

THE KEEPNET: TRAPPING SYSTEM FOR CAPTURING THE AFRICAN CLAWED FROG

TECHNICAL SHEET

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This program is coordinated by the Société Herpétologique de France (SHF), and carried out in collaboration with seven partner structures

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1.1.THE AFRICAN CLAWED FROG AN INVASIVE EXOTIC SPECIES IN FRANCE

An [invasive alien species](#) is defined as a species introduced by man outside its natural range (voluntarily or fortuitously) and whose establishment and spread threaten ecosystems, habitats or native species with ecological consequences. and/or economic and/or negative health ([IAS Resource Centre](#)).

Originally from southern Africa and introduced to France several decades ago, the African clawed frog (*Xenopus laevis*) is now one of France's invasive alien species. The species is listed in [annex 1 of the ministerial decree of February 14, 2018](#), which means that its introduction is prohibited on national territory.

Widely used in research laboratories since the 1950s, this species was released in Deux-Sèvres following the closure of a breeding centre for animal experimentation.

It thus colonized several departments of metropolitan France, such as Deux-Sèvres, Maine-et-Loire, Vienne and Loire-Atlantique. Three new populations were discovered in Gironde (2015), in the North (2018) and in Haute-Garonne (2019).

→ [Learn more about invasive alien species regulations](#)

Several legal texts address the issue of invasive alien species at national, European and international levels. In France, the [National Invasive Alien Species Strategy](#) was drafted in 2016. It aims to protect marine, freshwater and terrestrial ecosystems, as well as the animal and plant species they host, from the risks and effects associated with biological invasions. Its general objective is to strengthen and structure collective action concerning prevention and awareness, the establishment of surveillance and rapid reaction systems, long-term management means, including the restoration of ecosystems, and the improvement of knowledge.

Guided by these European and national strategies, study and control actions against the clawed frog have been tested by professionals from local authorities and environmental associations ([LIFE CROAA project](#)), in order to identify the species, limit its dispersion and if possible to reduce its impact on the natural environment.

This sheet aims to detail the creation and implementation of an innovative trap for capturing this species.

→ [Learn more about Species targeted by LIFE CROAA](#)



2. THE INVENTORY, A PRELIMINARY STAGE TO THE IMPLEMENTATION OF TRAPPING

Setting up traps in an aquatic area is not without consequences for biodiversity. Indeed, many species live in these water points for all or part of their life cycle and capturing certain species is sometimes prohibited.

Each situation will have to be the subject of a precise inventory of the amphibians present on the site then of a shared diagnosis in order to consider the implementation or not of a trapping system which could impact aquatic life. We also invite you to get closer to local environmental structures in order to have a good knowledge of the species potentially present on your site and which could be the subject of conservation plans.

- Access the [“amphibians” inventory protocol](#) (in french) recommended by the SHF. For special support: contact@lashf.org
- Attention, amphibians are protected in France ([Order of January 8, 2021 fixing the list of amphibians and reptiles represented on the metropolitan territory protected on the whole of the national territory and the methods of their protection](#)). Any manipulation during an inventory is therefore subject to obtaining a derogation which is the subject of a prefectural decree. This derogation request must be submitted to the [Regional Management Environment Development Housing](#) in your region. The lead times can be quite long, think about doing it in advance.
- At the end of your inventory, contact the SHF who will carry out, in collaboration with your structure, a diagnosis of your inventory. This will allow you to jointly adopt the best strategy for the ecological management of your aquatic site (contact@lashf.org). Prior to the exchanges, remember to gather all the key information about the site (geographical coordinates, permanent or temporary aquatic site, surface area, proximity to other wetlands, proven presence of other protected species, etc..).
- **If the presence of newts is proven in your body of water, this trap system cannot be set up because it presents a risk of death by drowning of these species.** NB: This device is mainly suitable for large bodies of water and purification lagoons or storm settling basin (minimum 1 m deep).



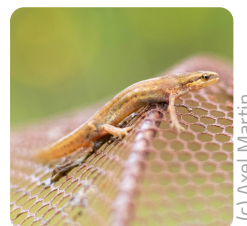
3. IMPLEMENTATION OF TRAPPING



3.1 Prerequisites for trapping actions

Obtention de dérogation

Regardless of the stage of development, your actions to capture African clawed frogs are likely to result in the accidental capture of other amphibian species. The latter are all protected in France according to the [Order of January 8, 2021 setting the list of amphibians and reptiles represented on metropolitan territory protected throughout the national territory and the terms of their protection.](#)



(c) Axel Martin

Any capture and manipulation, even temporary, of protected species is therefore subject to obtaining a derogation which is the subject of a prefectural order. This derogation request must be submitted to the [Regional Environment and Housing Development Department \(DREAL\)](#) in your region. As a reminder, the delivery times can be quite long, think about doing it in advance.

As head of the national network, the SHF coordinates control actions for this species, so we invite you to contact us before any trapping operation in order to:

- Be accompanied for the implementation of a procedure respecting the regulations;
- Know the methods of taking care of individuals;
- Upload your observation and capture data.

>> contact@lashf.org

Protecting ourselves and the environment:

Hygiene protocol

Before and after any handling of amphibians, a hygiene protocol must be followed to prevent the transmission of diseases specific to these species, such as ranavirose or chytridiomycosis, responsible for the death of many species of amphibians, reptiles or even of fish (see access to the protocol on next page).

Field clothing

Clothing covering at least the legs and thighs, with boots or hiking shoes is recommended in the field. Over-trousers such as a fishing raincoat can be used and will be easy to disinfect with a disinfectant such as Virkon®.

The outfits of the agents carrying out the capture actions should ideally be washed every week to avoid storing any pathogens on the clothes. This disinfection step must be carried out at a certain distance from water points to avoid any release of the product into the aquatic environment.



Rubber gloves are essential for handling individuals in order to avoid contact with their mucus, but also contact with water contaminated by the possible presence of nutria (leptospirosis). Wearing gloves for trapping in a wastewater treatment plant (STEP) is also compulsory in order to avoid biological risks such as the presence of viruses in the water (model of gloves recommended in the equipment and cost section of each technique of trapping).

We recommend that you wear a light life jacket during field operations near deep water bodies. As a safety measure, it is also advisable to work in pairs on most actions.

Find the protocol for disinfection and use of Virkon® on the SHF website:

lashf.org/fiches-techniques/ > Section "Our other technical sheets"

> "Hygiene protocol for amphibian disease control in the field".



3.2 Equipment and costs

The cost of your action may change depending on the surface of the area to be trapped and the equipment you already have and/or the quality of the equipment acquired:

- **Keepnet:** Floating system, with an entry pointing upwards. The orange buoy will keep the trap on the surface and the amphibians to come and breathe. This system thus limits the risk of accidental drowning while waiting for the traps to be changed (every 24 hours). XL size at €37 recommended. **Around €37 per unit depending on the format of the hamper.** Supplier Example: Fishing Store.
- **Trap with net with double entrances,** foldable, round or square. Catfish trap type. 2 openings and 2 anti-return bottlenecks, a bait pocket. Average dimensions of 30 x 60 cm. 10 mm mesh. From **10 to 20 € per unit depending on the model.** These traps adapt perfectly to shallow water bodies. As part of making the trap, the trap is to be placed inside the keepnet cf. point 3.3 below.
- **Fishing line and needles:** For the creation of the trap, the keepnet and the trap must be assembled. Fishing line (braid type) for the seams and rather large and curved needles. **€9 to €17 per 130 m spool.** Curved needles available on all e-commerce platforms, generally sold in batches. **Average price: €6.**
- **Leads for anchoring and weights [optional]:** If the weights for the weights are optional, the one for the anchoring will be useful to prevent the system from drifting under the effect of the wind. 100 gr weights for large bolts. **About 7 € for 5 pellets of 60 gr.** Example of supplier: Decathlon.



- **String:** To attach the trap to a fixed element placed on the bank (tree, fence post or rebar to be installed yourself), in order to facilitate its recovery during surveys. Ref: Corderie Mesnard, 200 m spool, standard halyard, Ø 2 mm. **€10.50 per spool.**
- **Bait:** Dog food (**about €6.5/kilo**) is to be used to bait your traps and try to improve your catch rate. Place these baits in a small sausage of about 5 cm, in a small resealable net (usually sold with the trap). Be careful, however, they are likely to attract other exotic species potentially present in your bodies of water (crayfish, catfish, etc.). These invasive species must never be returned to the water (for more information, consult the Invasive Alien Species Resource Centre). With regard to the other catches (native species of fish and amphibians), it will be necessary to check the traps every 24 hours to release the individuals not concerned by your capture plan.
- **Plastic buckets:** Buckets with hermetic lid of 30 L. For packaging the individuals sampled. **€10 to €15 per unit depending on the model** (example of supplier: Rolléco - €7.28 per unit).
- **Disposable coveralls or fishing raincoat and face protection visor:** For wastewater treatment plants, also provide a cleanable coverall or fishing raincoat and a face protection visor. This equipment will allow you to protect yourself from waste water (projections when handling equipment or individuals). **Disposable overalls around €11 excl. VAT each. Protective visor around €7 excl. VAT each.** Example of supplier: Servilab
- **Gants :** Gants de nettoyage vaisselle imperméables avec manchons. Choisir un modèle ni trop
Gloves: Waterproof dishwashing gloves with sleeves. Choose a model that is neither too wide nor too tight to put them on and take them off easily and maintain a flexible grip. They can be disinfected, washed and used several times; however, be sure to choose a resistant model.
From 5 to 7 € per pair depending on the model.
- **Fishing Boots:** All-terrain rubber boots. They will have to be cleaned systematically from one water point to another (see hygiene measures). **From 40 to 100 € per pair depending on the model.**
- **Waders [optional]:** Neoprene material for fishing (entering the water). They will have to be cleaned systematically from one water point to another (see hygiene measures). **From 65 to 140 € per unit depending on the model.**
- **Binoculars [optional]:** For occasional observation of individuals from dawn to dusk. **From €300 per pair to benefit from professional equipment.**

Every week and between each change of water point, clothing and equipment must be cleaned according to the disinfection and use protocol for Virkon®, in order to avoid any storage and transfer of pathogens.



As a reminder, the following device is mainly suitable for large bodies of water and purification lagoons or storm settling basin (minimum 1 m deep).

If the presence of newts is proven in your body of water (see inventory phase), this type of trap cannot be used because it presents a risk of death by drowning of individuals.

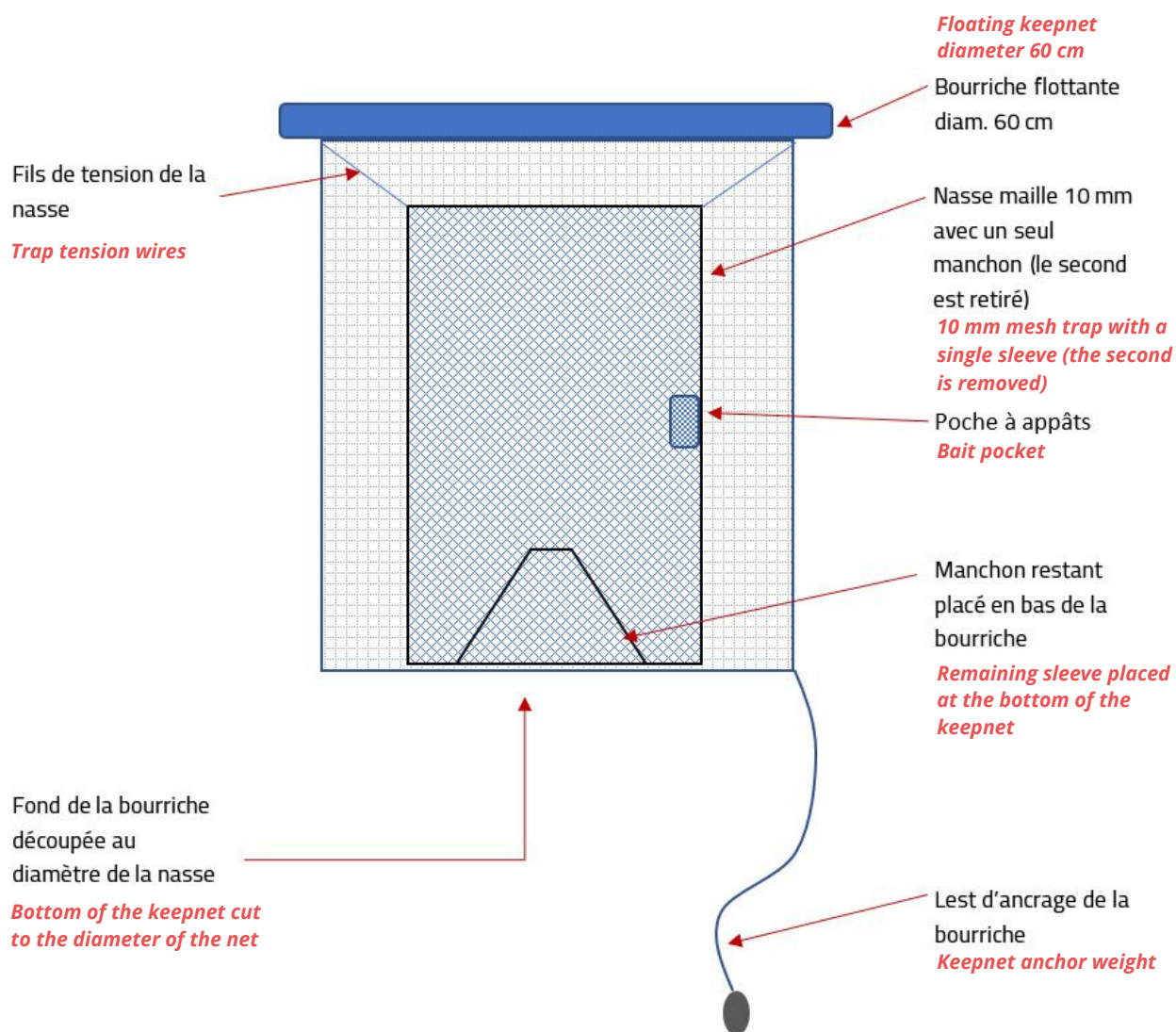
3.3. Making traps

See map and photos below.

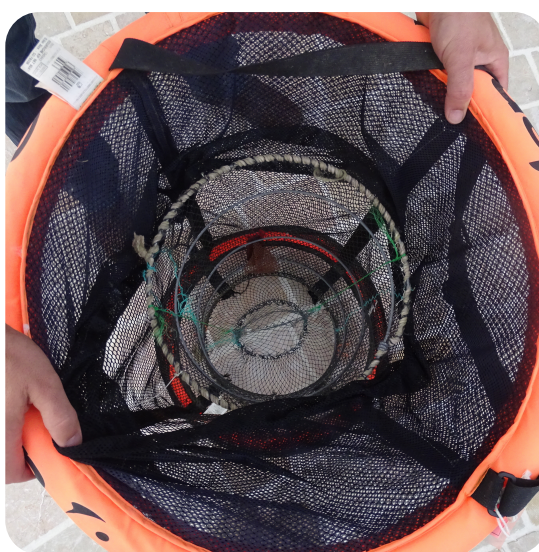
1. Cut one of the 2 sleeves of the trap so that one side is completely open.
2. Slide your trap inside the keepnet (from the top, buoy side). The side of the trap still equipped with the sleeve must be placed downwards.
3. The trap is sewn to the bottom of the hamper. The net bottom of the keepnet is then cut to create the opening of the trap.
4. Sew the round frame of the trap to the bottom of the basket, using the fishing line and a needle. Double the seams to have a perfect and solid connection with the trap.
5. Cut the bottom of your basket to a diameter corresponding to that of the trap you have just sewn.
6. Attach by the top of the trap and that of the keepnet using 4 suspension threads placed on 4 opposite points. This device will keep your upright centred and upright in the keepnet.
7. The finished set shows the hanging trap with the opening pointing downwards.
8. Attach a string of at least 1m to the bottom of the keepnet with a weight to serve as an anchor for the trap.

NB: The entire trap can be folded up for transport and facilitate handling. When assembling the trap, keep the two hooks of the trap allowing it to be folded.





The trap is sewn to the bottom of the hamper. The net bottom of the keepnet is then cut to create the opening of the trap. (c) Maelle Ladislav



The trap is attached from the top with rows of suspensions. (c) Maelle Ladislav



3.4. Installation of traps

The objective is to trap African clawed frogs in a defined area (the body of water) during several passages spread over the reproduction period of this species.

It does not necessarily require significant human resources (1 to 3 people depending on the surface of the study area).

- **Periodicity**

Regularly carry out week-long trapping sessions, from April to September, intensifying your efforts from May to June (periods when the numbers captured are the greatest) with daily trap setting and recording. Depending on weather conditions, the trapping period may start earlier and end later.

If juveniles and adults are active with a water temperature from 14°C, the ideal water temperature for captures is 22°C (cf. study by Casterlin, M.E. and Reynolds, 1980. Hydrobiologia). Remember to regularly check this data using your thermometer in order to optimize your trapping sessions.

- **Implementation**

NB : For an optimal capture rate, count 2 to 3 traps for 100 m². If the surface area of your water point is greater, provide a number of traps proportional to the above indication for 100 m². For bodies of water from 800 m², it will be necessary to cap their number at 10 maximum, in order to optimize your capture sessions (logistics and time spent).

1. Bait the traps with dog kibble (put a sausage of about 5 cm per trap in the bait pocket).

2. Place your traps in the evening on your site:

- Tie them securely with a string to a fixed element (post, tree) positioned on the bank so that they do not drift.
- Check that they are floating and positioned vertically, so that captured individuals can come to the surface to breathe.

NB : The time for setting the traps must be a full night to ensure the capture of the individuals (allow 24 hours of setting maximum).

3. Your traps must then be checked the next morning (preferably before 10am). These operations of laying and recovery must be carried out during 4 days, following the first day of trapping.

African Clawed frogs caught daily should be counted (if possible, indicate the number of individuals caught by stage and sex - see sheet proposed in annex 1 for the census) and placed in the buckets provided for this purpose (pour a background of water into the receptacles before placing the individuals there to limit their stress).

Find the identification keys for juveniles and adults on the SHF website: lashf.org/fiches-techniques/ > Section "Management of invasive alien species" > "Inventory sheet of the African clawed frog (LIFE CROAA)".

4. During the last survey of the week, all traps must be removed from your site and cleaned (see disinfection protocol and use of Virkon ®).



The finished set presents the suspended trap with the opening directed downwards. (c) Maelle Ladislas



Set trap set in the water. (c) Axel Martin



5. ACCOMPANIMENT AND FOLLOW-UP



As head of the national network, the SHF coordinates control actions for this species, so we invite you to contact us before any trapping operation in order to:

- Be accompanied for the implementation of a procedure respecting the regulations;
- Know the methods of taking care of individuals;
- Upload your observation and capture data:
 - For each capture technique and during your trap readings, record your observations of African clawed frogs in a field sheet (see an example in appendix 2). Any observation of other amphibian species (by visual, auditory observation, or capture) must also be mentioned in your field sheet..
 - Enter all your data respecting the elementary exchange data of the SINP (DEE). If you do not have a suitable tool, the SHF makes its own available to you to enter your amphibian and reptile data by creating a dataset adapted to your structure and your program (metadata): geonature.lashf.org

>> Contact us: contact@lashf.org



LAND SHEET		
Observation of African clawed frog - Passage n°...		
Observer name:		Date:
Geographical coordinates, name and description of the environment:		
Air (°C) and water (°C) temperature	
Weather report	Rainy / cloudy / sunny	
Rains	
African clawed frog	Observation method	Quantity
Spawning	Visual observation / landing net	
Tadpoles	Visual observation / landing net / trap	
Juvenile s	Visual observation / landing net / trap	
Adult s Female s	Visual observation / landing net / trap	
Adult s Male s	Visual observation / landing net / trap	
TOTAL		
Other species (specify species, stage and sex):	Observation method	Quantity
	Visual observation / landing net / trap	
	Visual observation / landing net / trap	
	Visual observation / landing net / trap	
	Visual observation / landing net / trap	
	Visual observation / landing net / trap	
TOTAL		





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