Jersey Geopark

Aspects of the natural and built environments.

Thoughts on more Aspects than Sites of Special Interest.

Jersey Geopark; Sites of Special Interest.

Geology controls…

Scenery.

Microclimates.

Valleys.

High land.

Ecosystems.

Groundwater.

Soils.

Farming.

Stone.

Castles.

Churches.

Sheltered bays.

Harbour sites.













These sites must be protected from development which will destroy their uniqueness, their history and our heritage.

CONTENTS.

JERSEY GEOPARK Proposal. (*** To follow UNESCO Global Geoparks, 2016; copy attached).

The Proposal emphasises Geology SSIs but these should be co-ordinated with Jersey National Parks (Island Plan 2011) and include other coastal and inland sites for Marine Biology (Ramsar); Flora (Bot. incl. Woodland) & Fauna (Zool.); Mycology; Entomology, Ornithology, Archaeology & Vernacular Architecture to present a complete picture of Jersey's environment.

Simpler language to be used, cf. Geology SSI editing by S. Blampied.

Significance.

The geology of Jersey is unique in the Channel Islands and different from the other islands in the Bay of St. Malo; it also differs from that of Normandy and Brittany.

The rocks, their colours and their structures are a window which reveals how the area was eroded into an island, then a small flat-topped hill and then the present day island.

Jersey consists of a striking variety of sedimentary and igneous rocks, varying from shales, greywackes and conglomerates to extrusive andesites, rhyolites and ignimbrites and several varieties of plutonic granite and diorites and gabbros. In addition, these are intruded by various minor intrusive dolerite and lamprophyre dykes. These are overlain by superficial deposits formed during the Ice Ages, such as loess, and during the Interglacials, such as raised beach gravels and peat with tree stumps.

These range in age from c. 700 Ma to the present day, with the majority of rocks being between Precambrian (> 550 Ma) and Palaeozoic (c. 400 Ma).

There is a large time-gap after the formation of these rocks, when they were eroded into hills on a coastal plain by seas which deposited chalk and limestone formations, and the recent deposits being of the Pleistocene (c. 2 Ma) and Holocene (c. 10,000 yrs bp) periods.

Much of our Ice Age history is also present when we alternated between a low-plateau landscape when loess was deposited, and an island landscape when three raised beaches were deposited and Prehistoric mankind lived in two major sea cave and rock shelter sites, giving us faunal deposits, followed by peat and woodland giving us flora deposits.

Each of the SSIs forming the Geopark, acts as a staging post on a Jersey Geology Trail along a unique geological history route and at each site, note what features derive from the geology.

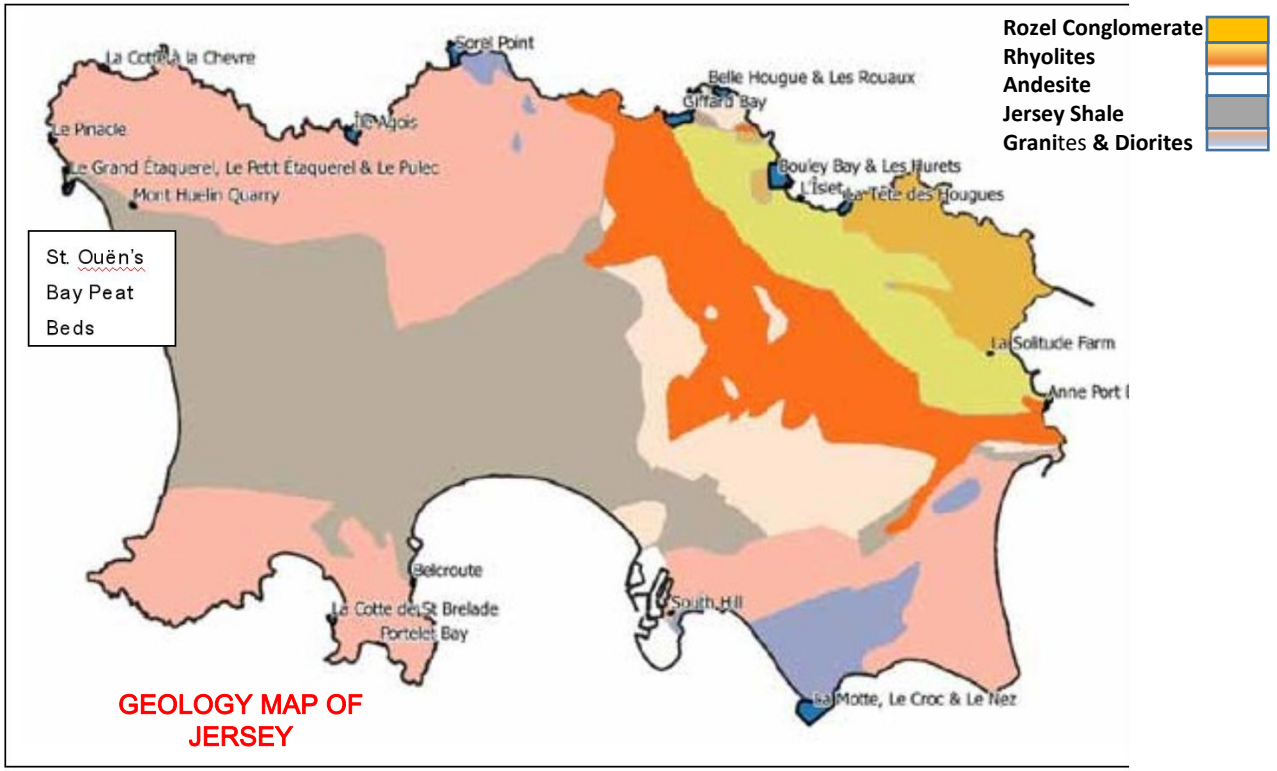
Geology is fundamental.....

Geology reacts with climate and is the foundation of our :- Scenery, location of our Valleys, Highland & Lowland, Microclimates, Groundwater, Soils, Ecosystems, Vegetation, types of Farming, supplies of Stone (Quarries & Sand extraction), Dolmens, Mills, Forts, Castles & Towers, Churches, Settlement, Roads & walls and the positions of our sheltered Bays and Harbours, walls & quays.

JERSEY GEOPARK. Starting with the Geology & SSI sites as the foundation.

The twenty - two SSIs are situated westwards from St. Helier as follows;

SSI 1. South Hill, St. Helier.
SSI 2. Belcroute Bay.
SSI 3. Portelet Bay.
SSI 4. La Cotte de St. Brélade.
SSI 5. St. Ouën's Bay Peat Beds.
SSI 6. Le Mont Hueulin Quarry.
SSI 7. Le Petit Étacquerel.
SSI 8. Le Grand Étacquerel.
SSI 9. Le Pulec.
SSI 10. Le Pinacle.
SSI 11. La Cotte à la Chèvre.
SSI 12. Île Agois and Crabbé.
SSI 13. Sorel Point.
SSI 14. Giffard Bay.
SSI 15. La Belle Hougue Caves.
SSI 16. Les Rouaux.
SSI 17. Les Hurets, Bouley Bay.
SSI 18. L'Islet, Bouley Bay.
SSI 19. La Tête des Hougues.
SSI 20. La Solitude Farm.
SSI 21. Anne Port Bay - La Crête Point.
SSI 22. La Motte, Le Nez, Le Croc.



La Cotte à la Chèvre SSI, 18m sea level cave and habitation site.

Île Agois and Crabbé SSI; site of Eremitic settlement.

.....and La Cotte de St. Brelade SSI with faunal and habitation remains.

Le Pinnacle SSI. Former stack and habitation site since prehistoric times.

L'Étacq SSI. Sedimentary structures in the Jersey Shale Formation.

La Crête Point SSI; lava flow with columnar jointing, our Giant's Causeway.

JERSEY GEOPARK. Archaeology SSIs.

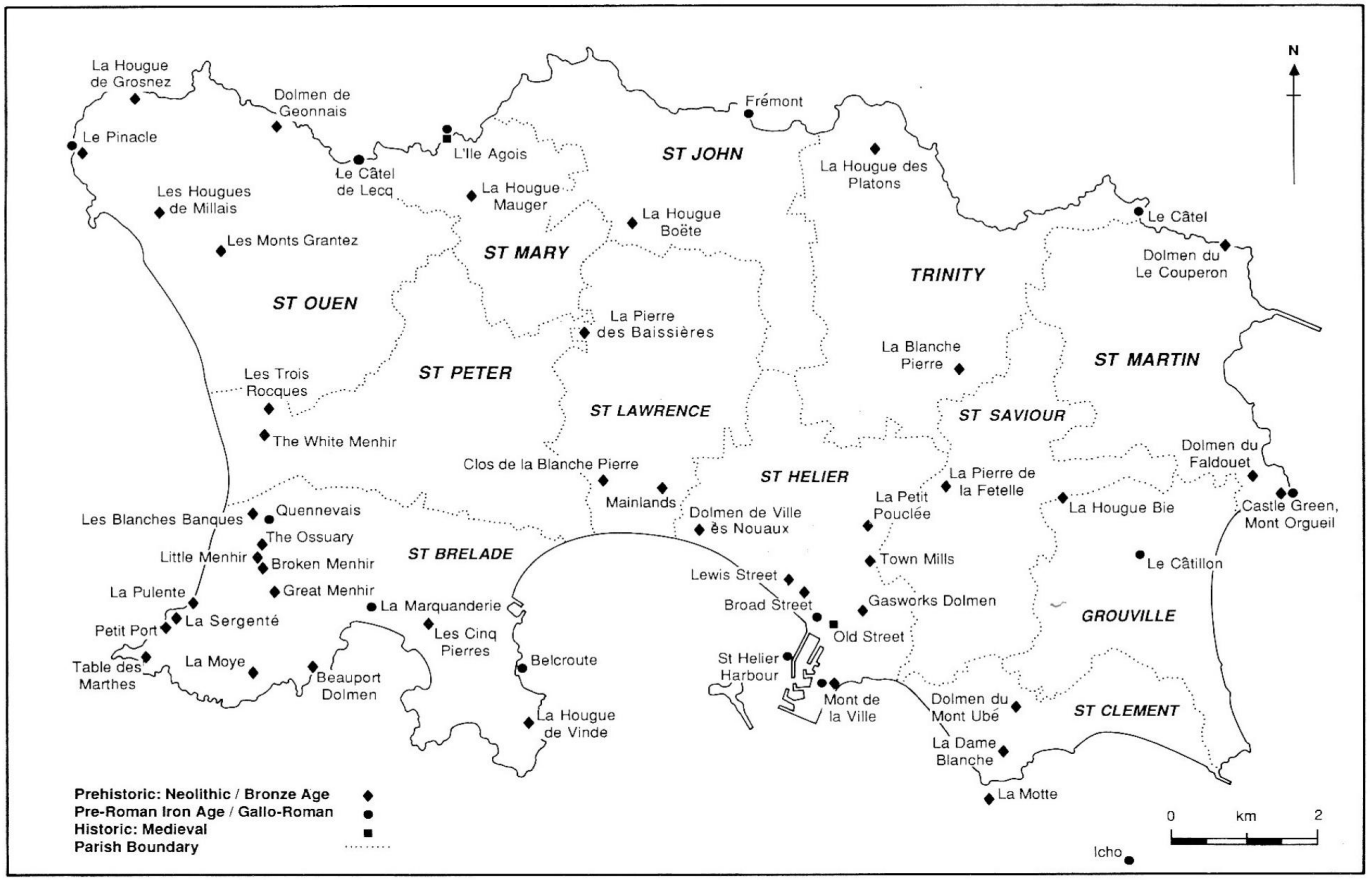


Figure 7 Holocene archaeological sites. Based on and redrawn from M. B. Finlaison and J. L. Hibbs 1985, *Jersey Island Plan: SSI Ancient Monuments: 1*. Additional information from Hawkes (1939) and Patton (1987). Reproduced by permission of the Island Development Committee, and M. B. Finlaison and J. L. Hibbs.

JERSEY GEOPARK. Hill Forts; Le Câtel de Lecq (photo J. Percival, www.prehistoricjersey.net).

JERSEY GEOPARK. Hill Forts. Le Câtel de Rozel (photo. J. Percival).

JERSEY GEOPARK. Dolmen sites.

The dolmen of Faldouet, St. Martin.

.....and the Dolmen of Les Géonnais, St. Ouën.

..... and the dolmen of La Sergenté, St. Brelade.

.....and Les Monts Grantez, St. Ouën.

.....and Le Couperon, St. Martin.

.....and at Le Mont Ubé, St. Clément.

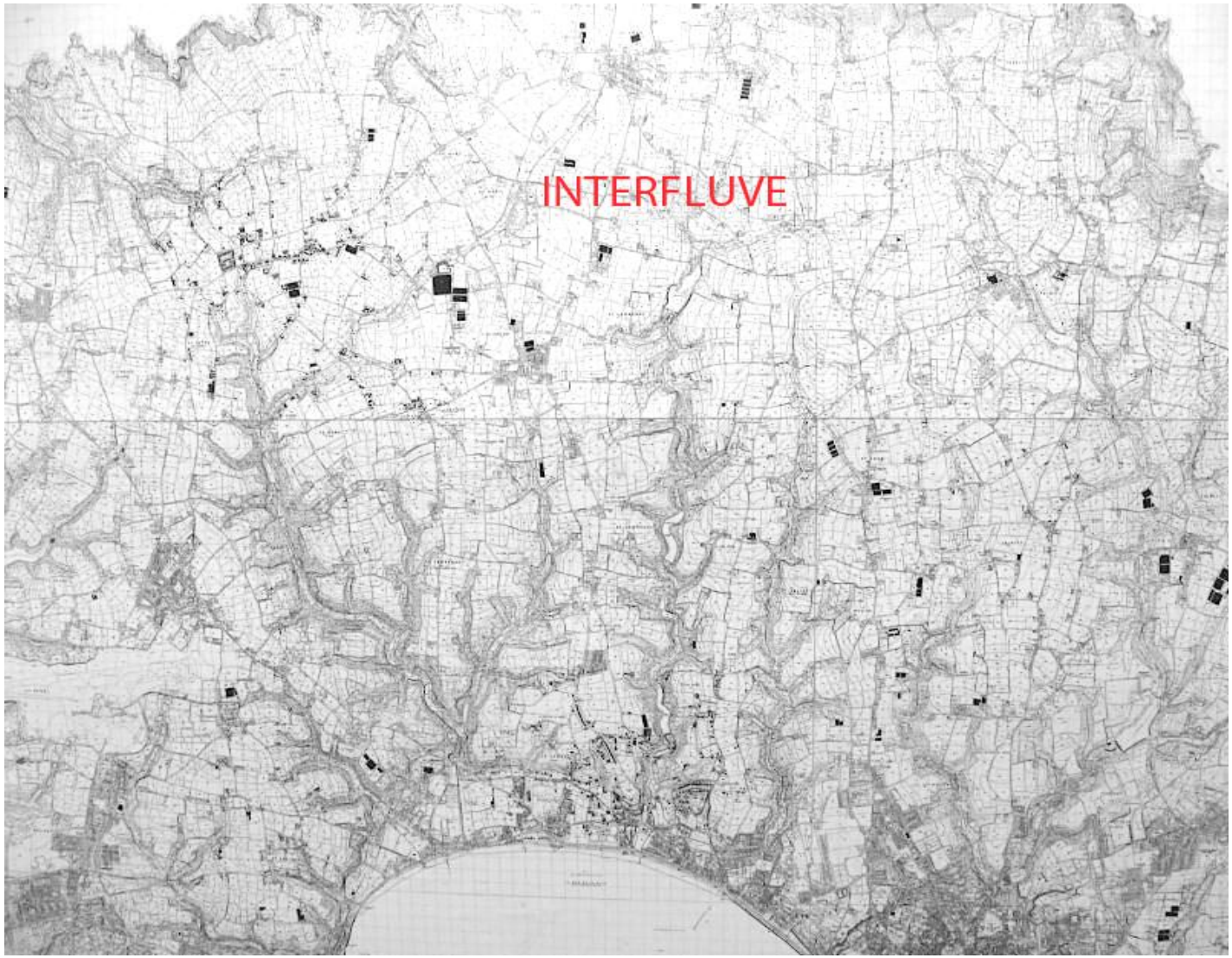
.....and La Ville ès Nouaux, St. Helier.

JERSEY GEOPARK. St. Lawrence Church, Canon doorway.

JERSEY GEOPARK. St. Ouën's Church.

JERSEY GEOPARK. Grosnez Castle built of NW granite.

JERSEY GEOPARK. Water Resources; surface water valleys.



Watercourse types (heights Above Ordnance Datum (AOD).

The watercourses can be delineated into 5 watercourse types.

1. Steep shoreline watercourses less than 1km long - one reach type.

2. Shallow shoreline watercourses less than 1km long - one reach type.

3. Moderate sloped watercourses with no change in gradient - one reach type.

4. Variable sloped watercourses with shallowing gradient transition between 15 - 45m AOD - two reach types.

5. Variable sloped watercourses with steepening gradient transition at 45m AOD - two reach types.

In addition, where present, reservoirs would split the watercourse up further.

Most of the streams on the island fall within 2 of these types, as can be seen in Fig. 2. below which shows the streams coloured by type.

Fig. 3 shows that there is a general trend in channel gradients, with watercourses less than 1 km long having steep gradients typically greater than 0.10m/m. An inflection point occurs at this point with watercourses longer than 1km having shallower gradients. Whilst watercourses longer than 1km long typically have shallower gradients, the gradients often vary along these longer watercourses, from which multiple reaches can be delineated.

Although it could be considered more pragmatic to reduce the numbers of types down further, the five types have been retained; the reason being that it is important to understand the relative types of different water bodies if proxy data is to be used through the Integrated Water Management Programme (IWMP) (e.g. if a watercourse is lacking ecological monitoring data, it may be possible to use another water body of the same type as a data ‘donor’).

Jersey's water bodies and Water Management Areas (WMAs) & Integrated Water Management Plan (Roberts, K. & Neale, C. 2014, Atkins Ltd. for Jersey States, Challenges for the water Environment)

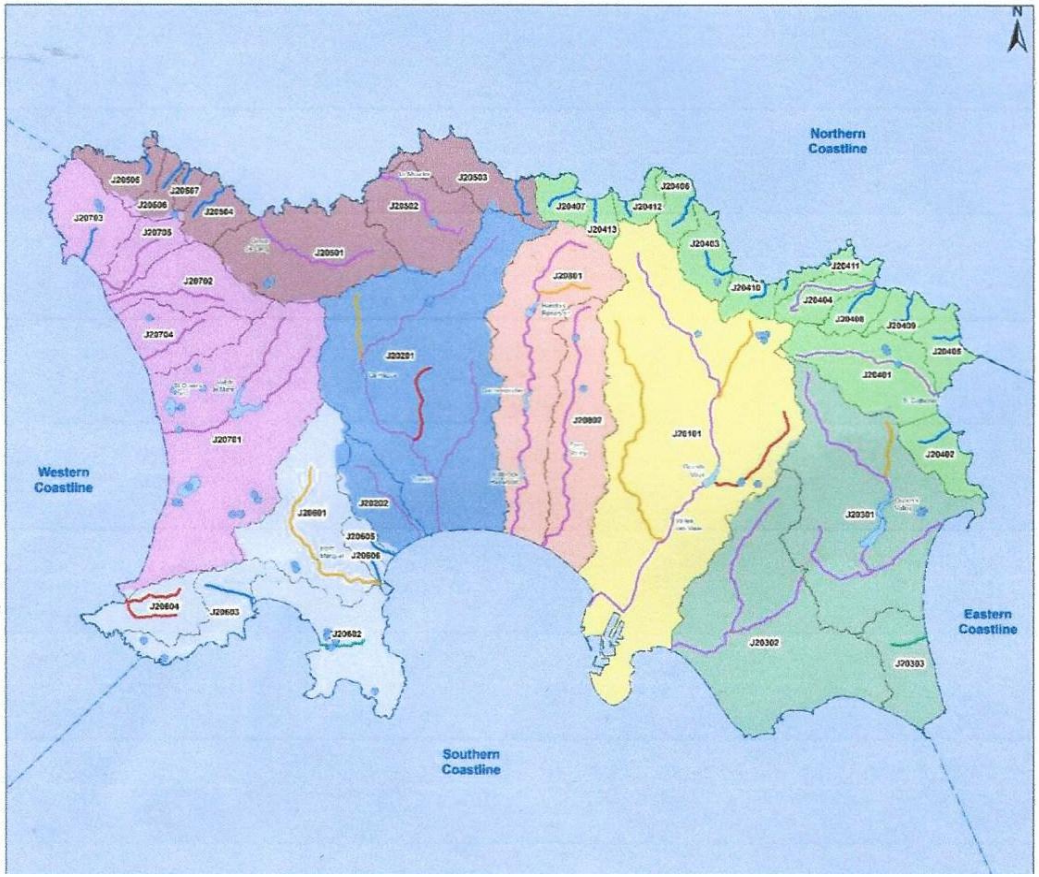
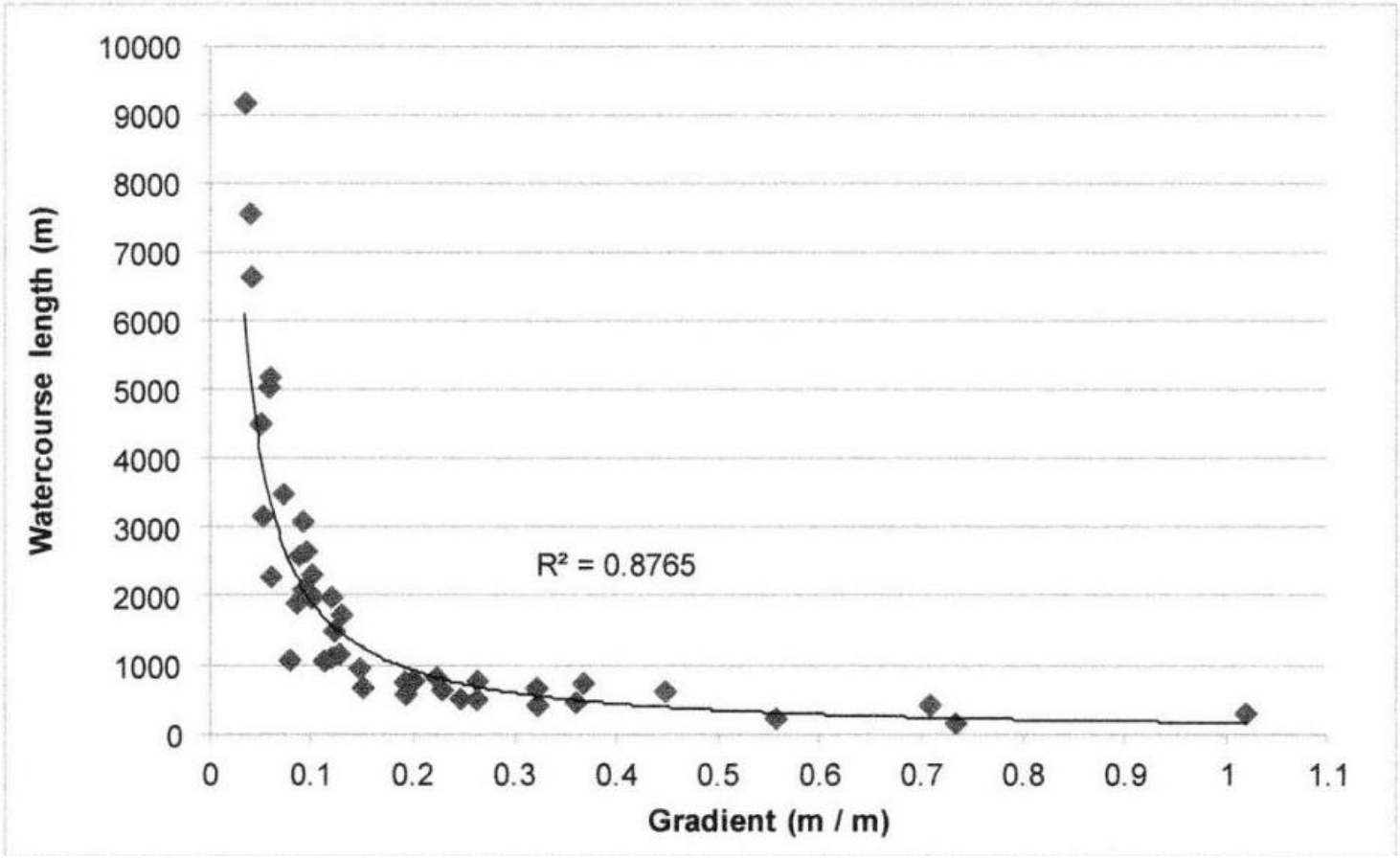


Fig. 3.


Watercourse length (m)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
R² = 0.8765
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
Gradient (m / m)

Fountaine and Pump in St. Ouën.

Protected Sources Register.

The WFD (Water Framework Directive) requires a Register of protected Areas to be established; for England and Wales this consists of an Microsoft (MS) Access database and, where appropriate, the water body data sets have a ‘protected areas’ attribute. However, due to the size of Jersey (there will be fewer Protection Areas) and for simplicity of data management in the future, a pragmatic approach has been undertaken that simply marks up the protected areas on the Island with Geographic Information System (GIS) dataset attributes. GIS layers will distinguish different types of protected areas (for example, with drinking water priority protected areas which will contain the main water supply reservoirs as well as the upstream catchment areas).

Protected areas will be defined in the following categories:

Areas for the protection of habitats and species.

Water bodies used for the abstraction of drinking water.

Recreation waters.

Nutrient sensitive areas.

Areas designed to protect economically significant aquatic species.

Under the Water Framework Directive, protected areas have additional quality standards applied to them. Protected areas are usually designated as requiring a higher degree of protection either for their surface water or groundwater, or to conserve habitats and species that directly depend on those waters. Across Europe, many of these Protected Areas include sites that are already designated under existing European Legislation. This isn’t straight forward in Jersey where European legislation is not necessarily adopted and these areas are not already in existence. Realistically, resource implications are also paramount and there is a need to avoid additional layers of bureaucracy.

Pump and trough, La Hougue Bie.

Groundwater extraction by windmill, east of St. Saviour School.

Household well, north of Les Cinq Chênes.

JERSEY GEOPARK. Jersey Soil Types (Jones et al. 1990. p. 9).

1. The Trinity Series consists of silty and fine sandy loams on loess, loessic head and some fine blown sand.

2. The Colombier Series consists of silt to fine sandy loams developed on the Jersey Shale Formation and on its Pleistocene deposits derived by weathering.

3. The Noirmont Series consists of sandy loam developed over granite.

4. The Samarès Series comprises silty to fine sandy loams developed on loess or blown sand.

5. The Rozel Series consists of silty to sandy loams developed over head or igneous rock.

6. The Radier Series consists of silty clay-loams to fine sandy loams which have developed over alluvium or other drift in the valleys.

7. The St. Ouën Series varies from loamy sands to sandy loams over blown sand with little organic matter.

JERSEY GEOPARK. KEY HABITAT AREA DESCRIPTION.

1. All grassland habitats.

1a. Acid grassland with/without bracken, scrub, trees.

1b. Marshy grassland with/without bracken, scrub, trees and other combinations.

1c. Neutral grassland with/without bracken,scrub, trees and other combinations.

1d. Coastal grasslands (including maritime cliff) with/without other coastal habitats.

1e. Other grasslands (mostly not ground truthed)

2. Bracken with/without other habitats.

3. Coastal heath land with/without other coastal habitats.

4. Woodland.

4a. Broad leaved plantation.

4b. Broad leaved semi natural woodland.

4c. Conifer plantation.

4d. Mixed conifer/broad leaved.

4e. Other woodland (not ground truthed).

.....and.....

5. Scrub.

5a. Gorse dominated scrub.

5b. Other scrub.

6. Dune communities with/without bracken, bare sand.

7. Ruderal (plants growing in rubbish or rubble).

8. Open water including swamp and marginal vegetation.

9. Salt marsh.

10. Strandline.

11. Quarry.

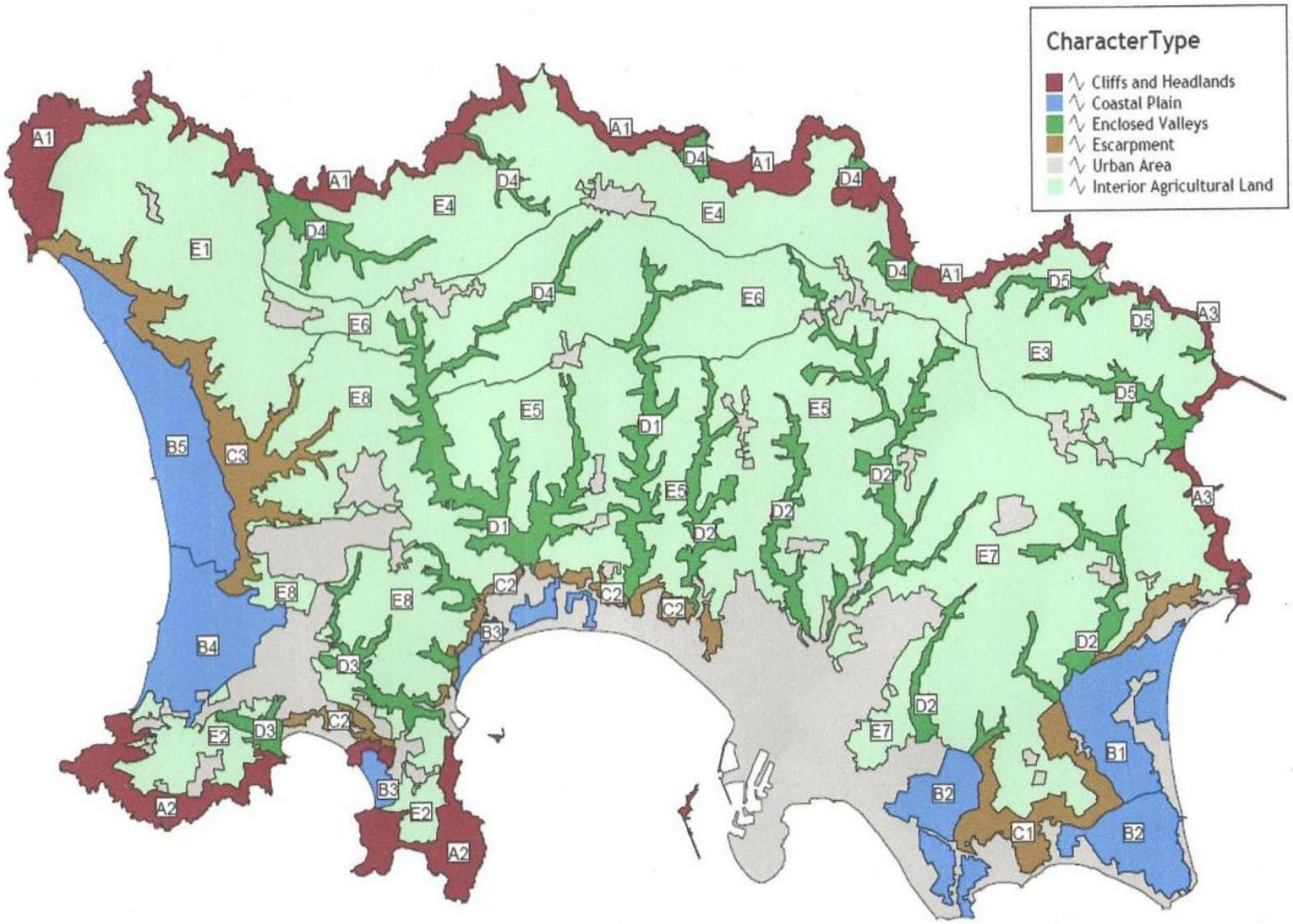
12. Amenity grassland.

13. Arable.

14. Bare ground.

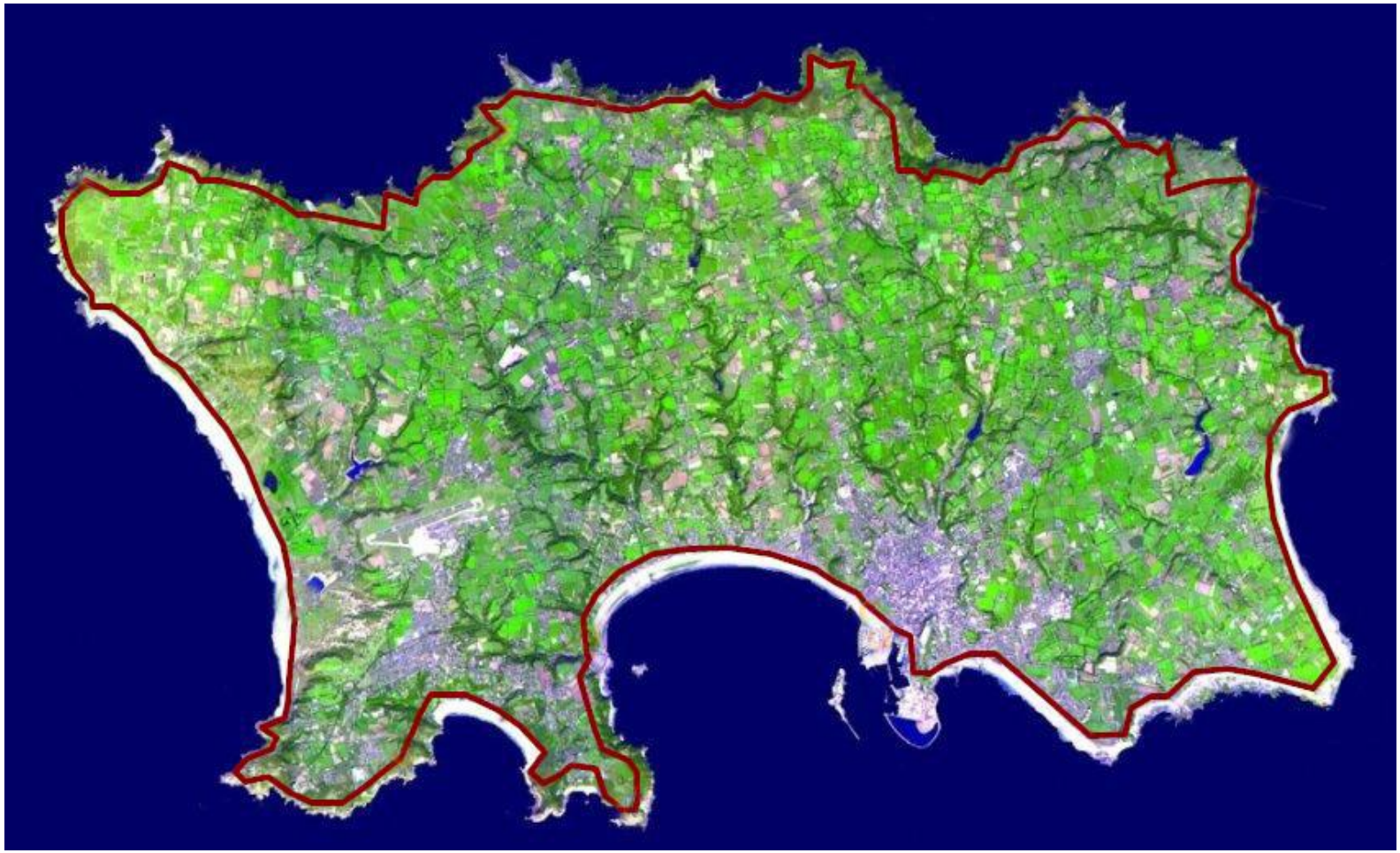
JERSEY GEOPARK. Natural, agricultural & urban environments.

(States of Jersey. Island Plan 2011).



JERSEY GEOPARK. Natural and Human land use (farmland - light green; woodland - dark green; purple - urban; walking route - brown).

(www.theramblingbadgers.walkingplaces.co.uk)



JERSEY GEOPARK. St. Peter's Valley easten tributary stream land use.

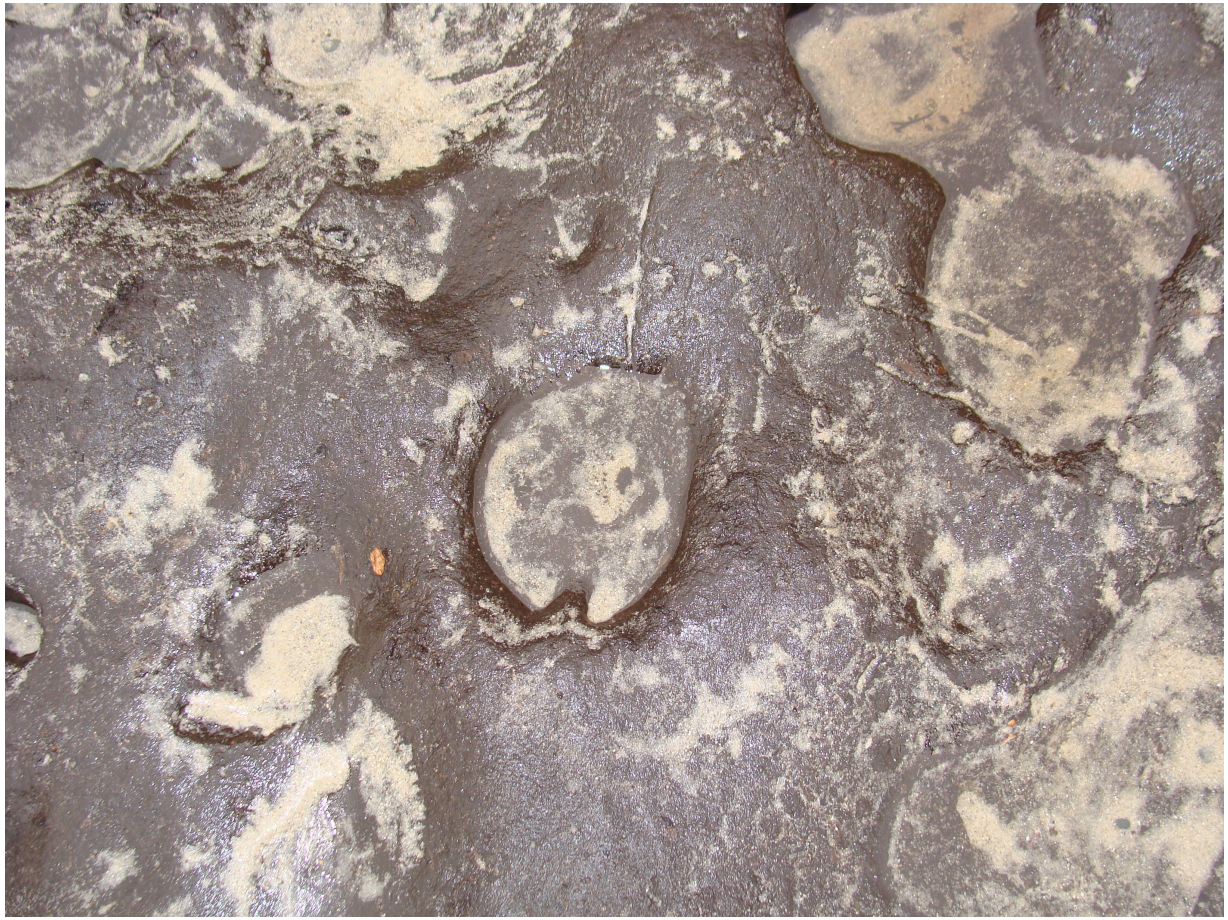
JERSEY GEOPARK. Le Val de la Mare Reservoir water resource.

JERSEY GEOPARK. La Mare au Seigneur, Les Mielles land use.

JERSEY GEOPARK. Dune vegetation land use (Recreation).

JERSEY GEOPARK. Peat beds; former peat diggings; north of La Saline. St.Ou.

JERSEY GEOPARK. Peat beds; hoof prints, L'Ouzière, St. Ou.



.....and evidence from the peat, Phragmites, Alder, Sedge, Birch.

JERSEY GEOPARK. Hedgerow & farmland.....fodder crop.

JERSEY GEOPARK. Mixed hedgerow.

JERSEY GEOPARK. Entomology, Order Coleoptera; garden insects, beetles.

.....and another beetle! ...

JERSEY GEOPARK. Entomology, Order Lepidoptera, moths.

.....and another moth.....

JERSEY GEOPARK. Zoology. Reptilia, Suborder Lacertilia, Green Lizard.

.....what's over there.....

. . .no! .....that looks better...

JERSEY GEOPARK. Zoology. Family Anatidae. A duck & where are my ducklings? .....cultivated land habitat.

JERSEY GEOPARK. Other sightings in domestic environments include…..

a long-tailed tit.....

....and a Jay .....

.... a long-eared / tufted owl.....

Jersey Zoo. Durrell Wildlife Conservation Trust; with its own habitats.

- The park is located at Les Augrès Manor, Trinity, Jersey, The park is situated in 32 acres (13 ha) of landscaped parkland and water - gardens. The Trust has a strong commitment to looking after the Island's native wildlife, and large areas within the grounds have been designated native habitat areas. The extensive planting of flowering and fruiting trees throughout the grounds also serves to attract a plethora of wild birds and insects. Included in the former are several species of bird which used to be commonly seen in island gardens but have become increasingly scarce, including the house sparrow and song thrush. There are over 50 nest - boxes positioned around the grounds, which are used by a variety of birds including barn owls, kestrels, swallows and martins. Other animals which are commonly seen within the grounds are the red squirrel, bank vole, and the short - toed treecreeper (Wikipedia).
- Durrell Wildlife Park was established in 1959, then known as Jersey Zoo. It was opened by Gerald Durrell and is now operated by the Durrell Wildlife conservation trust. It is home to over 130 different species of animals and mainly concentrates on the conservation of rare and endangered species including the Black Lion Tamarin, Pygmy Hogs, Pink Pigeons, Mountain Chicken Frogs, and many more.

Jersey Zoo began as the first ever conservation - themed zoo.
60 years later, Gerald Durrell's animal haven is the natural place to discover some of the world's most incredible creatures. Whether you're after fun, tranquillity, knowledge or a place to soak up the sunshine, this stunning 32 - acre park with valleys, woodland and some of the world's rarest animals is the perfect chance to experience 'the jewel in Jersey's crown'.The Trust is home to 1,400 mammals, birds, reptiles and amphibians and over 130 endangered species. Sumatran orang-utans, Andean bears and Montserrat orioles, rescued from beneath the smouldering volcano, live in lush, spacious environments which closely replicate their native habitats. Madagascar lemurs and tiny lion tamarinds from Brazil roam free in woodland, leaping through the trees.

Other exhibits include a walk through aviary and a cloud forest housing otters, coatis and howler monkeys.

JERSEY GEOPARK. Littoral habitat, various flora (algae) & fauna; La Rocque wave-cut platform ; not an SSI but RAMSAR.

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Websites. www.prehistoricjersey.net (J. Percival)

www.gov.je/environment

www.societe-jersiaise.org.

www.jerseygeologytrail.net (Ralph Nichols)

Other publications include texts and maps on;

Bird Reports. La Société Jersiaise.
Bats. Bat Reports. www.gov.je/environment
Squirrels. Routes. "
Owls. Sites. "

JERSEY GEOPARK Notes for discussion.

1. Links with Jersey National Park ….but to include central parts….whole island.
2. To follow UNESCO Geopark criteria.
3. To include walks and trails for visitors throughout
4. To include maps of observation sites for fauna and flora along trails.
5. No central book outlet for flora and fauna.

   Heritage outlets at Museum, Castles, La HBie, Hamptonne, Archive

   Soc. Jers. In town. JEP. harbours & Airport outlets.
6. Tourism outlets?
7. Publicity?
8. Selection of booklets, distribution. Not all available are displayed at all outlets
9. Website not accessible to all tourists.
10. Harbours and Airport book stalls for incoming….only at exit in airport.