautiful sea environment, with rocks, cliffs, and vast areas of low-tide sand. Our existence depends on plants and animals. The food chain needs to be intact for a healthy biosphere.

But all this is under threat from climate change. Bexhill on Sea Town Council has already developed a Climate Change Action Plan which reflects the areas to be addressed by 2030. We cannot escape from the implications of climate change and sea level rises, and this project is all about identifying what wild and natural treasures Bexhill has, to make sure they survive and thrive.

This Domesday Survey will be a major contribution from our town towards the national and global efforts being made to slow, mitigate, and adapt to the runaway climate.

2. Three main stages over the next three years

This paper recommends a three-phase approach to the conservation of Bexhill's wild and plant life and landscapes. The Wild Domesday Plan will conform to the East Sussex County Council (ESCC) Responsible Authority Local Nature Recovery Strategy (LNRS), (see appendix x) and will be developed in consultation with other bodies such as Rother District Council.

A. A comprehensive scientific evaluation phase will identify the types of landscape and ecology we have within the nine Town Wards: Central, Collington, Kewhurst, Old Town, Sackville, St Mark's, St Michael's, St Stephen's, and Sidley. The assessment of Bexhill's plant and wildlife and natural environment will be divided into four seasonal research tranches – Summer 2023, Autumn 2023, Winter 2024, Spring 2024 and will be undertaken in collaboration with a range of experts, amateur and professional, who work to the highest standard.
B. Using the data obtained from multiple sources in Year 1, a team of 18 volunteers (two per ward) would be recruited from interested residents including young people, involving the schools where possible. Trained and guided by naturalist experts, the team would then conduct street-by-street and landscape surveys looking for problems in trees, plant types, wildlife, coastal areas, streams, water courses and pollution of the environment.
C. Under expert supervision, conservation management phase would be planned, using the Wild Domesday Survey data and volunteer local ward data as a base, to ensure relevant planting and landscaping, and additional water in the landscape for animals, insects, and tree survival in drought conditions. An evaluation would be undertaken which searches for successes and problems in order to make any necessary revisions to long-term strategy.

This project, particularly Stage B, could attract match funding from external sources such as East Sussex County Council grants programme, the National Lottery, the Environment Agency, other Government green initiatives, and some charities supporting green issues.

3. Overview and approach

Every one of Bexhill-on-Sea's wards has landscapes, townscape streets and gardens that need monitoring and conserving to care for important wild and plant life. Bexhill covers much of the Combe Valley Countryside Park including its coast, and a large part of Pevensey Marshes, both of which are sites of special scientific interest (SSSI). These and other Bexhill-on-Sea landscapes and wildlife areas contain rare and/or protected and threatened species and need exceptional actions to conserve them.

There are ten main biosphere groups in the Bexhill landscape:

Mammals; birds; reptiles & Amphibians; fish; butterflies and moths; other insects and spiders; molluscs, terrestrial land freshwater crustaceans, seashore crustaceans, other terrestrial and freshwater invertebrates, other seashore invertebrates; trees and shrubs; wildflowers; grasses, rushes, sedges, lower plants, and fungi.

Each main group has a research data paragraph the appendices below on which are shown details of the data sources held by a wide range of local, regional, and national organisations.

The Bexhill Wild Domesday Project will use these organisations to extract the data for each season over the next 12 months and give the Council quarterly reports on progress.

Also in the appendices are details of important environmental parameters, including climate change, weather patterns, sun and rain levels over time, tidal changes for sea levels, coastal conservation decisions by the Environment Agency, groundwater levels and flooding risks. Please note the research data sources and explanations below, showing how data will be obtained.

4. Implementation

Despite the fact that we are surrounded by countryside of Outstanding Natural Beauty, many of us have little idea of the great treasure in landscape and wildlife that we have in our town. We need to engage and motivate the whole community, including residents, visitors, schools, and people with disabilities and those speaking foreign languages. We need to let them know that we have a wonderful cornucopia of marsh, fen, carr, hill, dale, meadow, and coast in which rare and precious creatures live. We have ancient woodlands and many types of plants and flowers, but also the private areas that pollinators depend on – the gardens of our homes. Each of our wards has something special to offer the mix to be conserved. The nine wards, with maps and photographs of their environments are shown in the Bexhill Wild Domesday Website: https://davidbexhill.wixsite.com/bexhill-wild

Current Situation

A number of organisations are already working on conservation in our town, including Bexhill Environmental Group, Friends of Combe Valley, Combe Valley Nature Facebook Group, Hastings and East Sussex Natural History Society, Sussex Wildlife Trust, Sussex Ornithology, Sussex Bat Group, Bexhill Heritage, Bexhill Maritime Group, Mantel Farm Bees. However, it is the Environment Agency, East Sussex County Council and Rother District Council who have primary responsibility at present for the local environment.

To these organisations must be added the many landowners and residents who also need to be consulted before the Bexhill Wild Domesday Plan can be implemented. Some of Bexhill's current environmental organisations have carried out their own small surveys and these would be considered when assessing the overall picture of wildlife and landscape issues.

Implementation of Phase One

Phase One is all about gathering the facts and answering questions.

Who owns the land – the Councils, farmers, universities, private individuals? What is the nature of the land – hill, valley, fen, marsh, river, stream and so on. How much woodland – and how much is older than four hundred years, the definition of 'ancient'? What kinds of wildlife do we have, inland, on the coast and in the sea margin? Are there signs of sea levels rising? Is the longshore drift stable leading to beach movement failures? How much coastal and inland erosion is there – and do we need to take precautions to prevent the loss of life and property? How effective is the land drainage? How secure is the wildlife food chain? What about diseases, pollution, migration, pollination, and nesting? Is there enough water in the landscape to support the wildlife at key locations in the town? Are there any signs of new life coming from the Continent or elsewhere? What is the public reaction to the project? Are there any volunteers willing to help? Will private garden owners support the project? How is Bexhill Town Council limited by wildlife and landscape laws in its intended actions? Which wildlife and plants are protected? Are there any archaeological sensitivities over landscape

changes (for example making ponds) requiring pre-notification to the County Archaeologist? Will any of the Wild Domesday Plan require planning permission?

Existing sources holding scientific information and wildlife and landscape photographic evidence are detailed in the appendices to this plan.

Implementation of Phase 2

This begins in the summer of 2024. Once the Bexhill Wild Domesday Year One report is finalised and approved by Bexhill Town Council, then the recommendations of the report can be implemented in a logical order.

Key aspects will be:

- Holding public meetings to encourage volunteering.
- Organising the volunteers to patrol their wards and feedback on findings.
- Conserving pollination through the provision of wildflower meadows and borders.
- Providing small areas within woodland and open land where water for insects, birds and mammals can collect during rainfall.
- Planting of hedgerows and trees. With regard to tree types and hedge types, the pattern should follow the County Ecologist's recommendation with high numbers of blackthorn, hawthorn, and holly for winter berries for birds and to provide dense nesting areas for them too.

Implementation of Phase 3

This phase will start in the summer of 2025. It will examine the progress made and consider how to overcome emerging problems. It will also set in train a regular conservation plan for the landscape and wildlife.

It is vital to understand that the wildlife food chain is sensitive and that nothing should be done to alter it without firm scientific evaluation from experts. So, for example, providing more nesting boxes for barn owls, might mean more barn owls being born and they would hunt more voles and so the buzzards and marsh harriers would have less food. So great care needs to be taken when attempting to manage wildlife – and very often observation is better than action in sensitive cases. However, with bees and hoverflies, the more food provided in the form of flowers the better, and in the case of seed and berry birds, the more hedges the better.

A close examination of beach erosion and tide heights will allow us to see the future of the sea front more easily.

5. Proposal

It is proposed that the Bexhill Wild Domesday project be approved by the Town Council and that David E P Dennis appointed as Researcher Manager for Phase 1 evaluation and Bexhill Wild Domesday Supervisor of volunteers for Phase 2. A decision on who will take it forward on a day-to-day basis in Phase 3 can be made in 2024.

Mr Dennis's role in Phases 1 and 2 would be to:

- Liaise with all the organisations and experts defined in the appendices above to gather the data by season and present quarterly reports to the council.
- Recruit and co-ordinate teams of volunteers for each ward.
- Train the volunteers to log wildlife and plant life on iRecord.

- Arrange public meetings in cooperation with ward councillors.
- Maintain the Bexhill Wild Domesday website.

6. Costings

David EP Dennis proposed and has been working on this plan for a year now, and has taken part in meetings with councillors, designed the Domesday website and visited all the Bexhill wards to photograph their wildlife and landscapes.

He will collect and analyse all the data specified in the appendices to this plan and submit four reports to the council, one at the end of each season of evaluation, detailing progress in gathering the base data ready for Phase 2.

Costs are as follows for Year One:

Project Manager: Fee £9,300.00 paid in monthly sums of £775.00 from 1st June onwards for twelve months. This to also cover printing, travel, all communication costs, and the annual cost of the Bexhill Wild Domesday website of around £250.00 per annum.

Mapping

The £200.00 fee to be paid to Alexis Markwick for the maps of the wards described above.

They include: Nine ward maps with full details, one nine-ward map with landscape and water courses only, for plotting future projects, one nine-ward map with roads and footpaths only, one nine-ward map with protected trees and wildlife areas only. Each map to be a re-sizeable jpeg.

Total cost of Bexhill Wild Domesday in Year I = £9,750.00

COSTINGS – YEAR TWO

These are not likely to exceed £10,000, and will include the cost of meetings, volunteers' expenses, training, publicity etc. However, grants will also be sought by bidding to ensure finance for any large landscape and wildlife conservation projects.

COSTINGS – YEAR THREE

These are not likely to exceed £10,000. However, grants will also be sought by bidding to ensure finance for any large landscape and wildlife conservation projects.

See also Appendix d.

POWER POINT PRESENTATION

A slide presentation for this project is also available for councillors to view.

Thank you for your attention and interest in this vital project.

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a. Appendix 1

EFFECTS ON THE BEXHILL BIOSPHERE

Sea Levels

In addition to ice melt, the sea is warming as though in a kettle, leading to molecular expansion (bulking up) and the climate is becoming increasingly chaotic, breaking normal patterns of the seasons, rainfall, and wind strengths. Any changes in sea levels will have an increasingly dramatic effect on our coast. Already 100,000 tons of granite boulders have been placed to defend the Galley Hill area and the rail and road network.

Parts of Bexhill are likely to be submerged unless action is taken [1]. Increases in sea level will be amplified by high tides, winter storms, longshore drift and North Sea surge turbulence spilling through the funnelling Straits of Dover. In 1953, the North Sea surge wave was eighteen feet high, and 2,190 people died. This surging mechanism occurs periodically but at random depending on weather and tide. For example the terrible sea surge on the East coast of France in 2010[2] killed 50 people resulted from a high spring tide combined with fierce winds and a drop in air pressure at 1am in the morning. In this incident the wave height was 25 feet. Such a wave height would overwhelm all of Bexhill's coast [3].

Along the Sussex coast, other councils are adopting sea walls, surge barriers, salt marshes etc. Bexhill cannot sit idle in the hope that these global forces will not affect us. The Sussex coast has areas that will be abandoned to natural forces. At present only a very small area of Bexhill is outside the current temporary defence line, however, as the sea level rises, so further decisions will need to be made by the Environment Agency.

Drought

We have experienced an increasing number of long-term reductions in rainfall, leading to drought and hosepipe bans. The normal mid-summer average temperature for Bexhill is around 20 degree C, however, in 2022, every day in August exceeded this average and the mid-month peak was 32 degrees C. Southern England was still deep in hydrological drought, with rivers, boreholes and reservoirs still low, and requiring months of above-average rainfall to recharge.

This surge of drought conditions affects the ability of plant and wildlife to survive because of water shortages in the landscape. In a Sussex summer it is increasingly likely that tree, plants, and food-chain creatures will die unless there is more water in the landscape. Commendably, due to the drought conditions, in the summer of 2022, volunteers from Bexhill Environmental Group used watering cans to ensure individual mature trees survive. These trees would have survived on normal rainfall levels in other years. Drought has also reduced oxygen levels in water courses leading to dangerous Cyanobacteria algal blooms. These have appeared in inland waters, and similar organisms are present in our immediate seacoast.

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[1] See https://coastal.climatecentral.org/

[2] See https://en.wikipedia.org/wiki/Cyclone_Xynthia

[3] Key information concerning the serious problem of sea level rises is contained here: https://www.sciencedirect.com/science/article/pii/S0964569122001624, an article on research from Coastal and Ocean Management, which states that a third of the UK coastline will be under threat.

Pollination

Between 75% and 95% of all plants and crops are dependent on insect pollination. The climate, poor landscape management, changes in farmland usage, reductions in wildflower meadows, the unnecessary mowing of verges, the concreting of private garden areas, disease, especially Bee Varroa (*Varroa destructor*) and neonicotinoid pesticides have led to a drop in vital pollinating insects. The great destruction of insects can be seen clearly in the drop in the number of windscreen insect marks noticed by car and lorry drivers.

Pollution and flooding in the Bexhill area

The Bexhill Wild Domesday project will include research on a range of polluting incidents including sewage release, periodic Pebsham Tip leachate bursts into the Combe Haven river, and inland and coastal flooding risks.

b. Appendix 2

Local Nature Recovery Strategy (LNRS) and mapping

The Local Nature Recovery Strategy (LNRS) is a Government initiative to preserve wildlife and habitats, along with the Nature Recovery Network. Bexhill Town Council is now being invited to take part in the response by East Sussex County Council to this Government initiative. Councillor Viv Taylor-Gee and David EP Dennis are already booked to take part in an online Team briefing on 24th March 2023 with the County Ecologist if Bexhill Town Council approves this Domesday Project Plan.

Local Nature Recovery Strategy 6-step process – detailed step process:

- **step 0:** Government provides a map of each Strategy area, including habitats and national conservation sites
- **step 1:** Locally held data is added to the map, including locally identified wildlife sites
- **step 2:** Description of the Strategy area, including its key habitats and potential opportunities to create or improve them
- **step 3:** Identification of outcomes, achieved through creation or improvement of habitat, and grouping of these into "priority" and "other"
- **step 4:** Potential measures for creating or improving habitat to achieve the priority and other outcomes
- **step 5:** Mapping of suitable locations for the delivery of the potential measures onto map of existing habitat (established in Steps 0 and 1)

Steps 2, 3 & 4 combine to create the "statement of biodiversity priorities"

Steps 0, 1 & 5 combine to create the "local habitat map"

Full details are available here:

Local Nature Recovery Strategies: how to prepare and what to include - Defra - Citizen Space

MAPPING

David EP Dennis has met Alexis Markwick who produces the Bexhill OSM and the wall maps for the wards of Bexhill placed in Bexhill Town Council Information Office: 35 Western Rd, Bexhill-on-Sea TN40 1DU.

Online mapping for the Domesday research data will include:

- Electronic map showing all woods and water courses.
- Flood risk areas
- Ward street maps
- Tree preservation order maps

c. Appendix 3

What if we fail to act?

Scientists advise that even if climate change is reversed, the existing adverse effects on our current situation will last for around 100 years. Therefore money needs to be spent to offset climate change. Coastal defences need to be put in place by the Environment Agency and Rother District Council to protect our sea front. If nothing is done soon then the following threat list may be realistic, although more research is needed. It is plain that unless carefully planned remedial and protective work is carried out, the followings risks are valid:

Immediate threats to the natural environment: 2023 – 25

- Sewage and sea/bathing water quality
- Cyanobacteria and seaborne microbacteria
- Sea Front storm damage
- Flooding
- Drought – loss of plants, trees, and wildlife
- Beach Hut damage
- Extensive loss of protective beach shingle due to
- excessive longshore drift through the many damaged groynes – happening now.
- Fly tipping.

Threats: 2025 – 2030

The above plus:

- Increasing water danger to roads, domestic water supplies, underground sewage and gas pipes and power cables.
- Loss of, or intermittent damage to roads and rail between Bexhill and Eastbourne
- Loss of the railway to Hastings
- Loss of farmland and wildlife habitats in Combe Valley and Pevensey Marsh
- Loss of habitat within sea front and local housing with rising water table due to sea level rise.

Threats: 2030 – 2035

The above plus:

- Loss of the whole of Pevensey Marsh which includes part of the Bexhill ward.
- Bo-Peep tide gate system for Combe Valley's Combe Haven river unable to cope, leading to flooding of homes.

Threats: 2035 – 2050

The above plus:

- Loss of Egerton Park and some parts of Bexhill Town Centre and the whole of Bexhill Sea Front.
- Loss of all or many more road connections in the immediate area
- Breakdown of efficient food deliveries to supermarkets.

Sources: Environment Agency and Government data projections based on medium hazard assessments.

d. Appendix 4

COSTINGS – YEAR ONE

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Costs are as follows:

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COSTINGS – YEAR THREE

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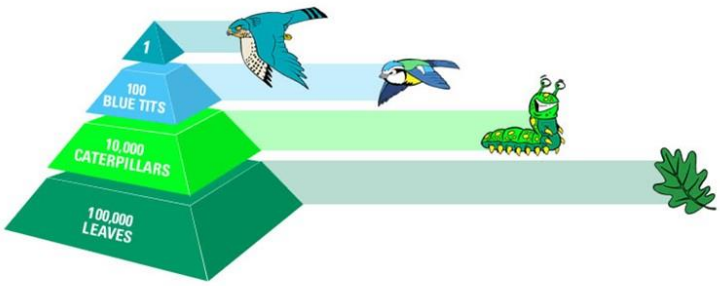
e. Appendix 5 – Research Data Sources

Below you will find a series of links and explanations concerning the key data requirements for this project, to ensure a comprehensive picture of Bexhill's natural environment:

Index

1. **Food Chain**



It takes 100,000 leaves to feed 10,000 insects.

10,000 insects can feed 100 birds or small mammals.

100 birds or small mammals can keep a top predator kestrel or buzzard alive.

So the whole of a healthy food chain is vital for wildlife survival.

2. **Mammals:**

Human population data.

The population of Bexhill-on-Sea is estimated as:

43,754 Population [2021] – *Census*
12.03 km² Area
3,637/km² Population Density [2021]
0.32% Annual Population Change [2011 → 2021]

Average population per ward = 43,754/9 = 4862
Projected growth – 140 new residents per year.
Population in ten years @ 43,754 x 0.32% possibly =

The full data set and mapping is here:

https://citypopulation.de/en/uk/southeastengland/east_sussex/E35001397__bexhill/

Other mammals in the Bexhill area:

Fox, Badger, Rabbit, Bat (see crisis table below), Mole, Vole, Mouse, Rat, Grey Squirrel, Hedgehog, Deer, Mink (predator).

Sussex is the only county in which all eighteen UK species of bat are found – consequently monitoring data is vital.

For deer:

Game & Wildlife Conservation Trust

https://www.gwct.org.uk/blogs/news/2017/july/a-visit-to-the-sussex-study/

Mammals continued - **Critical Situation for Bats: (Sussex Bat Society Table)**

Common Name	Latin Name	Status in Sussex	Status in UK
Barbastelle	*Barbastella barbastellus*	Very rare, widespread	Very rare, widespread E/W
Serotine	*Eptesicus serotinus*	Uncommon, widespread	Uncommon, widespread, southern E
Alcathoe whiskered bat	*Myotis alcathoe*	Very rare – hardly known	Only recently recognised in UK
Bechstein's	*Myotis bechsteinii*	Very rare	Very rare, southern
Brandt's	*Myotis brandtii*	Scarce, widespread	Widespread, scarce E/W
Daubenton's	*Myotis daubentonii*	Fairly abundant, widespread	Widespread, fairly abundant
Greater mouse-eared	*Myotis*	Very rare (currently only one individual)	Very rare (currently only one individual)
Whiskered	*Myotis mystacinus*	Scarce, widespread	Scarce, widespread, not S
Natterer's	*Myotis nattereri*	Scarce, widespread	Scarce, widespread
Leisler's	*Nyctalus leisleri*	Rarely recorded	Scarce but widespread to southern S
Noctule	*Nyctalus noctula*	Uncommon, widespread	Uncommon, widespread, not S
Nathusius's pipistrelle	*Pipistrellus nathusii*	Scarce, widespread	Scarce, widespread, includes migrants
Common pipistrelle	*Pipistrellus pipistrellus*	Abundant, widespread	Widespread, abundant
Soprano pipistrelle	*Pipistrellus pygmaeus*	Fairly common, widespread	Fairly common, widespread
Brown long-eared	*Plecotus auritus*	Relatively abundant, widespread	Widespread, relatively abundant
Grey long-eared	*Plecotus austriacus*	Rare, south coast areas	Rare, mainly southern coastal areas
Greater horseshoe	*Rhinolophus ferrumequinum*	Very rare	Very rare, in SW (E, W)
Lesser horseshoe	*Rhinolophus hipposideros*	One record	Rare, mainly SW E and W

3. Birds:

At least 70 types of birds almost continuously present in Bexhill's landscape plus migrants and pass overs. Of great interest are: Kingfishers, Wheatears, Greater Crested Grebe, 300+ Shoveler ducks, 100+ Greylag and Canada Geese, 150+ Lapwings, Raptors: Buzzard, Marsh Harrier, Kestrel, Hobby, Merlin, Sparrowhawk, Barn Owl. Dartford, Sedge and Reed Warbler, Spotted Flycatcher, Heron, 200+ Turnstone, 50+ Cormorants, many Mute Swans belong to King Charles III. Pass overs include, White Stork, White-tailed Sea Eagle, Bee Eaters.

Main Domesday data sources are:

Sussex Ornithology Society : https://www.sos.org.uk/

Sussex Wildlife Trust Rye Harbour Nature Reserve: https://rye.sussexwildlifetrust.org.uk/

Sussex Wildlife Trust bird experts: https://sussexwildlifetrust.org.uk/

Direct observations logged on National Biological Network iRecord: https://irecord.org.uk/

Local enthusiasts reporting sightings to Bexhill Wild Domesday website.

and for Pheasants:

Game & Wildlife Conservation Trust

https://www.gwct.org.uk/blogs/news/2017/july/a-visit-to-the-sussex-study/

4. Reptiles and Amphibians

Reptiles:

Common Lizard, Grass Snake, Adder, Slow Worm

Amphibians: Great Crested Newt, Common Frog, Marsh Frog, Common Toad

Main Domesday data source:

Sussex Reptile and Amphibian Group: http://www.sussexarg.org.uk/

5. Fish – Sea and Freshwater

Fish: Many sea fish including shoals of Mackerel. Many river fish include Pike and Rudd on Combe Haven River

Main Domesday data sources are:

Sea Fish:

Inshore Fisheries and Conservation Authority: https://www.sussex-ifca.gov.uk/

British Marine Life Study Society: https://www.glaucus.org.uk/crustacea.htm

Fresh water fishing:

Sussex Piscatorial Society: https://spsfishing.co.uk/

Fishing and Angling Clubs in Sussex: https://www.fishe.net/eastsussexfishingclubs.php

Water purity and other relevant aspects:

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

6. Insects that are Butterflies and Moths

Main Domesday data sources will be:

Sussex Butterfly Conservation Group: https://www.sussex-butterflies.org.uk/index.php

Sussex Moth Group: https://www.sussexmothgroup.org.uk/site/

Sussex Wildlife Trust: https://sussexwildlifetrust.org.uk/news/category/insects-wildlife

Insects that are butterflies or moths recorded in Bexhill wards: *Butterflies*: Clouded Yellow, Orange Tip, Painted Lady. Admiral, Peacock, Small Tortoiseshell, Green-veined White, Large White, Green Hairstreak, Meadow Brown, Speckled Wood, Gatekeeper, White Admiral, Silver Spot Fritillary. *Moths*: So many moths can be found here but there are frequent sightings of the Five and Six Spot Burnet, the Cinnabar and Silver Y. Rarity: Six-banded Clearwing Moth at Galley Hill.

NB: The very rare Mediterranean and North African moth called 'Bloxworth Snout' (*Hypena obsitalis*) has been recorded in St Leonards in 2022 and so may be found in Bexhill with further research. The appearance of this moth in Sussex may suggest migration due to global warming.

7. Other insects and the spider group

Other insects: A wide variety of beetles, wasps, bees, hoverflies, Turkey Oak gall wasps, True flies, Lacewings, Caddis, and so many others. Rarities include Early Colletes bee at Galley Hill and, significantly, Melecta albifrons bee parasite. Prominent are the solitary mining bees. Many types of dragonflies and damselfly including Banded and Beautiful demoiselles. Newcomers in last two years: Small, red-eyed damselfly and Willow Emerald damselfly.

Spiders: A wide range include Orb, Long-legged, Wolf, Zebra, False Black Widow, Garden.

There is an exceptionally important range of Mining Bees at Galley Hill, Bexhill.

Main Domesday data sources are:

Amateur Entomologist Society: https://www.amentsoc.org/membership/local-groups/sussex/

University of Sussex: https://www.sussex.ac.uk/lifesci/insectnavigation/

The Laboratory of Apiculture and Social Insects: https://www.sussex.ac.uk/lasi/

Sussex Wildlife Trust: https://sussexwildlifetrust.org.uk/news/category/insects-wildlife

Sussex Dragonfly Group: https://sussexdragonflies.org.uk/identification.php

8. Molluscs, Crustaceans, Invertebrates

Molluscs: Slugs, Water snails, Land snails, Mussels, Periwinkle, Limpet, Razor, Whelk.

Terrestrial land freshwater crustaceans: Woodlouse and Pill woodlouse for example

Seashore crustaceans: Crab, Lobster, Barnacle, Sand Hopper,

British Marine Life Study Society: https://www.glaucus.org.uk/crustacea.htm

Government Marine management Association:

https://www.gov.uk/government/news/non-native-crabs-and-lobsters-along-sussex-coast

Other terrestrial and freshwater invertebrates: Millipede, Earthworm, Harvestmen.

Other seashore invertebrates: Jellyfish, Lugworm, Anemone, Starfish

Sussex County Recorders – experts: https://sxbrc.org.uk/recording/countyRecorders.php

University of Sussex Research Department:

http://srodev.sussex.ac.uk/view/subjects/QL0403.html

Inshore Fisheries and Conservation Authority: https://www.sussex-ifca.gov.uk/

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

9. Trees and shrubs:

A very extensive set of trees including many oaks and a wide range of shrubs including dog roses.

Main Domesday data sources are:

Woodland Trust: https://www.woodlandtrust.org.uk/

Sussex Wildlife Trust Woodland Management: https://sussexwildlifetrust.org.uk/what-we-do/land-management/woodland

The Small Woods Organisation: https://www.smallwoods.org.uk/en/support-us/love-our-lost-woods/

Government Woodland Restoration Fund: https://www.gov.uk/guidance/regional-woodland-restoration-innovation-fund

Sussex Plant Heritage Group: https://www.plantheritage.org.uk/local-groups/sussex/

Sussex Botanical Record Society: https://www.plantheritage.org.uk/local-groups/sussex/

Sussex Hardy Plant Society: https://www.hardy-plant.org.uk/sussex

10. Wildflowers:

A very wide variety including Chicory, and Yellow-horned poppy. There are some stunning wildflower meadows in Combe Valley.

Wildflower Conservation Society: https://highdowngardens.co.uk/this-is-the-wild-flower-conservation-society/

Sussex Botanical Recording Society: https://www.sussexflora.org.uk/

Wildflower meadows: https://www.sussex-butterflies.org.uk/features/wildlife-garden/meadow.php

11. Grasses, Lower plants, and Fungi

Grasses: Many different grasses. **Rushes:** A broad range of these. **Sedges:** A good variety.

Sussex Rare Plants: https://sxbrc.org.uk/downloads/SRPR/SussexRarePlantRegister.pdf

Royal Horticultural Society: Sussex Prairie Gardens: https://www.rhs.org.uk/gardens/gardendetails/sussex-prairie-gardens

Lower plants: Ferns, Liverworts, Lichens.

British Pteridological Society https://ebps.org.uk/ferns/growing/where-to-see-ferns/

Fungi: Many common and some unusual fungi. Many types of bracket fungus and some poisonous types.

Sussex Fungus Group: https://www.sussexfungusgroup.co.uk/

British Mycological Society: https://www.britmycolsoc.org.uk/field_mycology/recording-network/groups/sussex

12. Weather overview

Sussex Weather

http://www.essentialtravelguide.com/regional-guides/southern-england/sussex-travel-guide/sussex-weather/#:~:text=The%20area%20has%20a%20temperate,coldest%20is%20January%20in%20winter.

Local Weather & When to Visit

East and West Sussex are located in Southeast England, notable cities and towns include Brighton, Chichester, Hastings and Eastbourne, local attractions include Chichester Cathedral, Nymans Garden, Arundel Castle, The High Weald (Area of Outstanding Natural Beauty) and the Royal Pavilion. The area has a temperate maritime climate with typically warm rather than hot summers and cool to cold winters.

Sussex rarely experiences very extreme weather meaning Sussex can be visited throughout the year. On average in the city of Brighton the hottest month is August in summer and the coldest is January in winter. Rainfall on average falls fairly evenly throughout the year, October is the wettest month, the driest month is March.

The weather is unpredictable as with the rest of the UK and it is possible to see elements of all four seasons in one day. The city may experience some snowfall in the winter although heavy and sustained snowfall in the city is rare. It is advisable for visitors to check the weather forecast before they arrive in Sussex to get a better idea of the sort of clothing they will need during their trip. Bringing hooded waterproof coats and hats will ensure visitors are prepared for any spells of wind and rain the city and the region may experience.

Brighton Average Weather
Average Temperature high: 14°C (57°F)
Average Temperature low: 8°C (47°F)
Average Monthly Precipitation: 70.91 (mm)

Winter
The days are at their shortest and the temperature at the coolest, the days can be crisp and clear therefore if visitors do not mind the cold, it is possible to enjoy visiting Sussex in winter. There is the possibility of snowfall during this time and it can get cold so visitors are advised to bring warm winter clothing. The area hosts a number of fairs and Christmas markets at this time of year. From December to February the average daytime temperatures are between 8°C and 9°C.

Spring
The climate is milder in spring making it a good time to visit Sussex. There can be some great sunny days mixed with cooler and wet weather. Spring is a good time to visit Sussex if visitors prefer the weather mild to warm and offers an alternative to visiting in peak summer. From March to May the average daytime temperatures are between 9°C and 16°C.

Summer
Most days in summer range from mild to warm with the possibility of some infrequent hotter days, the days are at their longest in the summer. There may be overcast and humid conditions in the summer. The average temperature in July and August is approx. 21°C, making for pleasant summer temperatures. The summer is a good time to explore Sussex's coastline, towns and villages and take in the scenic countryside along the way. From June to August the average daytime temperatures are between 18°C and 21°C.

Autumn
The climate can vary from some pleasantly mild days particularly at the start of September to cooler and colder days in October and November. Autumn is a good time to visit Sussex as it avoids the peak summer tourist season, whilst still having milder temperatures and longer hours of daylight particularly at the start of September. Visitors can see some wonderful autumn colours. From September to November the average daytime temperatures are between 11°C and 18°C.

13. Climate and Weather records for Bexhill

Climate Change Bexhill-on-Sea - meteoblue – full set and historical data

Bexhill Annual Weather Averages - East Sussex, GB (worldweatheronline.com)

The nearest Met Office weather station is located in Eastbourne:

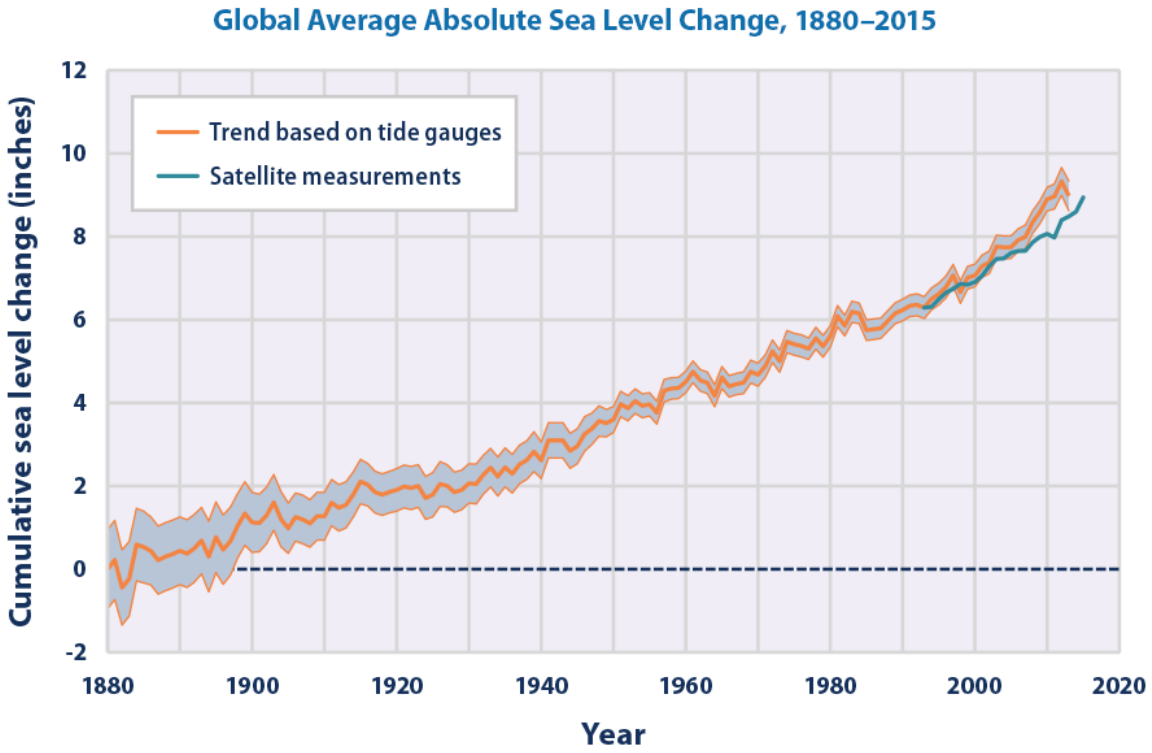
Here are the records from 1960's.

https://www.metoffice.gov.uk/pub/data/weather/uk/climate/stationdata/eastbournedata.txt

Responding to climate change around England's coast - The scale of the transformational challenge - ScienceDirect

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

14. Sea Levels, Tidal and Coastal Conservation



http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

15. Coastal assets and problems

Bexhill has the following coastal assets to be protected against rising sea levels:

Galley Hill rare beach landscape, rare bees, migrating birds and plants
Bexhill Fishing Club
Bexhill Sailing Club
A long series of beach huts
Fishing boats
Sea Front homes
De La Warr pavilion complex
Proposed Marine Centre
Proposed Beach Garden
NHS Covid Stones memorial
Promenade
Shingle barrier and groynes

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

16. Rainfall trends

Climate Change Bexhill-on-Sea - meteoblue – full set and historical data

17. Humidity records

Climate Change Bexhill-on-Sea - meteoblue – full set and historical data

18. Ground Water levels and flooding risks

Sussex: groundwater situation - GOV.UK (www.gov.uk)

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

19. Landscape types and definitions

Landscapes such as meadow, wood, hill, and valley are easy to understand. However, the difference between a swamp, a marsh and a fen, is that Fens and marshes are characterised by a variety of vegetation types that represent their underlying geology and soil type. Fens represent more organic, peaty areas whereas marsh is found on mineral soils with a water table close to the surface, while in swamps the water table remains at or above the surface.

Bexhill has a significant amount of fen – perhaps 30% of all the fen landscape in Sussex. Bexhill also has part of the largest set of reed beds in Sussex in Combe Valley.

20. Farming

Bexhill has a number of farms, including fruit farms and agricultural businesses. In Combe Valley there are two beef herds. Liaison with Bexhill farmers is via the Combe Valley Countryside Park managing agent – Groundwork South and also the Sussex Police Rural Crime Team.

21. Roads and streets per ward

Rother District Council has a list of each street in Bexhill, by ward and postcode. The Bexhill Wild Domesday Project will use the data from RDC to set up the volunteer warden system for each ward.

22. Parks and Gardens

At present Rother District Council are the main source for all aspects of Bexhill's parks and gardens. Photographs of these parks and gardens are shown on the Bexhill Wild Domesday website.

23. Natural water courses

The main water courses are:

- Powdermill
- Watermill
- Combe Haven
- Egerton Park Stream

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

24. Sewage and drainage

https://www.rother.gov.uk/licences-and-permits/other-licences-and-permits/environmental-permitting/

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

25. Private Gardens

One great source of wildlife habitat and pollination is the beautiful private gardens of Bexhill. The Bexhill Wild Domesday Project hopes to encourage private gardeners to increase the number of plants suitable for pollination by bees and hoverflies and also to ensure nectar for butterflies and other insects.

26. Dark Skies and Light Pollution

https://gostargazing.co.uk/events/locations/the-old-bathing-hut-cafe-bexhill-promenade/

https://en-gb.facebook.com/esas.org/

https://www.visit1066country.com/whats-on/dark-skies-festival-p1539071

27. Food chain survival water

This aspect is probably the most important to research for the future of wildlife. As summer drought increases, so the eggs laid by dragonflies, for example, may die and since it takes six years for a dragonfly nymph to grow underwater. The loss of ground water, streams and pools in hot summers risks the loss of most or even all of our dragonflies and damselflies.

We need to plan for more water in the landscape in summer.

28. Drought and Cyanobacteria

https://sussexwildlifetrust.org.uk/discover/around-sussex/wetlands/drought

https://www.gov.uk/government/publications/algal-blooms-advice-for-the-public-and-landowners/algal-blooms-advice-for-the-public-and-landowners#:~:text=This%20can%20look%20like%20paint,contact%20and%20illnesses%20if%20swallowed.

29. Air Quality

https://uk-air.defra.gov.uk/air-pollution/

https://www.rother.gov.uk/licences-and-permits/other-licences-and-permits/environmental-permitting/

https://www.rother.gov.uk/environmental-health/air-quality/

https://rdcpublic.blob.core.windows.net/website-uploads/2022/10/RDC-Air-Quality-2022.pdf

https://airalert.info/Sussex/

https://sussex-air.net/

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

30. Landscape pollution and Fly Tipping

https://www.rother.gov.uk/licences-and-permits/other-licences-and-permits/environmental-permitting/

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

31. Bathing Water Quality

http://environment.data.gov.uk/data/bathing-water-profile/ukj2205-14200/2022:1

Sea level rise and coastal flood risk maps -- a global screening tool by Climate Central

Notes

Please see the **iRecord** website, where we log everything we find for the National Biological Network (NBN).

https://irecord.org.uk/

Please see website of Hastings & East Sussex Natural History Society:

http://www.hastingsnaturalhistory.org/

Please see website of SWT:

https://sussexwildlifetrust.org.uk/

Please see site for County Archaeologist (in case we dig lake features)

https://www.eastsussex.gov.uk/environment/archaeology/contact-archaeology

Please see website of Annie Brown the ecology expert.

https://www.studiobrio.co.uk/

Please see UK Red Lists:

https://jncc.gov.uk/our-work/red-lists-in-great-britain/

Please see conservation taxa: (please note that certain sea weeds are on the list.)

https://jncc.gov.uk/our-work/conservation-designations-for-uk-taxa/

Please see Sea Grass info: https://www.wildlifetrusts.org/habitats/marine/seagrass

It is vital that we draw as much attention to our coast and beaches as to the hinterland.

Sussex Nature Partnership is relevant: http://sussexlnp.org.uk/our-team/

East Sussex County Ecologist is Kate Cole.

East Sussex County Environment Officer is Clara Lehmann.

http://sussexlnp.org.uk/our-team/

Bibliography:

Collins Complete Guide to British Wildlife

Collins Complete Guide to British Insects

Collins Complete Guide to British Trees

Collins Complete Guide to British Coastal Wildlife

The Conservation of Butterflies in Britain (J. Feltwell)

Britain's Dragonflies (D. Smallshire & A. Swash)

The Royal Entomological Society Book of British Insects (P. C. Barnard)

The RSPB Guide to Birds of Britain and Europe