

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

**2019-2024**

Conservation status assessment for the species:

**S1092 - White-clawed crayfish**

***(Austropotamobius pallipes)***

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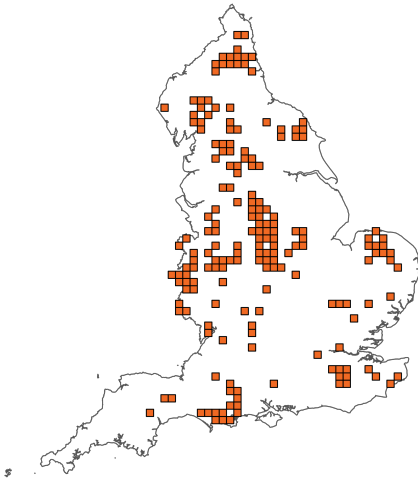
### **Important note - Please read**

- 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).

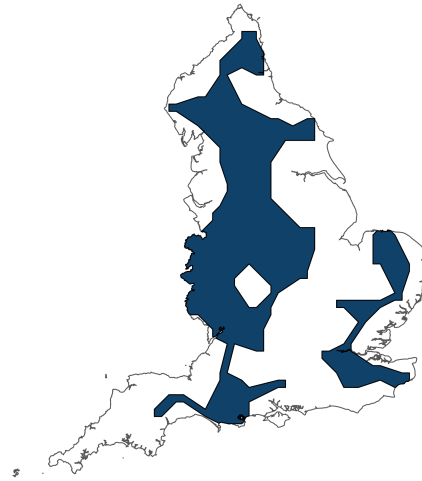
Further details on the approach to the Habitats Regulations Reporting 2019-2024 are available on the [JNCC website](#).

## Assessment Summary: White-clawed crayfish

### Distribution Map



### Range Map



**Figure 1:** England distribution and range map for S1092 - White-clawed crayfish (*Austropotamobius pallipes*). 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 S1092 - White-clawed crayfish (*Austropotamobius pallipes*). 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-bad (U2)**

### Breakdown of Overall Conservation Status

<b>Range</b> (see section 5)	<b>Unfavourable-bad (U2)</b>
<b>Population</b> (see section 6)	<b>Unfavourable-bad (U2)</b>
<b>Habitat for the species</b> (see section 7)	<b>Unfavourable-inadequate (U1)</b>
<b>Future prospects</b> (see section 10)	<b>Unfavourable-bad (U2)</b>

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## National Level

### 1. General information

1.1 Country	England
1.2 Species code	S1092
1.3 Species scientific name	<i>Austropotamobius pallipes</i>
1.4 Alternative species scientific name	
1.5 Common name	White-clawed crayfish
Annex(es)	II, V

### 2. Maps

2.1 Sensitive species	No
2.2 Year or period	1994-2024
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

The mapped data are likely to be an overestimate of presence, or of sustainable populations, due to the rapid change in distribution of invasive, non-native crayfish species and in the lethal pathogen Crayfish Plague. Some population expansion due to the widespread creation of isolated refuges (ARK sites).

### 3. Information related to Annex V Species

3.1 Is the species taken in the wild / exploited? No

#### 3.2 What measures have been taken?

a) Regulations regarding access to property

b) Temporary or local prohibition on the taking of specimens in the wild and exploitation

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**c) Regulation of the periods and/or methods of taking specimens**

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**d) Application of hunting and fishing rules which take account of the conservation of such populations**

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**e) Establishment of a system of licences for taking specimens or of quotas**

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**f) Regulation of the purchase, sale, offering for sale, keeping for sale, or transport for sale of specimens**

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**g) Breeding in captivity of animal species as well as artificial propagation of plant species**

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**Other measures**

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**Other measures description**

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

**a) Unit**

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**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**

White-clawed Crayfish is listed on Schedule 5 of the Wildlife and Countryside Act (1981) and protected under Section 9 with respect to 9.1 - Taking only; 9.2 - Possessing, alive or dead; and 9.5 - Selling. Therefore it is generally not exploited, although this may occur illegally (for which there are no data).

## 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>) 52,810

#### 5.2 Short-term trend; Period

5.3 Short-term trend; Direction Unknown

#### 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 extrapolation from a limited amount of 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

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

**5.10 Favourable Reference Range (FRR)**

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

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b) Pre-defined increment                      Current range is between 51% and 100% smaller than the FRR

---

c) Unknown    No

---

d) Method used    Reference-based approach

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e) Quality of information    moderate

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

a) Change    Yes

---

b) Genuine change    Yes

---

c) Improved knowledge or more accurate data

---

d) Different method

---

e) No information    Yes

---

f) Other reason

---

g) Main reason    Unknown

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**5.12 Additional information**

An estimate for short-term range trend is unavailable because no area value was reported in 2019 (despite being mapped). It is therefore recorded as Unknown, though from visual comparison of the maps, the range area had declined.

Although the range of White-clawed Crayfish (WCC) has not been systematically recorded since 2018, it is estimated with high confidence that the range has continued to decline due to the combined impacts of Signal Crayfish expanding its range and Crayfish Plague affecting new parts of the WCC's range (both of which are well

documented at least anecdotally). The range was estimated to have contracted 19.8% over 2012-18 (23 out of 116 sub-catchments lost; Heaver 2020), equating to -3.3% per year, and it is assumed this rate will have been maintained 2019-24. Heaver D (2020) Definition of Favourable Conservation Status for White-clawed crayfish *Austropotamobius pallipes*. Defining Favourable Conservation Status Project, Natural England. 19pp.

## 6. Population

**6.1 Year or period** 2010-2024

### 6.2 Population size (in reporting unit)

**a) Unit** number of map 1x1 km grid cells

**b) Minimum**

**c) Maximum**

**d) Best single value** 427

**6.3 Type of estimate** Best estimate

### 6.4 Quality of extrapolation to reporting unit

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

**a) Unit** number of map 10x10 km grid cells

**b) Minimum**

**c) Maximum**

**d) Best single value** 185

**e) Type of estimate** Best estimate

**6.6 Population size; Method used** Based mainly on expert opinion with very limited data

**6.7 Short-term trend; Period** 2010-2024

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

**6.9 Short-term trend; Magnitude**

a) Estimated minimum

b) Estimated maximum

c) Pre-defined range Decreasing 13 - 25%

d) Unknown No

e) Type of estimate Best estimate

f) Rate of decrease Decreasing >1% (more than one percent) per year on average

**6.10 Short-term trend; Method used** Based mainly on extrapolation from a limited amount of data

**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 between 51% and 100% smaller than the FRP

c) Unknown No

d) Method used Reference-based approach

e) Quality of information low

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

<b>a) Change</b>	Yes
<b>b) Genuine change</b>	Yes
<b>c) Improved knowledge or more accurate data</b>	No
<b>d) Different method</b>	
<b>e) No information</b>	
<b>f) Other reason</b>	
<b>g) Main reason</b>	Genuine change

### 6.17 Additional information

This note is critical to understanding the situation around White-clawed crayfish evidence for the period 2019-24. There has been no systematic, country-wide monitoring of crayfish populations in England since 2018.

Current mapping for 2010-24 from the NBN shows 403 monads (1x1 km), or 185 hectads (10x10 km). These mapped estimates have low confidence, as it is not possible to tell which cells are still occupied by White-clawed Crayfish, if they haven't been surveyed recently. Losses may have been slightly balanced by the creation of new refuge populations, in 'Ark sites', but these have not been quantified or mapped.

Estimates for 2010-24 show declines compared to 2005-18, for 2019 reporting: monads -32.1% (629 to 427) and hectads -22.6% (239 to 185).

Heaver (2020) estimated there had been a 19.8% decline in occupancy of river sub-catchments from 2013-18 (by 23, from 116 to 93). Here, sub-catchments are not reported against optional, preferred values, using 10x10 km cells instead.

The species is suffering ongoing decline due to competition from non-native crayfish and a lethal, non-native disease: crayfish plague. Assuming a similar rate of decline for the period 2019-24, then the population (using sub-catchment occupancy as an index) is estimated to have declined by c.3% per year (16 sub-catchments), to 77 sub-catchments (equivalent to a decline of 34% over 2013-24).

The number of NBN records for England in 2013-18 is 909, but only 149 for 2019-2024 (with no records in 2022 or 2024). This is most likely due to inadequate recording, rather than genuine change in range or population, as there have been no systematic surveys or data gathering exercises.

**6.18 Age structure, mortality and reproduction deviation** Yes, strongly deviating from normal

## 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? Yes

b) Is quality of occupied habitat sufficient? Yes

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

### 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

No additional information

## 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
PA13: Application of natural or synthetic fertilisers on agricultural land	Ongoing and likely to be in the future	Medium (M)
PA14: Use of plant protection chemicals in agriculture	Ongoing and likely to be in the future	Medium (M)
PA16: Introduction and spread of new organisms (including GMOs)	Ongoing and likely to be in the future	Medium (M)
PA22: Drainage for use as agricultural land	Ongoing and likely to be in the future	Medium (M)
PA23: Physical alteration of water bodies (including dams, channels, etc.)	Ongoing and likely to be in the future	Medium (M)
PB17: Use of plant protection chemicals in forestry	Ongoing and likely to be in the future	Medium (M)
PG07: Freshwater fish and shellfish harvesting (recreational)	Ongoing and likely to be in the future	Medium (M)
PI01: Invasive alien species of Union concern	Ongoing and likely to be in the future	High (H)
PI04: Plant and animal diseases, pathogens and pests	Ongoing and likely to be in the future	High (H)
PL04: Development and operation of dams (mixed or unknown drivers)	Ongoing and likely to be in the future	Medium (M)
PL05: Modification of hydrological flow (mixed or unknown drivers)	Ongoing and likely to be in the future	Medium (M)

## 8.2 Sources of information

See section 14 References

## 8.3 Additional information

No additional information

## 9. Conservation measures

### 9.1: Status of measures

a) Are measures needed?	Yes
b) Indicate the status of measures	Measures identified and taken
9.2 Main purpose of the measures taken	Maintain the current range, population and/or habitat for the species
9.3 Location of the measures taken	Both inside and outside National Site Network
9.4 Response to measures	Long-term results (after 2036)

### 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
MA09: Manage the use of natural and synthetic fertilisers as well as chemicals in agricultural for plant and animal production	Medium (M)
MB09: Manage the use of natural and synthetic fertilisers, liming and pest control in forestry	Medium (M)
MI01: Early detection and rapid eradication of invasive alien species of Union concern	High (H)
MI02: Management, control or eradication of established invasive alien species of Union concern	High (H)
MI06: Controlling and eradicating plant and animal diseases, pathogens and pests	High (H)
MS03: Restoration of habitat of species from the directives	Medium (M)
MS01: Reinforce populations of species from the directives	Medium (M)

### 9.6 Additional information

A national monitoring scheme is urgently needed to systematically record the presence and absence of White-clawed Crayfish, non-native crayfish species and the crayfish plague at the sub-catchment scale. It should include records of where conservation measures are implemented, such as Ark site creation. The monitoring scheme needs to be resourced sustainably, not just as a one-off exercise (as for 2019 reporting).

Anecdotally, it is known that White-clawed Crayfish populations are being lost from sub-catchments in England due to the spread of non-native crayfish and crayfish plague. A new source of mortality was discovered in Northumberland in 2024, as yet unidentified but suspected to be a previously unknown pathogen. Refuge populations are being created at isolated 'Ark sites'. The impact of recent declines in river quality is unknown. The impact of restoring natural function to sub-catchments where the species is present, is also unknown, though predicted to improve habitat quality.

The area and quality of habitat is recorded here as sufficient for long term survival, based on its current status. However, in the long term it is possible that spread by non-native crayfish and disease will render it insufficient. This will depend on the development of new conservation measures: long-term research, to develop disease resistance in the species and / or to adequately control non-native crayfish, is needed for the long-term survival of the population.

## 10. Future prospects

### 10.1a Future trends of parameters

<b>ai) Range</b>	Very Negative - decreasing >1% (more than one percent) per year on average
<b>bi) Population</b>	Very Negative - decreasing >1% (more than one percent) per year on average
<b>ci) Habitat for the species</b>	Very negative - important deterioration

### 10.1b Future prospects of parameters

<b>aii) Range</b>	Bad
<b>bii) Population</b>	Bad
<b>cii) Habitat for the species</b>	Bad

### 10.2 Additional information

While physical condition across the entire habitat is not known with any confidence, the presence of non-native crayfish and / or crayfish plague (with inadequate measures for preventing spread) means that overall habitat quality is declining.

## 11. Conclusions

<b>11.1 Range</b>	Unfavourable-bad (U2)
<b>11.2 Population</b>	Unfavourable-bad (U2)
<b>11.3 Habitat for the species</b>	Unfavourable-inadequate (U1)
<b>11.4 Future prospects</b>	Unfavourable-bad (U2)
<b>11.5 Overall assessment of Conservation Status</b>	Unfavourable-bad (U2)
<b>11.6 Overall trend in Conservation Status</b>	Deteriorating

### 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

White-clawed Crayfish was assessed as overall - Unfavourable Bad (Tab. 1A), with Range - Unfavourable-Bad (Tab. 1A, 2A) as short-term (2010-24) >10% below FRR (but uncertainties in range estimate noted, with 2019 value missing).

Population - Unfavourable-Bad (Tab. 1A, 2B) as short-term (2010-24) >25% below FRP (for 1x1 km<sup>2</sup> value, with low confidence) and short-term trend declining.

Habitat (Tab. 1A) - Unfavourable - inadequate as occupied area and quality judged sufficient for English population persistence, but trend decreasing (Tab. C1).

Future Prospects conclusion (Tab. D2)- Unfavourable Bad - as Range, Population & Habitat future prospects all Bad (Tab. D1: future trend decreasing x current status Bad = Bad).

## 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 number of map 1x1 km grid cells

b) Minimum

c) Maximum

d) Best single value

### 12.2 Type of estimate

12.3 Population size inside the network; Method used Insufficient or no data available

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

12.5 Short-term trend of population size within the network; Method used Insufficient or no data available

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

12.7 Short-term trend of habitat for the species inside the pSCIs, SCIs and SACs network; Method used Insufficient or no data available

### 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

JNCC (2019) European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora

(92/43/EEC) Fourth Report by the United Kingdom under Article 17 on the implementation of the Directive from January 2013 to December 2018 Conservation status assessment for the species: S1092 - White-clawed crayfish (*Austropotamobius pallipes*).

Heaver D (2020) Definition of Favourable Conservation Status for White-clawed crayfish *Austropotamobius pallipes*. Defining Favourable Conservation Status Project, Natural England. 19pp.

### Main pressures

#### 8.2 Sources of information

No sources of information

## 15. Explanatory Notes

Field label

Note

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No explanatory notes