

Report under The Conservation of Habitats and  
Species Regulations 2017 (as amended),  
Regulation 9A

**2019-2024**

Conservation status assessment for the species:  
**S1378 - Cladonia subgenus Cladina subgenus  
of lichens**  
*(Cladonia subgenus Cladina)*

**England**



**For further information please contact:**

Natural England, Foss House, Kings Pool, 1-2 Peasholme Green, York, YO1 7PX.  
<https://www.gov.uk/government/organisations/natural-england>

JNCC, Quay House, 2 East Station Road, Fletton Quays, Peterborough, PE2 8YY.  
<https://jncc.gov.uk>

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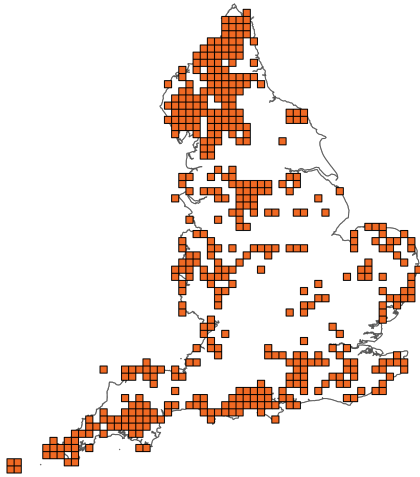
### **Important note - Please read**

- The information in this document represents the England Report under The Conservation of Habitats and Species Regulations 2017 (as amended), Regulation 9A, for the period 2019-2024.
- It is based on supporting information provided by Natural England, which is documented separately.
- The Habitats Regulations reporting 2019-2024 Approach Document provides details on how this supporting information contributed to the UK Report and the fields that were completed for each parameter.
- Maps showing the distribution and range of the species are included.
- Explanatory notes (where provided) are included at the end. These provide additional audit trail information to that included within the assessments. Further underpinning explanatory notes are available in the related country reports.
- Some of the reporting fields have been left blank because either: (i) there was insufficient information to complete the field; (ii) completion of the field was not obligatory; and/or (iii) the field was not relevant to this species (section 12 National Site Network coverage for Annex II species).

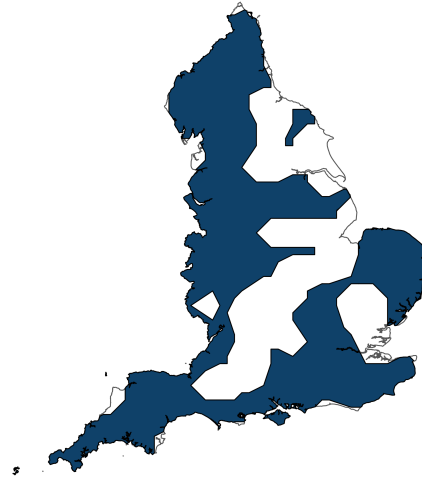
Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the [JNCC website](#).

## Assessment Summary: Cladonia subgenus Cladina subgenus of lichens

### Distribution Map



### Range Map



**Figure 1:** England distribution and range map for S1378 - Cladonia subgenus Cladina subgenus of lichens (*Cladonia* subgenus *Cladina*). Coastline boundary derived from the Oil and Gas Authority's OGA and Lloyd's Register SNS Regional Geological Maps (Open Source). Open Government Licence v3 (OGL). Contains data © 2017 Oil and Gas Authority. The 10km grid square distribution map is based on available species records within the current reporting period.

**Table 1:** Table summarising the conservation status for S1378 - Cladonia subgenus Cladina subgenus of lichens (*Cladonia* subgenus *Cladina*). Overall conservation status for species is based on assessments of range, population, habitat for the species, and future prospects.

### Overall Conservation Status (see section 11)

**Unfavourable-inadequate (U1)**

### Breakdown of Overall Conservation Status

**Range** (see section 5)

**Favourable (FV)**

**Population** (see section 6)

**Unknown (XX)**

**Habitat for the species** (see section 7)

**Unfavourable-inadequate (U1)**

**Future prospects** (see section 10)

**Unfavourable-inadequate (U1)**

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## National Level

### 1. General information

1.1 Country	England
1.2 Species code	S1378
1.3 Species scientific name	<i>Cladonia</i> subgenus <i>Cladina</i>
1.4 Alternative species scientific name	
1.5 Common name	Cladonia subgenus Cladina subgenus of lichens
Annex(es)	V

### 2. Maps

2.1 Sensitive species	No
2.2 Year or period	1990-2024
2.3 Distribution map	Yes
2.4 Distribution map; Method used	Based mainly on extrapolation from a limited amount of data

#### 2.5 Additional information

No additional information

### 3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited?	Yes
3.2 What measures have been taken?	
a) Regulations regarding access to property	No
b) Temporary or local prohibition on the taking of specimens in the wild and exploitation	No
c) Regulation of the periods and/or methods of taking specimens	No
d) Application of hunting and fishing rules which take account of the conservation of such populations	No

e) Establishment of a system of licences for taking specimens or of quotas	No
f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens	No
g) Breeding in captivity of animal species as well as artificial propagation of plant species	No
Other measures	No

**Other measures description**

**3.3: Hunting bag or quantity taken in the wild for Mammals and Acipenseridae (Fish)**

a) Unit                      No unit - not reported

**Table 2:** Quantity taken from the wild during the reporting period (see 3.3a for units). For species with defined hunting seasons, Season 1 refers to 2018/2019 (autumn 2018 to spring 2019), and Season 6 to 2023/2024. For species without hunting seasons, data are reported by calendar year: Year 1 is 2019, and Year 6 is 2024.

	Season/ year 1	Season/ year 2	Season/ year 3	Season/ year 4	Season/ year 5	Season/ year 6
<b>b) Minimum</b>	-	-	-	-	-	-
<b>c) Maximum</b>	-	-	-	-	-	-
<b>d) Unknown</b>	-	-	-	-	-	-

**3.4: Hunting bag or quantity taken in the wild; Method used**

**3.5: Additional information**

No additional information

## Biogeographical Level

### 4. Biogeographical and marine regions

4.1 Biogeographical or marine region where the species occurs ATL

#### 4.2 Sources of information

See section 14 References

### 5. Range

5.1 Surface area (km<sup>2</sup>) 87,009.26

5.2 Short-term trend; Period 1990-2024

5.3 Short-term trend; Direction Stable

5.4 Short-term trend;  
Magnitude

a) Estimated minimum

b) Estimated maximum

c) Pre-defined range

d) Unknown

e) Type of estimate

f) Rate of decrease

5.5 Short-term trend; Method used Based mainly on expert opinion with very limited data

5.6 Long-term trend; Period

5.7 Long-term trend; Direction

5.8 Long-term trend;  
Magnitude

a) Minimum

b) Maximum

c) Rate of decrease

---

**5.9 Long-term trend; Method used**

**5.10 Favourable Reference Range (FRR)**

**a) Area (km<sup>2</sup>)**

---

**b) Pre-defined increment** Current range is less than 2% smaller than the FRR

---

**c) Unknown** No

---

**d) Method used** Expert opinion

---

**e) Quality of information**

**5.11 Change and reason for change in surface area of range**

**a) Change** No

---

**b) Genuine change**

---

**c) Improved knowledge or more accurate data**

---

**d) Different method**

---

**e) No information**

---

**f) Other reason**

---

**g) Main reason**

**5.12 Additional information**

No additional information

**6. Population**

**6.1 Year or period**

**6.2 Population size (in reporting unit)**

**a) Unit**

---

**b) Minimum**

---

**c) Maximum**

---

**d) Best single value**

---

**6.3 Type of estimate**

---

**6.4 Quality of extrapolation to reporting unit**

---

**6.5 Additional population size (using population unit other than reporting unit)**

---

**a) Unit**

---

**b) Minimum**

---

**c) Maximum**

---

**d) Best single value**

---

**e) Type of estimate**

---

**6.6 Population size; Method used**                      Insufficient or no data available

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**6.7 Short-term trend; Period**                      1990-2024

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**6.8 Short-term trend; Direction**                      Uncertain

---

**6.9 Short-term trend; Magnitude**

---

**a) Estimated minimum**

---

**b) Estimated maximum**

---

**c) Pre-defined range**

---

**d) Unknown**    Yes

---

**e) Type of estimate**

---

**f) Rate of decrease**

---

**6.10 Short-term trend; Method used**                      Insufficient or no data available

---

**6.11 Long-term trend; Period**

---

**6.12 Long-term trend; Direction**

---

**6.13 Long-term trend; Magnitude**

---

a) Minimum

---

b) Maximum

---

c) Confidence interval

---

d) Rate of decrease

---

**6.14 Long-term trend; Method used**

**6.15 Favourable Reference Population (FRP)**

ai) Population size

---

aii) Unit

---

b) Pre-defined increment      Current population is less than 5% smaller than the FRP

---

c) Unknown      No

---

d) Method used      Expert opinion

---

e) Quality of information

**6.16 Change and reason for change in population size**

a) Change      No

---

b) Genuine change

---

c) Improved knowledge or more accurate data

---

d) Different method

---

e) No information

---

f) Other reason

---

g) Main reason

**6.17 Additional information**

No additional information

**6.18 Age structure, mortality and reproduction deviation**      Unknown

## 7. Habitat for the species

### 7.1 Sufficiency of area and quality of occupied habitat (for long-term survival)

a) Is area of occupied habitat sufficient? Unknown

b) Is quality of occupied habitat sufficient? No

c) If No or Unknown, is there a sufficiently large area of unoccupied habitat of suitable quality? No

### 7.2 Sufficiency of area and quality of occupied habitat; Method used

a) Sufficiency of area of occupied habitat; Method used Based mainly on expert opinion with very limited data

b) Sufficiency of quality of occupied habitat; Method used Based mainly on expert opinion with very limited data

7.3 Short-term trend; Period 2013-2024

7.4 Short-term trend; Direction Decreasing

7.5 Short-term trend; Method used Based mainly on expert opinion with very limited data

7.6 Long-term trend; Period

7.7 Long-term trend; Direction

7.8 Long-term trend; Method used

### 7.9 Additional information

Nitrogen deposition is causing substantial change to heathland habitat leading to denser vegetation which overshadows the lichen, and increased competition from bryophytes. The critical threshold for this group is 3ug-m<sup>3</sup>, but the entire heathland SAC network is currently above the threshold of 5ug-m<sup>3</sup>.

## 8. Main pressures

### 8.1 Characterisation of pressures

**Table 3:** Pressures affecting the species, including timing and importance/impact ranking. Pressures are defined as factors acting currently and/or during the reporting period (2019–2024). Rankings are: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Pressure	Timing	Ranking
PA05: Abandonment of management/use of grasslands and other agricultural and agroforestry systems (e.g. cessation of grazing, mowing or traditional farming)	Ongoing and likely to be in the future	Medium (M)
PA08: Extensive grazing or undergrazing by livestock	Ongoing and likely to be in the future	Medium (M)
PA13: Application of natural or synthetic fertilisers on agricultural land	Ongoing and likely to be in the future	High (H)
PA18: Agricultural activities generating air pollution	Ongoing and likely to be in the future	High (H)
PC01: Extraction of minerals (e.g. rock, metal ores, gravel, sand, shell)	Ongoing and likely to be in the future	Medium (M)
PC05: Peat extraction	In the past but now suspended due to measures	Medium (M)
PB01: Conversion to forest from other land uses, or afforestation (excluding drainage)	Ongoing and likely to be in the future	Medium (M)
PE06: Land, water and air transport activities generating air pollution	Ongoing and likely to be in the future	High (H)
PM03: Natural wild fires	Ongoing and likely to be in the future	Medium (M)
PA07: Intensive grazing or overgrazing by livestock	Ongoing and likely to be in the future	Medium (M)
PK04: Atmospheric N-deposition	Ongoing and likely to be in the future	High (H)
PK03: Mixed source air pollution, air-borne pollutants	Ongoing and likely to be in the future	High (H)

## 8.2 Sources of information

See section 14 References

## 8.3 Additional information

PA05: Cladonia (Cladina) species are sensitive to grazing management. These species generally require a light open vegetation to persist. In heathland, light grazing is needed to reduce pressure from vascular plants, notably heather. More sensitive Cladonia species can be lost readily to shade caused by tall vegetation, while the shade tolerant species *Cladonia portontosa* may persist for some time. Cyclic management of vegetation e.g. through periods of intense grazing, burning, or mowing can help these species to persist. Current trends towards rewilding where management is suspended or greatly reduced, and the general reduction in grazing pressure could be damaging to Cladina spp. Similarly, intensive grazing can also lead to the loss of some Cladina species, particularly where bare ground is created. Though it is noted that heaths grazed very short can support diverse Cladonia community with abundant *Cladonia portonosa*.

PA08: Cladonia (Cladina) species are sensitive to grazing management. These species generally require a light open vegetation to persist. In heathland, light grazing is needed to reduce pressure from vascular plants, notably heather. More sensitive Cladonia species can be lost readily to shade caused by tall vegetation, while the shade tolerant species *Cladonia portontosa* may persist for some time. Cyclic management of vegetation e.g. through periods of intense grazing, burning, or mowing can help these species to persist. Current trends towards rewilding where management is suspended or greatly reduced, and the general reduction in grazing pressure could be damaging to Cladina spp. Similarly, intensive grazing can also lead to the loss of some Cladina species, particularly where bare ground is created. Though it is noted that heaths grazed very short can support diverse Cladonia community with abundant *Cladonia portonosa*.

PA13: Cladina lichen are highly vulnerable to N deposition from various sources including transport, industry and agriculture (livestock and arable). Wirth 2010 gave the lowest possible Ellenberg values for N tolerance to the Cladina species. Some evidence suggests that *Cladonia portontosa* may be more resilient to N deposition than previously thought, so a precautionary assessment is given here.

PA18: Cladina lichen are highly vulnerable to N deposition from various sources including transport, industry and agriculture (livestock and arable). Wirth 2010 gave the lowest possible Ellenberg values for N tolerance to the Cladina species. Some evidence

suggests that *Cladonia portontosa* may be more resilient to N deposition than previously thought, so a precautionary assessment is given here.

PC01: Mineral extraction can lead to localised loss of *Cladina* species e.g. for sand, kaolinite etc. Heathland restoration on previously opencast mining can be exceptionally difficult to reinstate meaning that even with restorative efforts *Cladina* may take significant amounts of time to recolonise extractin sites.

PC05: *Cladina* species are frequently found above peat soils. A ban on peat extraction is in place with no new licences to be granted after the current liceneces end in 2042.

PB01: *Cladina* of lowland heath may be largely protected from afforestation by virtue of the habitat beng protected. In the upands, where they are part of moorland communities, extensive afforestation is planned, for example, the planned afforetation of Skiddaw in the Lake District.

PE06: *Cladina* lichen are highly vulnerable to N deposition from various sources including transport, industry and agriculture (livestock and arable). Wirth 2010 gave the lowest possible Ellenberg values for N tolerance to the *Cladina* species. Some evidence suggests that *Cladonia portontosa* may be more resilient to N deposition than previously thought, so a precautionary assessment is given here.

PM03: Wildfires are expected to increase in frequency and duration in the UK. Heathland and moorland habitats are especially vulnerable. *Cladina* show some tolerance to low intensity, managed burns and these can be benfifial to the group and other Clodoinia species by removing the competative vascular plants. However the *Cladina* are not likley to survive high intensity , very hot wildfires and where the burns are extensive, there may be insufficient material left to efficiently recolonise as happens in controlled burns.

PA07: *Cladonia* (*Cladina*) species are sensitive to grazing management. These species generally require a light open vegetation to persist. In heathland, light grazing is needed to reduce pressure from vascular plants, notably heather. More sensitive *Cladonia* species can be lost readily to shade caused by tall vegetation, while the shade tolerant species *Cladonia portontosa* may persist for some time. Cyclic management of vegetation e.g. though periods of intense grazing, burning, or mowing can help these species to persist. Current trends towards rewilding where mangement is suspended or greatly reduced, and the general reduction in grazing pressure could be damaging to *Cladina* spp. Similarly, intensive grazing can also lead to the loss of some *Cladina* species, particularly where bare ground is created. Though it is noted that heaths grazed very short can be support diverse *Cladonia* community with abundant *Cladonia portonosa*.

PK04: Cladina lichen are highly vulnerable to N deposition from various sources including transport, industry and agriculture (livestock and arable). Wirth 2010 gave the lowest possible Ellenberg values for N tolerance to the Cladina species. Some evidence suggests that Cladonia portontosa may be more resilient to N deposition than previously thought, so a precautionary assessment is given here.

PK03: Cladina lichen are highly vulnerable to N deposition from various sources including transport, industry and agriculture (livestock and arable). Wirth 2010 gave the lowest possible Ellenberg values for N tolerance to the Cladina species. Some evidence suggests that Cladonia portontosa may be more resilient to N deposition than previously thought, so a precautionary assessment is given here.

## 9. Conservation measures

### 9.1: Status of measures

a) Are measures needed? No

b) Indicate the status of measures

### 9.2 Main purpose of the measures taken

### 9.3 Location of the measures taken

### 9.4 Response to measures

### 9.5 List of main conservation measures

**Table 4:** Key conservation measures addressing current pressures and/or anticipated threats during the next two reporting periods (2025–2036). Measures are ranked by importance/impact: High (direct/immediate influence and/or large spatial extent) and Medium (moderate direct/immediate influence, mainly indirect and/or regional extent).

Conservation measure	Ranking
No conservation measures	

### 9.6 Additional information

Conservation measures are only required to be reported for Annex II species.

This group of species is not on Annex II.

## 10. Future prospects

### 10.1a Future trends of parameters

ai) Range	Overall stable
bi) Population	Overall stable
ci) Habitat for the species	Negative - slight/moderate deterioration

### 10.1b Future prospects of parameters

aii) Range	Poor
bii) Population	Poor
cii) Habitat for the species	Poor

### 10.2 Additional information

Range and population currently appears to be stable, but habitat is deteriorating largely due to nitrogen deposition affecting heathland sites. Nitrogen deposition is not expected to drastically reduce below critical thresholds for this group which is estimated at  $3\mu\text{g m}^{-3}$ . Future prospects are therefore considered to be poor as continued N is expected to reduce range and population and the continued deterioration of habitat.

## 11. Conclusions

11.1 Range	Favourable (FV)
11.2 Population	Unknown (XX)
11.3 Habitat for the species	Unfavourable-inadequate (U1)
11.4 Future prospects	Unfavourable-inadequate (U1)
11.5 Overall assessment of Conservation Status	Unfavourable-inadequate (U1)
11.6 Overall trend in Conservation Status	Unknown
11.7 Change and reason for change in conservation status	

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

### **11.7 Change and reason for change in conservation status trend**

This field is not reported as the period 2019-2024 marks the first instance in which conservation status has been assessed at the national level, meaning no comparisons to previous reports can be drawn.

### **11.8 Additional information**

No additional information

## **12. UK National Site Network (pSCIs, SCIs, SACs) coverage for Annex II species**

### **12.1 Population size inside the pSCIs, SCIs and SACs network**

a) Unit

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b) Minimum

---

c) Maximum

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d) Best single value

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### **12.2 Type of estimate**

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**12.3 Population size inside the network; Method used**

**12.4 Short-term trend of population size within the network; Direction**

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**12.5 Short-term trend of population size within the network; Method used**

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**12.6 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Direction**

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**12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used**

**12.8 Additional information**

No additional information

## **13. Complementary information**

**13.1 Justification of percentage thresholds for trends**

No justification information

**13.2 Trans-boundary assessment**

No trans-boundary assessment information

**13.2 Other relevant information**

No other relevant information

## 14. References

### Biogeographical and marine regions

#### 4.2 Sources of information

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## **Main pressures**

### **8.2 Sources of information**

No sources of information

## 15. Explanatory Notes

Field label

Note

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No explanatory notes