

# Site Condition Monitoring of invertebrates at Rickle Craig-Scurdie Ness SSSI





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# COMMISSIONED REPORT

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**Commissioned Report No. 640**

## **Site Condition Monitoring of invertebrates at Rickle Craig-Scurdie Ness SSSI**

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## COMMISSIONED REPORT

# Summary

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### Site Condition Monitoring of invertebrates at Rickle Craig-Scurdie Ness SSSI

**Commissioned Report No.: 640**  
**Contractor: K.N.A. Alexander**  
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#### **Background**

Site Condition Monitoring (SCM) is a six year rolling programme of assessment, against quality standards, of the state of the notified features. This document reports on a contract established to carry out SCM at this site during 2013.

#### **Main findings**

- Fifteen species of terrestrial mollusc were found during a morning's exploration, including *Candidula intersepta*, *Trochulus hispidus*, *Cochlicopa lubricella* and a *Vallonia* sp., which collectively characterize the site's unimproved rocky coastal grasslands with lime influences.
- Other invertebrate species characteristic of these conditions were also found, notably the darkling beetle *Isomira murina*, the click beetle *Adrastus pallens*, the plant bug *Pachytomella parallela* and the woodlouse *Porcellio spinicornis*.
- Boddin Point is confirmed as being relatively species-rich in molluscs in comparison with other sections of the SSSI.
- The condition assessment is: favourable-maintained.

Management actions identified are the need to:

- Re-establish rough grazing along the coastal grasslands to control rank grasses and to encourage the development of a more diverse sward which would be expected to enhance the habitat for the mollusc assemblage.
- Phasing clearance of ivy from built structures, as these are the favoured habitat for lesser bulin (*Merdigera obscura*).

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<b>Table of Contents</b>	<b>Page</b>
<b>1. SITE DESCRIPTION</b>	<b>1</b>
<b>2. SUMMARY OF KNOWN INVERTEBRATE INTERESTS</b>	<b>2</b>
<b>3. DESCRIPTION OF METHODOLOGY</b>	<b>4</b>
<b>4. EVALUATION OF SITE CONDITION</b>	<b>5</b>
<b>5. SITE MANAGEMENT RECOMMENDATIONS</b>	<b>7</b>
<b>6. REFERENCES</b>	<b>8</b>
<b>ANNEX A: LIST OF INVERTEBRATES</b>	<b>9</b>
<b>ANNEX B: IMAGES</b>	<b>10</b>

## **Acknowledgements**

Athayde Tonhasca set up the contract and provided a summary compilation of invertebrate data for the site. Sandra Penman (Operations Area Officer, Tayside & Grampian Area) arranged access permission with the land owners. I am also grateful to Adrian Norris, national recorder for land and freshwater molluscs for the Conchological Society, for information from the Society's records.

## 1. SITE DESCRIPTION

Rickle Craig-Scurdie Ness SSSI was designated for its geology, coastal vegetation types, and diverse terrestrial mollusc assemblage. The site also contains important examples of exposures of igneous rocks of Devonian age.

Species-rich grassland vegetation, reflecting the base-rich nature of the underlying rock, occurs locally and notably on and around the old lime kiln on Boddin Point. This rocky stretch of coastline is of particular importance for the range of saltmarsh communities and for examples of unimproved and species-rich maritime cliff grassland vegetation that support a wide range of uncommon plants. There is a rich snail fauna, with over 30 species recorded including the lesser bulin (*Merdigera obscura*) which is relatively scarce and localised in Scotland.

## 2. SUMMARY OF KNOWN INVERTEBRATE INTERESTS

The target feature for Site Condition Monitoring at Rickle Craig-Scurdie Ness SSSI is the mollusc fauna in general and *M. obscura* in particular. The mollusc list was compiled by N. K. Atkinson based on a series of visits between 1979 and 1982. He noted that the main area of interest is around the disused lime kiln and limestone outcrops at Boddin Ness; however, the OS grid reference he used to locate the site was NO716539, which more closely coincides with the old graveyard above Elephant Rock. The full list is presented in Table 1 with comments on broad habitat associations and GB and Scotland status.

Table 1 - Land and freshwater molluscs known from Rickle Craig-Scurdie Ness SSSI (habitat and status information from Kerney, 1999)

Family	Species	Habitat or Status
Agiolimacidae	<i>Deroceras panormitanum</i>	Introduced
	<i>Deroceras reticulatum</i>	Common
Arionidae	<i>Arion ater</i>	Common
	<i>Arion circumscriptus</i>	Common
	<i>Arion distinctus</i>	Common
	<i>Arion intermedius</i>	Common
	<i>Arion silvaticus</i>	Local
Clausilidae	<i>Clausilia bidentata</i>	Common
Cochlicopidae	<i>Cochlicopa lubrica</i>	Common
	<i>Cochlicopa lubricella</i>	Dry grasslands; common
Discidae	<i>Discus rotundatus</i>	Common
Enidae	<i>Merdigera obscura</i>	Base-rich; local in Scotland
Helicidae	<i>Cepaea hortensis</i>	Common
	<i>Cepaea nemoralis</i>	Common
	<i>Cornu aspersum</i>	Common
Hygromiidae	<i>Candidula intersepta</i>	Base-rich grassland; local
	<i>Trochulus hispidus</i>	Base-rich grasslands; common
	<i>Trochulus striolatus</i>	Common
Lauriidae	<i>Lauria cylindracea</i>	Dry places; common
Lymnaeidae	<i>Galba truncatula</i>	Wetlands, common
Oxychilidae	<i>Aegopinella pura</i>	Common
	<i>Aegopinella nitidula</i>	Common
	<i>Oxychilus alliarius</i>	Common
	<i>Oxychilus cellarius</i>	Common
	<i>Oxychilus draparnaudi</i>	Long-established introduction
Pristilomatidae	<i>Vitrea contracta</i>	Base-rich grasslands; common
Succineidae	<i>Oxyloma elegans (pfeifferi)</i>	Wetlands; common
Valloniidae	<i>Acanthinula aculeata</i>	Base-rich; local
	<i>Vallonia pulchella</i>	Base-rich places; rare in Scotland
Vertiginidae	<i>Columella edentula</i>	Base-rich; local
	<i>Vertigo pygmaea</i>	Base-rich grasslands; local
Vitridae	<i>Vitrina pellucida</i>	Common

The most significant features of this list are the nine specialists of base-rich or dry grasslands, which as a result tend to be localised in distribution:

- *Cochlicopa lubricella*
- *Merdigera obscura*
- *Candidula intersecta*
- *Trochulus hispidus*
- *Vitrea contracta*
- *Acanthinula aculeata*
- *Vallonia pulchella*
- *Columella edentula*
- *Vertigo pygmaea*

The rarest of these in Scotland is actually *V. pulchella* rather than *M. obscura*. Three of the species reported represent the only Vice County records (VC 90, Angus): *V. pulchella*, *C. lubricella* and *C. edentula* (A. Norris, pers. comm.).

*Merdigera obscura* lives in all kinds of relatively undisturbed, shady places mainly on base-rich soils: broadleaved woodland, hedgerows, scrubland, at the base of walls, among rocks, etc. (Kerney, 1999). Normally it shelters among ground litter, but in wet weather the young especially will climb vertical surfaces on walls and tree trunks. Within the area of the SSSI, the most favourable situation currently appears to be the ruined chapel in the graveyard above Elephant Rock, where ivy-growth over the mortared stone walls is a particularly attractive feature for the species. This is closer to Atkinson's OS grid reference than Boddin Point.

The smooth (or beautiful) grass snail *V. pulchella* lives in grassy, base-rich places favouring permanently moist or humid situations, although it may occasionally occur in fairly dry grassland (Kerney, 1999). Very few sites are known in Scotland; modern records are only known from eight hectads.

The molluscs list essentially includes species associated with dry and humid conditions, rank and fine grasslands, and open and shaded situations.

### 3. DESCRIPTION OF METHODOLOGY

The methodology adopted for this SCM visit was an exploration of the more readily accessible sections of the coast, with targeted searches of the areas that appeared most suitable for the species concerned. Hand searching and sorting through vegetation litter and other debris are the quickest and easiest way of sampling under the conditions present at the site.

The exploration started at Boddin Point and the vicinity of the old lime kiln, progressed eastwards along the base of the cliffs a short distance, then followed the old cliff-top path to Elephant Rock and the old graveyard. This appears to be the main area sampled by Atkinson 30 years previously. Three other sections were visited: from Seaton Usan westwards to Black Craig, from Mains of Usan northwards towards Scurdie Ness, and Rickle Craig along Dunninald Den. Although outside the SSSI boundary, the ruined chapel in the old graveyard was also searched as the Atkinson list was produced from a grid reference very close to this point rather than the old lime kiln, and ruined stone buildings are a favoured habitat for *M. obscura*.

The date selected for the visit was 24 June 2013. Conditions were bright and sunny; the car thermometer was reading 14°C. The previous weeks had been unusually warm and dry locally, and this was evident in the very dry conditions found.

#### 4. EVALUATION OF SITE CONDITION

The site's grassland was very dry and live molluscs were difficult to find, with slugs especially so. The prolonged dry period had undoubtedly driven the more sensitive molluscs deep into hiding. Fifteen species were found (Table 2).

Table 2 - Sampling results

Family	Species	Condition of sample
Arionidae	<i>Arion ater</i>	Live
Clausilidae	<i>Clausilia bidentata</i>	Live
Cochlicopidae	<i>Cochlicopa lubrica</i>	Old shells
	<i>Cochlicopa lubricella</i>	Old shells
Discidae	<i>Discus rotundatus</i>	Old shells
Helicidae	<i>Cepaea hortensis</i>	Live
	<i>Cepaea nemoralis</i>	Live
	<i>Cornu aspersum</i>	Live
Hygromiidae	<i>Candidula intersepta</i>	Fresh shell
	<i>Trochulus hispidus</i>	Live
	<i>Trochulus striolatus</i>	Live
Lauriidae	<i>Lauria cylindracea</i>	Live
	<i>Oxychilus alliarius</i>	Fresh shells
	<i>Vallonia</i> sp.	Shell fragment only
Vitrinidae	<i>Vitrina pellucida</i>	Fresh shell

These species were found in the rank grasslands around the old lime kiln. Only old shells of *C. lubricella* were encountered, and just a single damaged *Vallonia* shell. As only *V. pulchella* has been found here previously, it is assumed that the shell is of that species.

The failure to find *M. obscura* is not surprising as the species tends to be highly localised and confined to small areas where calcium carbonate is freely available, such as lime mortar used in the construction of old buildings. The old lime kiln has clearly been subject to restoration work as the stonework is free from climbers, and the pointing looks relatively recent. This structure is therefore not in good condition for this snail. In contrast the ruined chapel in the old graveyard has much ivy growth on the inside and appears more suitable for *M. obscura*. The ivy on the outside walls does appear to have been cut back relatively recently. The failure to detect the species cannot be taken as evidence of absence.

The Site Management Statement for the SSSI dated October 2010 cites the mollusc assemblage assessed in August 2010 as 'favourable maintained', although that was based solely on vegetation condition. Allowing for the very dry conditions in June 2013, finding four out of the nine species was assessed as representing favourable, maintained condition.

Land molluscs proved even more difficult to find elsewhere along the coast, and it is clear that other sections of the SSSI may not be as rich. The Seaton to Black Craig section produced only *Cepaea nemoralis* and *Clausilia bidentata*, both common and widespread species. The Mains to Scurdie Ness section is low-lying and the designated site is the rocky foreshore, which obviously lacks terrestrial molluscs. The western cliffs appear inaccessible and could not safely be investigated.

Other invertebrate groups were also noted during the site exploration and these included a few species of note:

- *Pachtomella parallela*, a plant bug (Miridae) associated with tormentil (*Potentilla erecta*) and found in the finer grasslands around the lime kiln and near Black Craig.
- *Isomira murina*, a darkling beetle (Tenebrionidae) associated with unimproved grasslands on base-rich freely-draining soils, and found along the stone wall above the cliff path near Elephant Rock and amongst the *Festuca-Armeria* grasslands at Black Craig.
- *Adrastus pallens*, a click beetle (Elateridae) with very few Scottish records, and found along the stone wall above the cliff path near Elephant Rock.
- *Porcellio spinicornis*, a woodlouse associated with base-rich rocky situations, found in numbers on the cliffs around Boddin Point.

The presence of these species is consistent with a typical mollusc assemblage of unimproved rocky grasslands around the British coast.

## 5. SITE MANAGEMENT RECOMMENDATIONS

The grasslands along the rocky cliffs from Seaton westwards are mostly rank, with some scrub development, and have clearly not been subject to livestock grazing for a long period. It seems highly probable, however, that rough grazing was practised here in the past. Rough grazing has the potential to suppress the ranker plant species and to enhance grasslands by encouraging the growth of finer grasses and small herbaceous plants, which would in turn enhance the site for the mollusc assemblage. It may be difficult, however, to arrange suitable rough grazing within the current agricultural enterprises of the landowners. In the absence of rough grazing the molluscs assemblage is likely to become increasingly confined to the more exposed and more trampled areas, where finer grasslands are able to persist.

The other significant management issue here is maintenance works on the old buildings, as *M. obscura* seems most likely to be associated with ivy-covered mortared walls, either at the lime kilns or the old chapel, or both. In the absence of information to the contrary, it would seem sensible to phase works so that entire structures are not cleared of ivy at the same time.

## **6. REFERENCES**

Kerney, M.P. 1999. *Atlas of the land and freshwater molluscs of Britain and Ireland*. Colchester: Harley Books.

## ANNEX A: LIST OF INVERTEBRATES

<b>Mollusc Species</b>	<b>Other group</b>	<b>Family</b>	<b>Species</b>
<i>Arion ater agg</i>	Butterflies	Lycaenidae	<i>Polyommatus icarus</i>
<i>Candidula intersecta</i>	Coleoptera	Apionidae	<i>Apion ulicis</i>
<i>Cepaea hortensis</i>		Cantharidae	<i>Cantharis cryptica</i>
<i>Cepaea nemoralis</i>			<i>Rhagonycha limbata</i>
<i>Clausilia bidentata</i>		Curculionidae	<i>Ceutorhynchus contractus</i>
<i>Cochlicopa lubrica</i>			<i>Otiorhynchus rugifrons</i>
<i>Cochlicopa lubricella</i>			<i>Otiorhynchus singularis</i>
<i>Cornu aspersa</i>			<i>Otiorhynchus sulcatus</i>
<i>Discus rotundatus</i>		Elateridae	<i>Adrastus pallens</i>
<i>Lauria cylindracea</i>		Tenebrionidae	<i>Isomira murina</i>
<i>Oxychilus alliarius</i>	Dermaptera		<i>Forficula auricularia</i>
<i>Trochulus hispidus</i>	Psocoptera		<i>Graphopsocus cruciatus</i>
<i>Trochulus striolatus</i>	Heteroptera	Miridae	<i>Capsus ater</i>
<i>Vallonia sp</i>			<i>Pachytomella parallela</i>
<i>Vitrina pellucida</i>			<i>Pithanus maerkeli</i>
	Hymenoptera	Formicidae	<i>Formica lemani</i>
			<i>Lasius flavus</i>
			<i>Leptothorax acervorum</i>
	Diplopoda		<i>Ommatoiulus sabulosum</i>
	Oniscidea		<i>Oniscus asellus</i>
			<i>Porcellio scaber</i>
			<i>Porcellio spinicornis</i>

**ANNEX B: IMAGES**

Boddin Point and old lime kiln



Ruined chapel in old graveyard showing extent of ivy



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