Question to EURCAW-Aqua: *Killing methods for lampreys*

Question received: 23 April 2026
Question answered: 29 May 2026

EURCAW-Aqua received the following query from an NCA in one of the Member States.

Information and background context provided by the solicitor

A lamprey processing company, with seasonal production (1 to 2 times per year) of a maximum of 1,000 kg, receives live lampreys and applies a "traditional recipe" for killing and preparing the fish. The technique includes boiling the fish alive, followed by scraping them "alive" and bleeding them through the tail to collect blood for sauce, after which they are gutted. During an inspection, it was observed that lampreys were still alive after 12 seconds in boiling water, and they sometimes even moved after being bled.

QUESTION

EURCAW-Aqua received the following question from a welfare competent authority in one of the Member States:

> "*We would like to ask a question to the European Reference Center for Aquatic Animal Welfare regarding the killing and processing of lampreys. Could you please advise on a humane killing protocol for lampreys, a relatively 'resistant' animal (including best practices and/or recommended equipment, also considering the need to collect the blood for making the sauce in the traditional recipe)? Would bleeding through the carotid artery (cutting off the head) be faster and cause immediate death, and would separating the heart from the head be better? Alternatively, would stunning them, as is done with eels (and some other fish species), or even performing a 'matador-style' perforation in the head, be preferable to boiling them alive (without prior stunning or killing)?*"

Experts from EURCAW-Aqua wrote a reply. The EURCAW secretariat did the final editing.

For queries: info@eurcawaqua.eu

ANSWER

Thank you for your question concerning the slaughter/processing of live lampreys used for *Lamproie à la bordelaise*. As a preliminary point, this case concerns a **wild-caught fish**

species, temporarily held and processed after capture. It is therefore **not directly within the current priority scope of EURCAW-Aqua**, which is mainly focused on fish, cephalopods and decapods in the context of aquaculture, with priority given to farmed aquatic species of economic significance for European aquaculture. Nevertheless, EURCAW-Aqua can provide a welfare-oriented scientific consultation, especially because the same general principles apply, i.e. avoidable pain, distress, suffering and injury should be prevented as far as possible.

The process described appears to include the following steps:

Step in current process	Intended purpose	Main welfare risks
Capture/fishing and transport of live lampreys	Supply live animals for seasonal processing	Capture stress, exhaustion, injury, impaired homeostasis
Temporary storage, including possible storage in open air	Holding until processing	Asphyxia, dehydration, osmotic and thermal stress, prolonged distress
Immersion in boiling water for >10 seconds	Expected killing step and loosening/removal of mud/skin surface	Severe pain, thermal injury, distress, risk of incomplete killing
Scraping with a knife while the animal may still be alive	Removal of mud/mucus/outer material	Pain, injury, tissue damage, handling stress
Cutting the tail/body to bleed	Blood collection for sauce	Pain and injury if consciousness persists; delayed death by exsanguination
Hanging to bleed and collect blood	Completion of bleeding	Distress/asphyxia if not already unconscious or dead; possible residual movements
Evisceration and further processing	Food preparation	Major welfare concern if performed before confirmed death

A key point is that, in the present process, **death is expected to occur during the boiling-water step**. However, the observation that lampreys may still be alive after approximately 12 seconds in boiling water indicates that this assumption is not reliable. Therefore, boiling water should not be considered a humane or sufficiently controlled killing method for lampreys. Even if some post-cutting or post-bleeding movements may be reflexive, the possibility that the animal remains conscious during scalding, scraping or bleeding represents a significant welfare risk.

Welfare risks before killing lampreys are not of great significance given the resilience of lampreys in air exposure during the catching, temporary storage and transportation steps. As soon a reliable acute and painless killing method will adopt, steps after such as hanging, cutting and bleeding is out of any consideration.

For comparison, general fish welfare guidance recommends stunning before killing, and, where stunning is not irreversible, killing should occur before recovery of consciousness. It also identifies percussive stunning, spiking/coring of the brain, and electrical stunning as potential approaches, provided that they are correctly applied, validated and backed up by a contingency method. EFSA has issued species-specific opinions on stunning and killing methods for several farmed fish species, including European eel, but not, to our knowledge, for lamprey.

In this case, because the animals are processed individually and are relatively large, the most practical mitigation would be to introduce a **prior stunning/killing step before boiling, scraping or bleeding**.

A suitable adapted protocol would be:

1. **Minimise holding time**
   Live lampreys should be kept under conditions that maintain homeostasis as far as practicable, with minimal handling, crowding, temperature stress and time out of water. Keep captured lampreys in a holding deeped in water.

2. **Handle individually using a cloth, glove or purpose-designed restraint.**
   Lampreys are slippery and difficult to restrain. Secure handling is necessary both for welfare and for operator safety.

3. **Apply immediate percussive stunning to the head.**
   A firm, accurate blow should be delivered to the head, targeting the brain region (between the eyes), using a suitable fish priest/fish bat or an adapted mechanical percussive stunner. This should be carried out by trained personnel only.

4. **Confirm loss of consciousness.**
   The operator should check for absence of coordinated movement and absence of response to handling or noxious stimulation. Because lampreys may show residual reflex movements, movement alone should not be used as proof of consciousness, but any doubt should lead to immediate re-stunning.

5. **Ensure irreversible death.**
   After percussive stunning, brain destruction by spiking/pithing, comparable to an *ike-jime*-type technique adapted to lamprey anatomy, would provide an additional safeguard. Alternatively, severe destruction of the brain region may be considered, but this should not replace effective prior stunning unless it can be performed instantly and reliably.

6. **Bleed immediately after stunning/killing for blood collection.**
   The tail/body cut and hanging for blood collection can then be performed while the animal is unconscious or dead. This should preserve the possibility of collecting blood for the traditional sauce while preventing conscious bleeding.

7. **Scald only after confirmed stunning/killing.**
   Boiling water should be retained only as a processing/scalding step, not as the primary killing method.

We would **not recommend relying on bleeding alone**, including cutting the tail or severing major vessels, as the primary killing method, because death by exsanguination may not be immediate and could involve avoidable pain and distress if the animal is conscious. Similarly, **boiling alive should be avoided**, given the clear risk of severe thermal pain before loss of consciousness.

In conclusion, the most welfare-compatible adaptation of the traditional process would be to **move the killing point upstream**: lampreys should be effectively stunned, preferably irreversibly, before any boiling-water immersion, scraping, cutting or bleeding. This would allow the traditional culinary requirement for blood collection to be maintained while substantially reducing the risk of pain, distress and prolonged suffering.