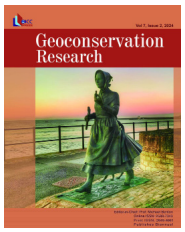

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Being in the Right Place, Dinosaur Isle Museum, Isle of Wight

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Abstract

The Isle of Wight situated off the south coast of England is a special place for geological heritage. It is a microcosm of the geology of southern England, with a huge reputation as the home of British dinosaurs. Dinosaur Isle Museum has been the vehicle to take a small local collection to international recognition. This brief account focusing on the museum, explores the role of place in where geological museums are located. The Museum is located close to numerous internationally significant Early Cretaceous geological field localities. Whereas place is important, it is the role of fossils, dinosaurs in particular, in the local economy and culture which has been the sustaining factor for the museum, and therefore its continued role in geoconservation.

Keywords: Isle of Wight; Museum; Place; Geoconservation.

Introduction

The Isle of Wight is located off the south coast of England opposite the coast of Hampshire from which it is separated by a narrow channel called the Solent. The panorama from the north coast of the Island embraces the eastern edge of the Jurassic Coast World Heritage Site in Dorset, through the New Forest National Park, to the South Downs National Landscape in Sussex. The port cities of Portsmouth and Southampton provide major access to the island. Almost diamond-shaped, the Island covers approximately 380 km² with much of the landscape given over to mixed agriculture and forestry. The resident population is approximately 141,000 which doubles during the main tourist season from June to September. Besides its outstanding geology the Island is famous as the former home of Queen Victoria at Osborne House, the poet Lord Tennyson at Freshwater, and the Isle of Wight Pop Festival which rivaled Woodstock. Perhaps less well known, it was also the home of the Reverand William Fox, who has more dinosaurs named after him than any other Englishman, a reflection of the importance of the Isle of Wight in the history of paleontology.

On the east coast of the Island facing Sandown seafront, the accredited Dinosaur Isle Museum is home to one of the most important regional geology collections in the country. Operated by the Isle of Wight Council Museums Service, it employs eight staff, including a curator, documentation officer, and preparator. While many UK museum services have lost their dedicated specialist geological curators, Dinosaur Isle Museum has managed to hold onto its core team. Its collection and global significance continue to grow, riding the

wave of the new dinosaur renaissance and part of the *Jurassic Park Generation* whilst rooted to a 200-year pedigree. Despite constant uncertainty over its future, the museum continues to flourish, a combination of place, dinosaurs, a resilient adaptable workforce, money, audience focus, and even more new dinosaur discoveries.

The Geological Heritage of the Isle of Wight

Over 90% of the Isle of Wight's coast has either cliff and/or foreshore geological exposure. The Island can be broadly split between the Paleogene north and Cretaceous south divided by the central line of chalk downland. A series of intermittently active east-west trending Late Paleozoic faults have determined the geological story of the area, with the southern part downthrown in the Cretaceous followed by basin inversion, with the northern part becoming the depocenter during the Paleogene. The fossiliferous sedimentary rocks which form the Island are rapidly eroding with a near-constant supply of fossils at many localities (Fig. 1). Yaverland on the east coast and Atherfield and Compton on the west are classic areas to study the Cretaceous marine transgression. Atherfield to Compton Bay is recognized as the richest dinosaur locality in Europe, while much of the north coast exposes the Solent Group which is unique in the British Isles. This is the source of mammal, turtle, and alligator bones along with a wealth of invertebrate and plant remains. Alum and Whitecliff bays are microcosms of the wider Paleogene sequences of southern England. For recent summaries of the geology of the Isle of Wight, see Hopson and Farrant (2015), and Gale (2019) whilst White (1921) remains a treasure trove of detail.

Existing Designations

Natural England has designated 41 Sites of Special Scientific Interest (SSSIs) on the Isle of Wight. Of these, 15 are wholly geological or include geological interests (see Table 1). To date, only two sites have been designated as RIGS (regionally important geological sites). The low number of RIGS

Figure 1. View of Yaverland to Culver Cliff, Isle of Wight. At this accessible locality, visitors can follow the Cretaceous marine transgression, from the terrestrial Wessex Formation (Barremian, Wealden Group), through the lagoonal Vectis Formation (Barremian- Aptian, Wealden Group), to the shallow marine Lower and Upper Greensand groups (Aptian to Albian), into the deep marine Chalk Group (Cenomanian to Campanian).

Table 1. List of existing geoconservation designations on the Isle of Wight.

SSSIs (geological)	Other Designations
Bembridge Down	**RIGS**
Bembridge School and cliffs	Sandown Zoo (Wildheart Trust) to Yaverland.
Bonchurch landslips	Sandown to Shanklin cliffs including Lake cliffs.
Bouldnor and Hamstead cliffs	**Heritage Coast designations**
Brading marshes and Bembridge Ledges	Hamstead
Colwell Bay	Tennyson
Compton Chine to Steephill Cove	**Marine Protected areas**
Compton Down	South Wight SAC
Headon Warren and West High Down	Solent Maritime SAC
King's Quay shore	Solent and Southampton Water SPA
Lacey's Farm Quarry	Solent and Isle of Wight Lagoons SAC
Priory Woods	Solent and Dorset Coast SPA
Prospect Quarry	Bembridge MCZ
Thorness Bay	Yarmouth to Cowes MCZ
Whitecliff Bay and Bembridge Ledges	The Needles MCZ

reflects the fact that so many sites are designated as SSSIs, but there is clearly an opportunity for further sites to be recognized. There are two Heritage Coast and seven marine protected areas (Marine Conservation Zones, Special Protected Areas, and Special Areas of Conservation). Along with the *Isle of Wight National Landscape*, formerly known as an Area of Outstanding Natural Beauty (AONB) there are extensive legal protections in place covering most of the Isle of Wight's coast and hinterland. Therefore, almost the entire coast of the Island and its geological heritage have some degree of protection. Added to these designations, the Coastal Management Plan and the 1949 Coastal Protection Act should ensure the Isle's coasts remain protected for future generations. Coastal land ownership on the Isle of Wight, like most other parts of England, is mixed, with beaches mostly belonging to the Crown Estate, but the local authority is also a major coastal landowner. Cliffs mostly belong to the landowner to whom the land abuts, but private land tends to be dwarfed by large owners such as the National Trust.

Threats to the Isle of Wight's Geoheritage

With so many designations why should the Isle of Wight's geology be under threat? There are three obvious threats, coastal defense schemes, erosion, and fossil collecting. The latter two are, however, double-edged swords. Without erosion, cliff faces would degrade and collecting ensures finds are saved from destruction. Coastal defense schemes are largely focused on coastal towns such as Ventnor on the south coast, and therefore have only localized impact. Erosion of soft cliffs, in particular those on the southwest coast facing the prevailing wind direction, can be as much as one meter per year. This means that many SSSI's remain in a

favorable condition. The downside to this is that dinosaur-bearing layers called plant debris beds, which are spatially restricted, can be eroded. Footprints when exposed become ephemeral features and are soon lost.

Underwood and Ward (2018) discussed the importance of site-specific factors such as the size of the site, rates of depletion of the fossils, and frequency of collecting visits, and argued that these criteria should dictate best practice for any site. Comparable to the Isle of Wight, they used Charmouth cliffs as an example of rapidly eroding coast. They concluded that the site demonstrably benefited from uncontrolled collecting. The West Dorset Fossil Collecting Code, except for Category 1 specimens which it is compulsory to record to obtain title, is voluntary. However, this code of conduct only reaches as far as recording findings, not ensuring that the most important specimens are secured for science.

On the Isle of Wight, even partial dinosaur skeletons may emerge over many years because of the slow erosion of cliffs, and uncontrolled collecting merely leads to the dispersal of individual animals over many collectors. At Dinosaur Isle Museum, we have witnessed bones from known type specimens come in for identification and finders walking away with them. The legal aspects of fossil collecting in the UK remain obscured by misinformation and a history of 'finders' keepers' (see Ulph 2018). In contrast, one of the most striking examples of direct action on fossil collecting was the Speeton walrus skull (Dunne and Middleton 2018), where the efforts of Scarborough Museum Service using land ownership secured the specimen's future.

Dinosaur Isle Museum

Dinosaur Isle Museum (Fig. 2) opened its doors in 2001, funded by the Millennium Commission and the Isle of Wight Council. However, the collection was founded in Newport in the 1820s. In 1913/14 this collection was brought to Sandown with the generous support of local philanthropists the Morey family, who continued to fund the museum into the 1930s. Then known as the Museum of Isle of Wight Geology and it was housed above Sandown

Figure 2. Dinosaur Isle Museum, Sandown, Isle of Wight. Opened in 2002 replacing the former Museum of Isle of Wight Geology, which had been in Sandown since 1914.

Library where it remained until the current museum was built. Following World War Two, funding for the museum came from Sandown and Shanklin Urban District Council. However, in the 1970s the then Isle of Wight County Council took over and provided for professional appointments. There has now been 50 years of continuous professional curatorial cover. For a more detailed history of the museum see Peaker and Bingham (2016) or Munt *et al*. 2021.

Since its beginnings, the collection has been focused almost solely on the Isle of Wight and has now grown to over 30,000 specimens. The collection is primarily paleontological, covering the full spectrum of the Isle's geology, from the Early Cretaceous Wealden Group to the Late Eocene-Early Oligocene Solent Group, with many Quaternary sites also represented. The major strengths of the collection are the Cretaceous and Paleogene mollusks and 'Wealden' flora and fauna. Of international significance are its Late Eocene insects, Eocene-Oligocene mammals, and Wealden dinosaurs, the collection being home to many holotypes. All these areas of the collection continue to grow, with new types identified annually. The dinosaur collection is now recognized as second only to the Natural History Museum (London) in significance. The same could probably be said about its Paleogene insects, mammals, and reptiles. However, focusing on the dinosaur theme has been essential in developing a small esoteric museum located above the local library into one of Europe's most important dinosaur collections, in a financially viable form.

How Important is Place for the Museum?

The Lyme Regis Museum, The Etches Collection Kimmeridge, The Rotunda Scarborough and Whitby Museum are all located on England's two great Jurassic coastal outcrops. Lyme Regis and Whitby museums are both general museums with a major geology component, whereas the Etches Collection and the Rotunda are both dedicated geological museums like the Dinosaur Isle Museum. So how important is place? Well, the role of the local museums is to tell the story of that area, if the main story happens like the Etches Collection to be about geology, then that is the main story.

Dinosaur Isle Museum (Fig. 3) was built in Sandown as this had become the historic home of the local geological collection. The Museum of Isle of Wight Geology came about as the town was home to its principal benefactor Frank Morey. But how else has place determined the staying power of the museum location?

Sandown as a tourism center. With many tourists staying in Sandown, the museum benefits from a captive audience. However, it's not that simple. Weather and tides impact footfall and therefore income. The beach at Sandown is only available at low tide, so for part of the day is inaccessible. As an indoor attraction, the weather will determine how busy the museum is. Perhaps Sandown has never been the focus of fossil shops as at Lyme Regis, but then nowhere really has been on the Island, with fossil shops only in Sandown and Shanklin, both on the east coast and another shop at Yarmouth on the northeast coast.

Sandown and its transport infrastructure. Tourists generally fall into two categories, day trippers and staying visitors. Sandown is one of just four places on the Isle of Wight with both road and rail links. It is an easy day trip distance from much of southern England including London, directly from the ferry terminal at Ryde. With good road connections, nowhere on the Isle is more than an hour's drive.

Sandown and its geology. The museum is located about half a mile from the section at Yaverland, so visitors can combine their visit to the museum with one of the main geological exposures on the Isle of Wight. This is very much a part of the mu-

Figure 3. Aerial view of the north end of Sandown Bay showing the proximity of Dinosaur Isle Museum to the section at Yaverland, Isle of Wight. Courtesy of Mike Collins.

Figure 4. Tridactyl dinosaur footprint in the Wessex Formation (Wealden Group) at Yaverland, Isle of Wight. The footprint seen in 2002 measures approximately 60 cm from the heel to the tip of the central toe.

seum's business model for schools and public engagement. Dinosaur footprints such as the one in Fig. 4 can be seen on the foreshore but are dependent on tides and beach sediment.

How Important is a Museum's Place in Geological Conservation?

Museums are more than repositories; they aim to inspire their audiences through the objects they display and the stories they tell. Through this, they act as gateways to subjects and places. Visitors ask two leading questions "where can I see the dinosaur footprints?" and "where can I find dinosaur bones?" The answer is generally the same. Museums can be viewed in opposite ways by members of the public: some see them positively, as reliable voices of authority that provide accurate information through knowledgeable staff, whereas collec-

tors may take a negative view, that the museum will seek to take away their valuable finds.

Anecdotally, the latter view tends to be prevalent among collectors, but rarely do any objects come in that are important enough to add to the collection. Codes such as the West Dorset Fossil Collecting Code of Conduct and the Undercliffs National Nature Reserve Fossil Collecting Code and Recording Scheme (both accessible via https://charmouth.org and https://www.jurassiccoast.org), encourage finders to report their discoveries to museums, providing a permanent record, even if the objects do not enter public ownership. At the time of writing, Charmouth Heritage Centre had recorded over 250 objects into the scheme.

Museums can contribute to geoconservation in two ways, firstly through providing the voice of authority on locations, such as where is and how important is that place? Secondly, through being a repository for important finds, holding reference collections for the public and scientific benefit, and preferably locally to the benefit of local people. One of the great things about museums such as The Etches Collection, Lyme Regis Museum, Charmouth Heritage Centre, and Dinosaur Isle Museum is accessibility to expertise. Staff and experienced volunteers are available to give advice on sites including safety, tides, and what can be found. Furthermore, and vitally for conservation, they advise about hammering, protecting exposures, and how to get further advice and identification if someone finds a fossil specimen. In 2019 staff at Dinosaur Isle Museum provided 909 in-person object identifications, even during the pandemic year of 2022, 104 objects were identified, and therefore screened for potentially important finds.

Conclusion

So, what are the benefits of local geological museums? In short, expertise, knowledge of the sites, what can be found, and the stories these tell. When visiting an historic house or a Roman villa, local geological museums can keep objects and enable people to experience them in context. A visit to the Dinosaur Isle Museum can be followed by a walk along a beach then back to the museum for identifications. The proximity of the museum to great field sites has enabled it to become what Simon (2010) termed a *Participatory Museum*, a museum that is audience-centered, relevant, and useful, in other words, a gateway to the Isle of Wight's geological heritage. Objects, people and places seamlessly come together in a way that sustains museums such as Dinosaur Isle Museum, Charmouth Heritage Centre, and Lyme Regis Museum, and importantly in a way that collections located far from their places of origin cannot replicate.

So, are there downsides? Hose (2016) noted that geological collections are not always valued even though they are a very significant part of our geoheritage. Finance is inevitably a limiting factor for museums, felt more acutely at smaller regional museums without the backing received by UK nationals (the Natural History Museum, London received £ 41.815 million in 2019/20, nhm.ac.uk/about-us/reports-accounts). Local museums increasingly need to be financially viable to continue. Dinosaur Isle Museum is self-funding, with support from the Isle of Wight Council, generating an income of c.£400,000 per annum, which is however, tied to the fortunes of the tourist economy. The museum therefore must have a strong focus on income generation.

Is there any additional impact from providing information about where to go to look for fossils? It is certainly a means of directing visitors to specific sites, which commercial field trip operators are doing anyway. These tend to be well-used sites such as Compton Bay, and Yaverland on the Isle of Wight, and Church Cliffs and Black Venn at Lyme Regis. Most of these sites can become very

tired-looking towards the end of summer, but that is when high rates of erosion are beneficial.

Looking to the future, museums will depend increasingly on volunteer help, and specimen donations as professional staff deliver income generating schools and public engagement programs. These activities generate wider and greater awareness of geodiversity but also impact on capacity to deliver collections care, collections enhancement and research. So, this impacts staff time, in our context if using freelancers to deliver public engagement, they also need an expert understanding of the beaches and sites. Staff will increasingly need to be not just knowledgeable, but also flexible and willing to work across what are seen as very different and separate roles such as curation or public engagement in larger museums.

It would be wrong to suggest that the high geological interest of a place is the sole factor in determining where geological museums are located, and staying power is so much more than the significance of the heritage. The closure of Dudley Museum and Art Gallery with its important collection of fossils from the Wren's Nest in 2016 is a testament to the vulnerability of significant collections, even those such as those that are located near the fossiliferous sites. The role of fossils in local culture and the local economy in the celebrated fossil localities of Lyme Regis and Whitby must be major factors in the establishment of fossil shops and guided walks. Developing the dinosaur theme has been essential in sustaining the geological collection and museum on the Isle of Wight. Building geological heritage into local economy is probably therefore essential to survival. Whichever way museums survive by being in these special places, they can play a major role in geoconservation, through their displays, interactions with the public and local expertise. They are gateways to sites and knowledge; they are repositories of specimens and sources of inspiration for the public to discover our special geological places and heritage.

Conflicts of Interests

The author is employed at the Museum which is the focus of this study.

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