

Giant's Causeway and Causeway Coast World Heritage Site

Geoconservation



CAUSEWAY COAST & GLENS
HERITAGE TRUST



United Nations
Educational, Scientific and
Cultural Organisation



In partnership with UNESCO's
World Heritage Centre

INTRODUCTION TO THE CAUSEWAY COAST AND GLENS

Stretching from City of Derry Airport in County Londonderry, to Larne in County Antrim, the area of the Causeway Coast and Glens includes some of the most geologically diverse landscapes on Earth. The jewel in the crown is undoubtedly the Giant's Causeway and Causeway Coast World Heritage Site, but it represents just a small part of the overall story, with rocks dating from around 650 million years ago right up to earth processes which are still active today.

Given the outstanding geological diversity of the Causeway Coast and Glens, several different designations are used to help protect and preserve our special landscapes. This booklet outlines the main designations which relate to geology and geomorphology in Northern Ireland. It highlights why certain areas are designated and what effects this can have on landowners or anyone who uses land within a designated area. In many cases, a case study from the from the Causeway Coast and Glens area has been given to provide an example of how these designations are applied.

Our rocks and landscapes are special. Let's work together to try and keep them that way.



- Causeway Coast and Glens Region
- Area of Outstanding Natural Beauty AONB
- UNESCO World Heritage Site
- Airports

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Protecting our rocks and landscapes

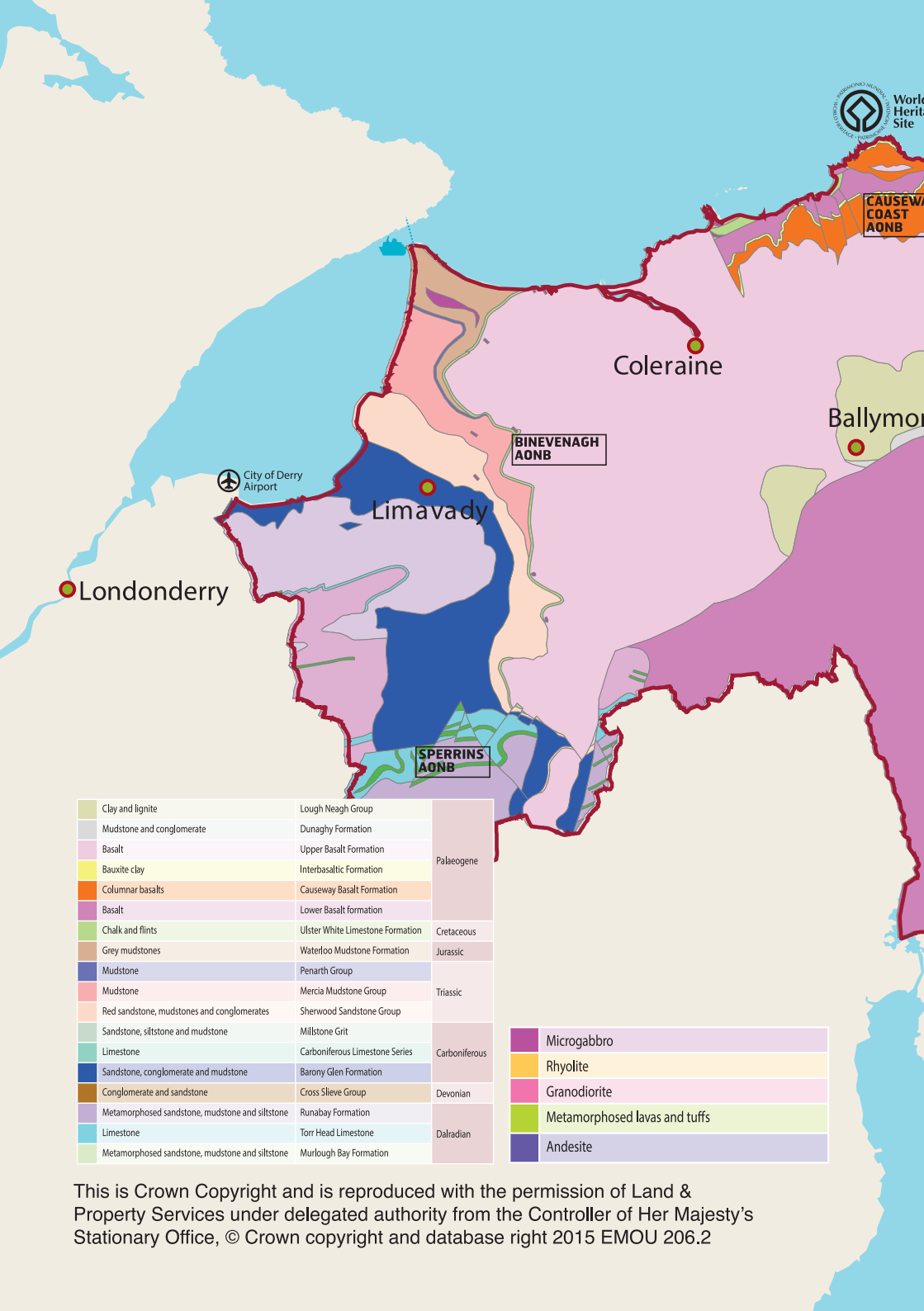
Whilst rocks and landscapes may appear to be solid and fixed, they are irreplaceable and are often vulnerable to a number of activities and land use practices. The removal of rocks at a number of scales ranging from quarrying to small scale collection is a real threat, as is obscuring rocks and landscapes through vegetation growth and burial.

One way to protect our rocks and landscapes is to formally designate them as special areas. In some cases an area can be of such importance that it is designated under national and international legislation.

In many cases, sites which have a formal designation represent the best examples of a particular Earth science interest (e.g. minerals, fossils or past climate conditions) and are managed in order to conserve their special features. In other cases, an entire landscape can be designated (e.g. Binevenagh, the Causeway Coast and the Antrim Coast and Glens which are all Areas of Outstanding Natural Beauty). The Giant's Causeway and Causeway Coast is just one example of a site which has more than one designation to help protect its fantastic geology and geomorphology features.

Because the landscape of the Causeway Coast and Glens is so diverse, the sheer number of designations and responsible authorities can be confusing. Some designations offer a much higher level of protection than others. To help point you in the right direction, the following is a list of the key designations applied in Northern Ireland.





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Designations used in Northern Ireland

- Areas of Special Scientific Interest (ASSIs) are designated to protect areas that represent the most important areas for our plants, animals and geology. ASSIs are only applied where scientific evidence confirms their importance.
- Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are collectively known as Natura 2000 sites. They are designated to meet the UK's commitments under the EC Habitats and Birds Directive. They provide increased protection to plants and animals that are rare or threatened in a European context.
- National Nature Reserves (NNRs) and Nature Reserves (NRs) are designated to protect areas that are nationally important for plants, animals, or features of geological or other special interest. NRs are managed for conservation and to provide special opportunities for visitors, study or research.
- Areas of Outstanding Natural Beauty (AONBs) are used to protect and enhance distinctive landscapes and areas of scenic beauty. In addition they are used to promote the enjoyment of an area by members of the public.
- World Heritage Sites (WHs) are sites that are important on a global scale. They are deemed to be of Outstanding Universal Value and are therefore inscribed on the World Heritage List by the UNESCO World Heritage Centre.



World Heritage Sites

An UNESCO World Heritage Site is a place that is listed by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as having natural or cultural heritage of Outstanding Universal Value. Such sites are considered as irreplaceable treasures.

The World Heritage List was established in 1972 through the International Inter-Governmental World Heritage Convention and is maintained by the International World Heritage Programme and administered by the UNESCO World Heritage Committee.

To be inscribed on the World Heritage List, sites must, through research, demonstrate that they have Outstanding Universal Value and integrity, basically a measure of their quality. They must also demonstrate that they meet at least one out of ten selection criteria. These are used for both natural and cultural heritage; however just two criteria (vii and viii) relate to geology, landscape and Earth science.

Criterion vii: To contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance

Criterion viii: To be outstanding examples representing major stages of Earth's history, including the record of life, significant on-going geological processes in the development of landforms or significant geomorphic or physiographic features.

While each World Heritage Site remains the property of the original owner(s), UNESCO considers it in the interest of the international community to conserve each site. The Government works in partnership with the public, private and voluntary sectors to achieve this.

For more information visit the UNESCO World Heritage Centre at <http://whc.unesco.org>



There is currently one WHS in the CCGHT area:
Giant's Causeway and Causeway Coast World Heritage Site.

World Heritage Sites – what does it mean?

In Northern Ireland, as in the rest of the UK, World Heritage Sites are not statutory designations. This means they are not protected by specific legislation. Designation as a World Heritage Site does not necessarily place restrictions on land use and development; however in Northern Ireland the planning authorities have passed a number of conditions on development within, and in close proximity to, the Giant's Causeway and Causeway Coast World Heritage Site. UNESCO requires all World Heritage Sites to have a Management Plan. These plans have no legal basis but help those who manage the site to coordinate the delivery of local, national and international policies.

Every country which has signed the World Heritage Convention is obliged to prepare reports on the State of Conservation of their World Heritage Sites. These help managers to identify and resolve any major or recurring problems. A process known as Periodic Reporting allows the World Heritage Centre to assess how well the World Heritage Convention is being applied at individual sites. This is completed on a rolling six-year cycle and the results are reported by the World Heritage Committee to the General Conference of UNESCO. If there are any major issues, the World Heritage Committee can request that action is taken to address any concerns.

Unquestionably, World Heritage Status brings with it numerous advantages, not only for the conservation of globally significant heritage but also for the associated economic and social benefits that arise as a result. These can include an increase in the prestige of the site in question, increase in tourism activity, greater capacity to attract financial support, better organisation of monitoring and inspection of conservation activities, increased public engagement, guarantees of effective conservation measure and the opportunity to develop successful partnerships that work together to achieve the same goal.

Areas of Special Scientific Interest (ASSIs)

Areas of Special Scientific Interest (ASSIs) are areas of land that have been identified by scientific survey as being of the greatest importance for their conservation value. The majority of ASSIs are in private ownership. The Government aim to achieve appropriate management of such sites through a positive working relationship with landowners and others.

ASSIs are designated through legislation contained within the Environment (Northern Ireland) Order 2002. The Government must declare land as an ASSI if it is of special scientific interest because of its flora or fauna, or because of its geological features.

All ASSIs have a well-defined boundary, and whilst they are often depicted as dots on a map, they can cover extensive areas. Each ASSI has an extensive range of documentation including a citation document that outlines exactly why the area was designated. These can be viewed for every ASSI in Northern Ireland at the link below:

http://www.doeni.gov.uk/niea/protected_areas_home/new_assi_landing_page.htm

Additional information on all of the geological sites can be found against the relevant location in the Earth Science Conservation Review website at the link below:

<http://www.habitas.org.uk/escr.list.asp>

There are currently 33 ASSIs with an Earth science interest in the CCGHT area.



GEOCONSERVATION

NAME	GRID REF	INTEREST
Ballycastle Coalfield	D154420	Carboniferous rocks
Bann Estuary	C799361	Contemporary processes and sea-level history
Binevenagh	C686309	Tertiary geology
Black Burn	D285212	Contemporary processes
Bovevagh	C668140	Pleistocene geology
Capecastle	D101364	Cretaceous geology
Carneal	J390959	Mineralogy
Carrickarade	D055447	Tertiary geology and contemporary processes
Castle Point	D114419	Cretaceous geology
Church Bay	D151906	Sea-level history
Cloghastucan	D290251	Cretaceous geology
Cloghfin Port	J464941	Triassic and Cretaceous geology
Craigahulliar	C883389	Tertiary geology
Fairhead and Murlough Bay	D189426	Dalradian, Carboniferous and Tertiary geology and palaeontology
Giant's Causeway & Dunseverick	C971457	Tertiary geology and contemporary processes
Glenarriff	D220220	Tertiary geology
Kilcoan	J461986	Cretaceous geology
Knock Dhu & Salliagh Braes	D341053	Contemporary processes
Linford	D328071	Contemporary processes
Little Deer Park	D333144	Mineralogy
Loughermore Mountain	C606150	Dalradian geology
Minnis	D339134	Contemporary processes
Portballintrae	C923420	Pleistocene geology
Portrush West Strand	C856401	Sea-level history
Ramore Head & the Skerries	C857412	Jurassic and Tertiary geology
Rathlin Island – Coast	D127507	Tertiary geology
Runkerry	C936428	Contemporary processes
Scawt Hill	D337090	Tertiary geology
Tievebulliagh	D194268	Tertiary geology
Tircreven	C701324	Jurassic and Tertiary geology
Torr Head	D233404	Dalradian geology
Waterloo	D409038	Triassic and Jurassic geology
White Rocks	C895409	Cretaceous geology

Areas of Special Scientific Interest (ASSIs) – What does this mean?

When an ASSI is declared, owners and occupiers of the land receive a list of operations which require consent from the Government (referred to as notifiable operations). This is a list of activities that may be harmful to the nature conservation of the site. These might include dumping, development, collection of geological sampling and re-vegetation.

Should a landowner want to carry out any activity that is deemed an operation requiring consent they must notify the Government and await written response before starting work. Government representatives will assess the potential impacts of the proposed activity. The majority of the applications for consent are approved, although it may be necessary to set out conditions on how any activity may be carried out so that it protects the designated features of the ASSI.

Carrying out notifiable operations on land designated as an ASSI without obtaining authorisation in the form of written consent may constitute an offence.

Government bodies are not exempt from this process. For more information on the duties of public bodies visit:

http://www.doeni.gov.uk/niea/protected_areas_home/new_assi_landing_page/assent_applications.htm

For more information on the duties of private landowners and developers visit:

http://www.doeni.gov.uk/niea/protected_areas_home/new_assi_landing_page/hra_advice-4.htm



Special Areas of Conservation (SACs)

Special Areas of Conservation (SACs) are those that have been protected under the Habitats Directive and Habitats Regulations and are designated to safeguard habitats and species which are rare or threatened in a European context.

Together with Special Protection Areas (SPAs) they make up a network of sites known as Natura 2000. This network aims to maintain rare or endangered species and habitats in a favorable conservation status throughout Europe.

Whilst there is no provision for geological sites as SACs, many of the habitats and the resulting species are a direct result of the underlying geology. Protection of important plants and animals can provide indirect protection for geological features e.g. at the Giant's Causeway the small narrow-mouth whorl snail guarantees protection of the site under the Habitats Directive.

What does this mean?

Designation as a SAC restricts any activity that could cause the deterioration of habitat types and habitats of a species, as well as the disturbance of a species for which an area is designated. Consent must be sought and will not be granted if an activity is deemed likely to have an adverse effect on the integrity of the site.

For more information on managing Natura 2000 sites visit:

http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf



Special Areas of Conservation. There are currently 9 SACs in the CCGHT area:

NAME	GRID REF	INTEREST
Magilligan	C686371	Dune and related habitat defined by coastal processes
Bann Estuary	C797363	Dune and related habitat defined by coastal processes
Binevenagh	C686309	Range of habitats and rare species defined by local geology
Garry Bog	C940305	Peatland defined by hydrology
North Antrim Coast	D022440	Range of habitats and rare species defined by local geology
Breen Wood	D123336	Woodland defined by hydrology
Rathlin Island	D133518	Range of habitats and rare species defined by local geology
Garron Plateau	D240190	Peatland defined by hydrology
Main Valley Bogs	D034195	Peatland defined by hydrology

Special Protection Areas (SPAs)

Special Protection Areas (SPAs) are those that have been protected under the Birds Directive (Directive on the Conservation of Wild Birds) of the European Union and are classified for their importance as areas for breeding, overwintering and migrating birds.

Whilst there is no provision for geological sites as SACs, many of the habitats and species are a direct result of the underlying geology.

What does this mean?

Classification as a SPA restricts any activity which could have a negative impact on the site. Consent must be sought and will not be granted if an activity is deemed to have an adverse effect on the integrity of the site.

For more information on managing Natura 2000 sites visit:

http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

Special Protected Areas. There are currently 2 SPAs in the CCGHT area:

NAME	GRID REF	INTEREST
Rathlin Island	D127507	Seabird colonies on sea-cliffs defined by local geology
Sheep Island	D049459	Seabird colonies on sea-cliffs defined by local geology

Areas of Outstanding Natural Beauty (AONBs)

Areas of Outstanding Natural Beauty (AONBs) give formal recognition to distinct landscapes of high scenic value in Northern Ireland. By designating AONBs, the Government recognises that the landscape deserves extra care so its special qualities can be shared with future generations.

AONBs are a statutory designation that permits the Government to make provisions for the conservation and enhancement of the area's natural beauty and increase awareness and public enjoyment of the area. This is usually achieved through support for voluntary and non-governmental AONB Partnerships.

What does this mean?

AONBs help protect outstanding landscapes, providing space for healthy outdoor living, recreation and work. Access for recreation and tourism is desirable, but no landowner has to allow members of the public on to their land without permission. Contact your local council to find out more.

AONB status does not limit your options to expand your operations or to obtain planning consent; however it is important that you take account of your outstanding landscape when developing proposals.

Being designated as an AONB allows for (non-compulsory) management of the landscape to maintain its quality, the special features of the landscapes, and to enhance public access and enjoyment. This is delivered through AONB Management Plans.

For more general information on AONBs please visit:

http://www.doeni.gov.uk/niea/protected_areas_home/aonb.htm

There are currently 4 AONBs in the CCGHT area:

Binevenagh AONB

Causeway Coast AONB

Antrim Coast and Glens AONB

Sperrins AONB

National Nature Reserves (NNRs) and Nature Reserves

The first statutory Nature Reserves in Northern Ireland were declared in 1970 under the provisions of the Amenity Lands Act (Northern Ireland) 1965. Nature Reserves are chosen from amongst the very best examples of Northern Ireland's wildlife, habitats and geology. Their designation is a public recognition by Government of their importance.

In 1985 the Nature Conservation and Amenity Lands (Northern Ireland) Order superseded the 1965 Act and introduced National Nature Reserves for those sites of National Importance, whilst still retaining the Nature Reserve designation.

The primary aim of managing these sites is to conserve their features through the development of experience and techniques in managing land for conservation. However, they have a secondary aim of providing opportunities for the public to experience these natural habitats and landscapes.

What does this mean?

Many Nature Reserves and National Nature Reserves are owned and managed by the Government; however where this is not the case the Government will work with and support landowners to conserve wildlife, habitats and geology.

For more information on Nature Reserves please visit:

http://www.doeni.gov.uk/niea/protected_areas_home/nature_resintro.htm

There are currently 12 Nature Reserves in the CCGHT area:

NAME	GRID REF	INTEREST
Altikeeragh	C730316	Peatland
Ballymaclary	C700365	Coastal habitats and processes
Binevenagh	C685309	Inland cliff habitats
Breen Oak Wood	D125338	Woodland
Giant's Causeway	C954453	Coastal habitats and geology
Glenarriff	D210205	Woodland
Kebble	D095513	Coastal habitats and seabird colonies
Magilligan Point	C660390	Coastal habitats and geology
Portrush	C856412	Geology
Roe Estuary	C635295	Coastal habitats
Slieveanorra Mountain	D132265	Peatland
Straidkilly	D302163	Woodland

Giant's Causeway and Causeway Coast World Heritage Site

The Giant's Causeway and Causeway Coast was inscribed as a WHS by UNESCO in 1986. It is of outstanding universal value and meets two of the criteria set out in the World Heritage Convention.

Under Criterion (vii): The cliff exposures of columnar and massive basalt at the edge of the Antrim Plateau present a spectacle of exceptional natural beauty. The extent of visible rock sections and the quality of the exposed columns in the cliff and on the Causeway combine to present an array of features of considerable significance.

Under Criterion (viii): The geological activity of the Tertiary era is clearly illustrated by the succession of the lava flows and the interbasaltic beds which are in evidence on the Causeway Coast. Interpretation of the succession has allowed a detailed analysis of Tertiary events in the North Atlantic.

Most of the site is in the care of the National Trust, whilst a group of stakeholders known as the World Heritage Steering Group is responsible for the World Heritage Management and Action Plan. These stakeholders include: NIEA, National Trust, Moyle District Council, the Crown Estate, CCGHT, Tourism Northern Ireland, Council for Nature Conservation and Countryside, the Geological Survey of Northern Ireland, PlanningNI and Queen's University, Belfast.

Whilst World Heritage Status alone offers little in the way of protection, the property is protected by a variety of statutory and non-statutory designations. Most of the site is a National Nature Reserve and it also forms part of the Giant's Causeway and Dunseverick ASSI. Almost all of the property has been designated as the North Antrim Coast SAC and the marine portion of the site falls within the Skerries and Causeway marine SAC. The surrounding Causeway Coast AONB provides the site with additional incidental protection. Planning Policy Statements (PPSs) for Northern Ireland set out policies on land-use and other planning matters and two of these refer specifically to World Heritage Properties and SACs.

To download the current Management Plan for the Giant's Causeway and Causeway Coast World Heritage Site 2013-2019 please visit:

<http://giantscauseway.ccght.org/wp-content/uploads/2014/02/2013-2019-WHS-Management-Plan.pdf>

Ramore Head and the Skerries ASSI

The primary reason for the designation of the Ramore Head and the Skerries ASSI is the intrusion of an igneous rock called dolerite about 60 million years ago into mudstones of Jurassic age (about 190 million years ago). Whilst this is not unusual in itself, the mudstone contains abundant fossil ammonites (coiled-shells) and has been 'baked' into a type of rock called hornfels. The presence of these fossils in what was initially incorrectly presumed to be basalt rock prompted a major, and often bitter, international scientific debate that ultimately proved the origins of igneous rocks.

The intrusion of dolerite occurred as horizontal layers of rock found beneath the mudstone. This would have formed as magma (molten rock) was squeezed between pre-existing layers of rock, in this case mudstone, before cooling and crystallising to form dolerite. This feature is known as a sill and the one at Ramore Head and the Skerries (known as the Portrush Sill) is particularly complex.

The Skerries occur as a series of small islands visible from Ramore Head, and are part of the Portrush Sill. However, the Skerries also support a diverse range of breeding seabirds with the most notable being the kittiwake, black guillemot, and eider duck.

Part of this site has been designated as the Portrush Nature Reserve and highlights the use of multiple designations in many places.

For a full citation document and views about management for the Ramore Head and Skerries ASSI please visit:

http://www.doeni.gov.uk/niea/protected_areas_home/new_assi_landing_page/county_antrim-2/ramore_head_and_the_skerries_assi.htm



North Antrim Coast SAC

The North Antrim Coast SAC has its westerly limit at the Giant's Causeway and is characterised primarily by coastal sand dunes and sand beaches, sea cliffs and islets, and grassland.

The habitat that is the primary reason for the selection of the site is the vegetated sea cliffs along one of the most exposed coastlines in Northern Ireland. The varied geology has led to a diversity of landforms, soil types, habitats and species. The basalt cliffs in the west support a range of communities including those associated with rock crevices and cliff ledges, and a range of typical maritime grasslands and heath. Further east, the extensive chalk cliffs support mesotrophic and calcareous grasslands.

The species that is a primary reason for the designation of the site is the narrow-mouthed whorl snail (*Vertigo angustior*). This site supports the only known living population of this tiny snail in Northern Ireland. This species was rediscovered in 2002 at two separate locations on the site after previously being recorded in 1974. This location supports strong populations of the species in areas of ideal habitat; tall, lightly grazed, damp grassland.

For further information on the North Antrim Coast SAC visit:

<http://jncc.defra.gov.uk/ProtectedSites/SACselection/sac.asp?EUCode=UK0030224>



Portrush Nature Reserve

Located within the Ramore Head and Skerries ASSI, the Portrush Nature Reserve is located at the east side of Ramore Head between Portandoo Harbour and the Blue Pool. The entire site, to low water mark is accessible from the Lansdowne Road near Portrush Coastal Zone visitor centre.

The Nature Reserve is the ideal location to explore the rocks that were once the site of a heated scientific debate as outlined in the Ramore Head and the Skerries ASSI section. The rocks in questions were originally formed on a seabed about 190 million years ago, and contain many ammonite fossils (coiled-shells). About 60 million years ago, magma (or molten rock) was squeezed into the pre-existing rocks, baking them and changing their appearance. This rock is known as hornfels and is what is found at Portrush Nature Reserve. It looks very much like an igneous rock (a rock that was once molten) and due to the presence of fossils within 'igneous rock' it led scientists to believe that all rocks formed from sea water. It was later shown that the rock here was not an igneous rock at all, but a mudstone that had been baked hard by magma.

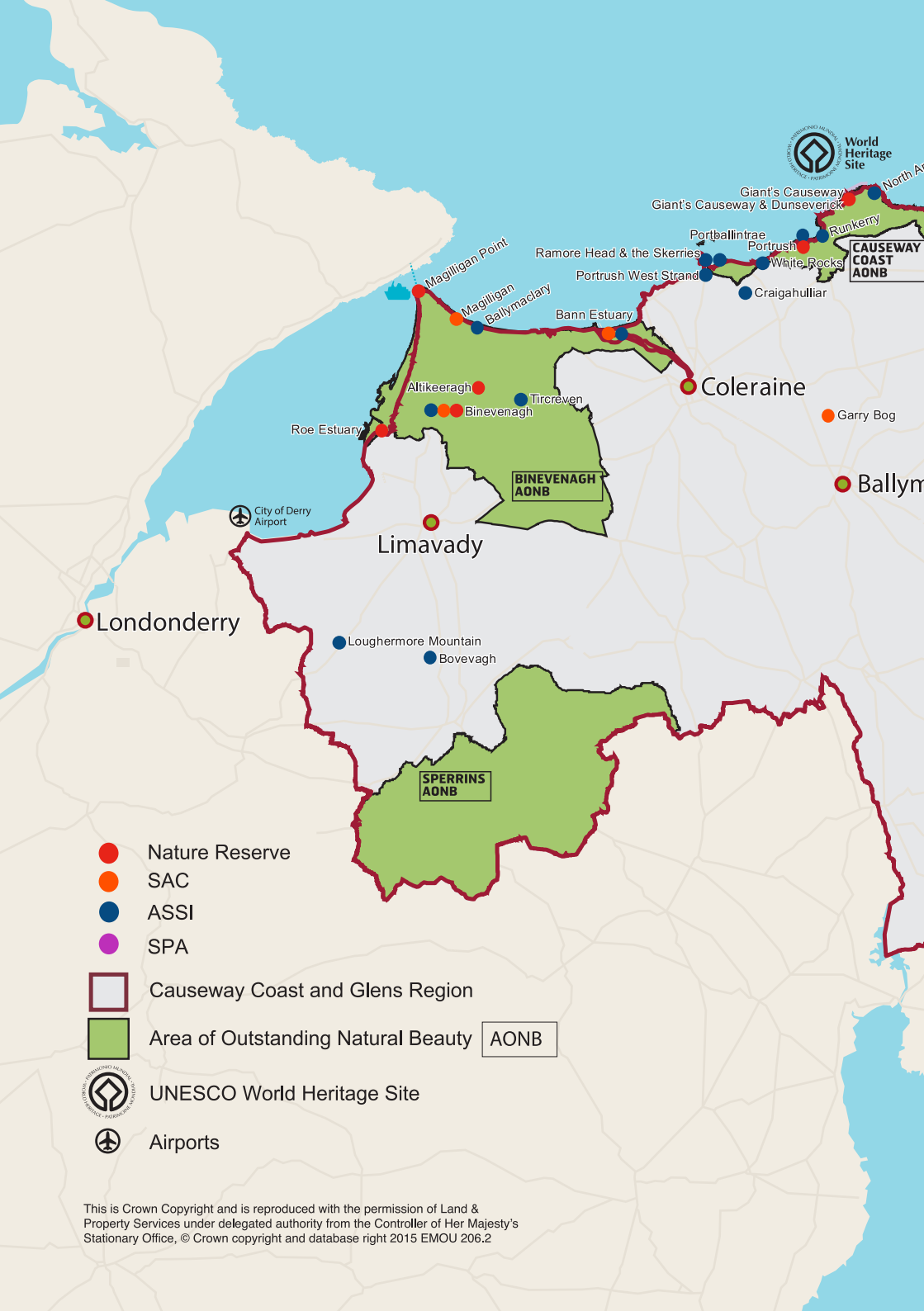
The Nature Reserve is historically important because of its role in the development of geology as a science, and was one of the last battlegrounds between two opposing views on how igneous rocks formed.

In order to safeguard the Nature Reserve, visitors are asked not to remove specimens.

For more information on Portrush Nature Reserve please visit:

http://www.doeni.gov.uk/niea/protected_areas_home/nature_resintro/nature_reserves_portrush.htm









World Heritage Steering Group Members

