



MarinTrust Standard V2

By-product Fishery Assessment *European squid (Loligo vulgaris), in FAO 27 Northeast Atlantic, ICES Divisions 4.a-c, 6.a, 7.a-b,d-h,j)*

MarinTrust Programme

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Table 1 Application details and summary of the assessment outcome

| | | |
|---|-----------------------------------|---|
| Fishery Under Assessment | Species: | European squid (<i>Loligo vulgaris</i>) |
| | Geographical area: | FAO 27 northeast Atlantic, ICES divisions 4.a-c, 6.a, 7.a-b,d-h,j) |
| | Country of origin of the product: | France |
| | Stock: | European squid (<i>Loligo vulgaris</i>) in FAO 27 northeast Atlantic, ICES divisions 4.a-c, 6.a, 7.a-b,d-h,j) |
| Date | 28 July 2023 | |
| Report Code | FRA19 | |
| Assessor | Ana Elisa Almeida Ayres | |
| Country of origin of the product - PASS | France | |
| Country of origin of the product - FAIL | N/A | |

| Application details and summary of the assessment outcome | | | |
|---|-----------------|-----------------|-----------------------------------|
| Company Name(s): Bioceval SAS - Concarneau | | | |
| Country: France | | | |
| Email address: | | Applicant Code: | |
| Certification Body Details | | | |
| Name of Certification Body: | | NSF | |
| Assessor | Peer Reviewer | Assessment Days | Initial/Surveillance/ Re-approval |
| Ana Elisa Almeida Ayres | Matthew Jew | 0.5 | Surveillance 1 |
| Assessment Period | Up to July 2023 | | |

| Scope Details | |
|---------------------------------------|--|
| Main Species | European squid (<i>Loligo vulgaris</i>) |
| Stock | European squid (<i>Loligo vulgaris</i>) in FAO 27 in ICES divisions 4.a-c, 6.a, 7.a-b,d-h,j) |
| Fishery Location | FAO 27 northeast Atlantic - ICES divisions 4.a-c, 6.a, 7.a-b,d-h,j) |
| Management Authority (Country/ State) | European Union (Common Fisheries Policy) |
| Gear Type(s) | Demersal trawls, beam trawls |
| Outcome of Assessment | |
| Peer Review Evaluation | Agree with assessor's recommendation |
| Recommendation | APPROVED |

Table 2. Assessment Determination

| Assessment Determination |
|--|
| <p>If any species is categorised as Endangered or Critically Endangered on Union for Conservation of Nature's Red List of Threatened Species - IUCN's Red List, or if it appears in the Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES appendices, it cannot be approved for use as Marin Trust raw material. European squid (<i>Loligo vulgaris</i>) is not categorised as Endangered or Critically Endangered on IUCN's Red List and does not appear in CITES appendices; therefore, the species is eligible for approval for use as Marin Trust by-product raw material.</p> <p>European squid is a largely unmanaged species with undetermined stock structure. Therefore, for the purpose of the assessment, the squid stock assessed is defined by FAO - Northeast Atlantic - 27 ICES Divisions 4a-c, 6a, 7a-b, d-h, j.</p> <p>Squids are not subject to species-specific management regimes that are required to be assessed under Category C (e.g. No established limit reference points). Therefore, all stocks occurring in relevant subareas/divisions are assessed as Category D, with the use of the Productivity-Susceptibility Analysis – PSA.</p> <p>European squid (<i>Loligo vulgaris</i>) was awarded a Productivity score of 1.57 and a Susceptibility score of 3, leading to a “Pass” rating against Table D3.</p> <p>Therefore, European squid (<i>Loligo vulgaris</i>) in FAO 27 - Northeast Atlantic - ICES Divisions 4.a-c, 6.a, 7.a-b,d-h,j is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v2.3 by-products standard.</p> |
| Fishery Assessment Peer Review Comments |
| <p>The assessor correctly classified European squid (<i>Loligo vulgaris</i>) in ICES Divisions 4.a-c, 6.a, 7.a-b,d-h,j as Category D, the stock is not assessed using a formal assessment process and thus reference points are not defined.</p> <p>The assessor correctly assigned values and scores on table D1. The given average attribute scores result in a passing score on Table D3.</p> <p>European squid (<i>Loligo vulgaris</i>) in ICES Divisions 4.a-c, 6.a, 7.a-b,d-h,j passes Category D and the PSA and therefore should be approved under the MarinTrust Standard v.2.3</p> |
| Notes for On-site Auditor |
| N/A |

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as a MarinTrust raw material.

IUCN Red list Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

| Common name | Latin name | Stock | Management | Category | IUCN Red List Category ¹ | CITES Appendix 1 ² |
|----------------|------------------------|---|--|----------|-------------------------------------|-------------------------------|
| European squid | <i>Loligo vulgaris</i> | European squid (<i>Loligo vulgaris</i>) in FAO 27 in ICES divisions 4.a-c, 6.a, 7.a-b,d-h,j | European Union (Common Fisheries Policy) | D | DD | No |

¹ <https://www.iucnredlist.org/>

² <https://cites.org/eng/app/appendices.php>

CATEGORY D SPECIES

Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

| | | | |
|---|--|--|--------------|
| D1 | Species Name | European squid (<i>Loligo vulgaris</i>) | |
| | Productivity Attribute | Value | Score |
| | Average age at maturity (years) | <1 | 1 |
| | Average maximum age (years) | 1.5-3.5 | 1 |
| | Fecundity (eggs/spawning) | 1,441-14,886 | 2 |
| | Average maximum size (cm) | 64 | 1 |
| | Average size at maturity (cm) | 16.9 | 1 |
| | Reproductive strategy | Demersal Egg Layer | 2 |
| | Mean trophic level | >3.25 | 3 |
| | Average Productivity Score | | 1,57 |
| | Susceptibility Attribute | Value | Score |
| | Availability (area overlap) | >30% | 3 |
| | Encounterability (the position of the stock/species within the water column relative to the fishing gear) | Targeted | 3 |
| | Selectivity of gear type | High Capture Rate | 3 |
| | Post-capture mortality | Retained | 3 |
| | Average Susceptibility Score | | 3 |
| | PSA Risk Rating (From Table D3) | | Pass |
| | Compliance rating | | Pass |
| | Further justification for susceptibility scoring (where relevant) | | |
| | <i>For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision</i> | | |
| | According to Froese and Pauly (2023), the species is found in Eastern Atlantic and the Mediterranean: from North Sea and British Isles to southwest Africa and the Mediterranean. Its distribution depth is 0 - 500 m, usually 20 - 250 m. | | |
| Species feeds on fish and other carnivorous prey. Trophic level was assumed to be greater than 3.25. | | | |
| At least 30% of the geographic range of the species occurs in the area under assessment. The stock is targeted catch, thus it has high encounterability, high capture/retention, and high post-capture mortality. | | | |

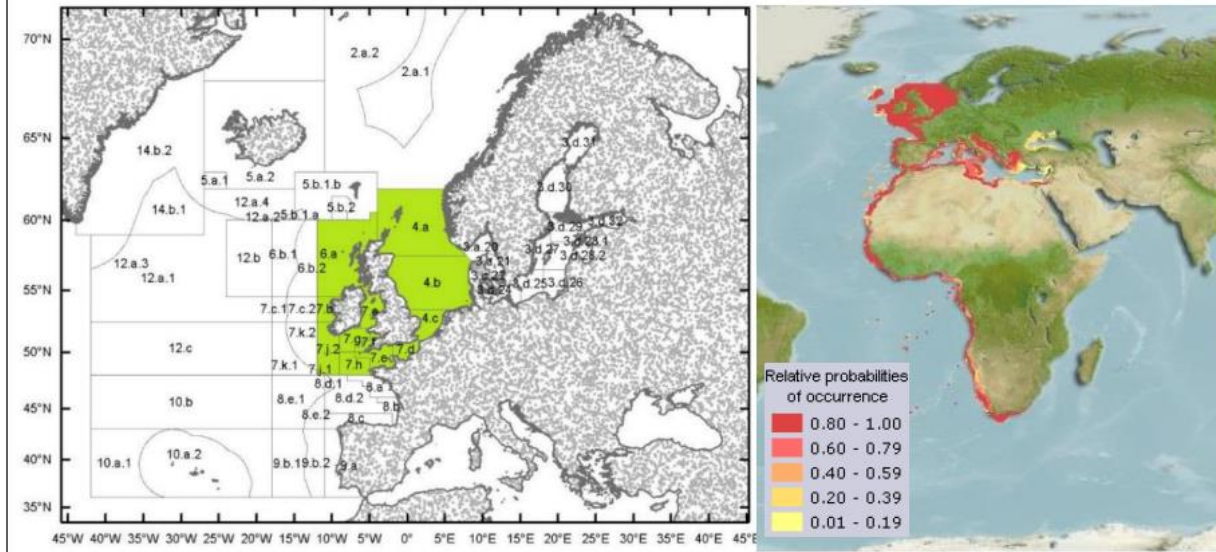


Figure 1. Range of fishery under assessment (left) and geographic range of species (right) [AquaMaps, 2019]

References

AquaMaps. 2019. Computer generated distribution maps for *Loligo vulgaris* (European squid), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario.
https://www.aquamaps.org/receive.php?type_of_map=regular&map=cached

Coelho ML, Quintela J, Bettencourt V, Olavo G, Villa H. 1994. Population structure, maturation patterns and fecundity of the squid *Loligo vulgaris* from southern Portugal. *Fisheries Research* 21(1-2):87-102.
<https://www.sciencedirect.com/science/article/abs/pii/0165783694900973>

Froese, R. and D. Pauly. Editors. 2023. FishBase. World Wide Web electronic publication.
<https://www.sealifebase.ca/summary/Loligo-vulgaris>

Jereb et al., 2015: Jereb, P., Allcock, A.L., Lefkaditou, E., Piatkowski, U., Hastie, L.C., and Pierce, G.J. (Eds.) 2015. Cephalopod biology and fisheries in Europe: II. Species Accounts. ICES Cooperative Research Report No. 325. 360 pp.
[http://www.ices.dk/sites/pub/Publication%20Reports/Cooperative%20Research%20Report%20\(CRR\)/crr325/CRR%20325.pdf](http://www.ices.dk/sites/pub/Publication%20Reports/Cooperative%20Research%20Report%20(CRR)/crr325/CRR%20325.pdf)

Standard clauses 1.3.2.2

Table D2 - Productivity / Susceptibility attributes and scores.

| Productivity attributes | High productivity (Low risk, score = 1) | Medium productivity (medium risk, score = 2) | Low productivity (high risk, score = 3) |
|--------------------------|---|--|---|
| Average age at maturity | <5 years | 5-15 years | >15 years |
| Average maximum age | <10 years | 10-25 years | >25 years |
| Fecundity | >20,000 eggs per year | 100-20,000 eggs per year | <100 eggs per year |
| Average maximum size | <100 cm | 100-300 cm | >300 cm |
| Average size at maturity | <40 cm | 40-200 cm | >200 cm |
| Reproductive strategy | Broadcast spawner | Demersal egg layer | Live bearer |
| Mean Trophic Level | <2.75 | 2.75-3.25 | >3.25 |

| Susceptibility attributes | Low susceptibility (Low risk, score = 1) | Medium susceptibility (medium risk, score = 2) | High susceptibility (high risk, score = 3) |
|---|--|---|---|
| Areal overlap (availability) Overlap of the fishing effort with the species range | <10% overlap | 10-30% overlap | >30% overlap |
| Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear | Low overlap with fishing gear (low encounterability). | Medium overlap with fishing gear. | High overlap with fishing gear (high encounterability). Default score for target species |
| Selectivity of gear type Potential of the gear to retain species | a Individuals < size at maturity are rarely caught | a Individuals < size at maturity are regularly caught. | a Individuals < size at maturity are frequently caught |
| | b Individuals < size at maturity can escape or avoid gear. | b Individuals < half the size at maturity can escape or avoid gear. | b Individuals < half the size at maturity are retained by gear. |
| Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival | Evidence of majority released post-capture and survival. | Evidence of some released post-capture and survival. | Retained species or majority dead when released. |

| D3 | | Average Susceptibility Score | | |
|-----------------------------------|--------------------|-------------------------------------|--------------------|-----------------|
| | | 1 - 1.75 | 1.76 - 2.24 | 2.25 - 3 |
| Average Productivity Score | 1 - 1.75 | PASS | PASS | PASS |
| | 1.76 - 2.24 | PASS | PASS | TABLE D4 |
| | 2.25 - 3 | PASS | TABLE D4 | TABLE D4 |