

## INSTALLING A POND CONTAINMENT DEVICE AGAINST 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.

#### Find out more: www.life-croaa.eu

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### 1.THE AFRICAN CLAWED FROG, AN INVASIVE ALIEN SPECIES IN FRANCE

An <u>invasive alien species</u> 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 (<u>IAS Resource Centre</u>).

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 <u>annex 1 of the</u> <u>ministerial decree of February 14, 2018</u>, 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 <u>National Invasive Alien Species Strategy</u> 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 (<u>LIFE CROAA</u> <u>project</u>), in order to identify the species, limit its dispersion and if possible to reduce its impact on the natural environment.

One of the key elements in the fight against its proliferation lies in the establishment of facilities for the containment of lagooning basins or water settling basins. In fact, these artificial basins are environments highly appreciated by the African clawed frog: it finds there the optimal conditions for its development (relatively warm stagnant water, high concentration of organic matter). It is therefore essential to prevent its installation in this type of basin, and to prevent any dispersal of individuals to new surrounding sites (ponds, ponds, streams, etc.), in order to preserve local species. and maintain good ecological continuity of the territories.

This sheet is intended to explain the implementation of lagoon containment.

Learn more about species targeted by LIFE CROAA



### 2. THE INVENTORY, A PRELIMINARY STAGE TO IMPLEMENTING THE INSTALLATION

Confining a basin is not without consequences for biodiversity. Indeed, many species use these water points for all or part of their biological cycle. Travel with nearby terrestrial environments can therefore represent a vital need for some of them.

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 containment which could impact their movements. We also invite you to get closer to local environmental structures in order to have a good knowledge of the other vertebrate species (small mammals in particular) present on your site and which could be the subject of protection plans.

- Access the <u>"amphibians" inventory protocol (in fench)</u> 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..).

Faced with the presence of certain pathogens that can cause high mortality in amphibians, inventories require the implementation of a specific disinfection protocol for your clothing and equipment.

Find the protocol for disinfection and use of Virkon® on the SHF website: <a href="mailto:lashf.org/fiches-techniques/">lashf.org/fiches-techniques/</a> Section "Our other technical sheets" > "Hygiene protocol for amphibian disease control in the field".





# 3. IMPLEMENTATION OF THE CONTAINMENT FACILITY

### 3.1 Material and estimated cost

The total cost will vary depending on the surface of your land, the equipment you already have and/or the quality of the equipment acquired. We recommend a minimum of 2 people mobilized for setting up the installation. About 15 days are needed to create a containment zone.

#### List of materials needed below

The information provided in colour on the quantities is made on the basis of a containment of 3 basins for a total surface of  $11,700 \text{ m}^2$ .

#### **Realisation of the enclosure**

#### Marking bomb

- For the delimitation of the containment zone around the basin.
- Fluorescent construction marker 500 ml (quantity: 5).

#### Excavator

- To dig the trenches necessary for laying the fence.
- Rental possible by the day, fuel and insurance included.
- Make sure the excavator is equipped with rubber tracks to limit your impact on the ground.

#### Wire mesh

- For the realization of the enclosure around the basin.
- Square meshes of 6.5 mm, length 6.50 m x height 1 m, galvanized RL (quantity: 31 rolls).

#### **Concrete irons**

- For the construction of the enclosure around the pool: laying an iron or a stake every 2 m, for the rigid maintenance of the fence. The rebars are 6 m long, it will be necessary to cut 1.50 m stakes using a hacksaw or a bolt cutter (with 1 rebar, you get 4).
- Notched iron, Diameter 10mm in 6m (quantity: 115).

#### Hacksaw and bold cutter

- Pour couper des piquets en fer à béton de 1,50 m pour la confection de la structure de l'enclos (avec 1 fer à béton de 6m, on en obtient 4).
- quantité : 1.

#### Galvanized wire

- To make the attachment between the fence and the stakes. Wear protective goggles when cutting the wire to protect yourself from any projections.
- 1.6 mm n° 11, 5 kg (quantity: 1).

#### Manual gripper

- For cutting galvanized wire and making fasteners.
- quantity : 1.



#### Installation of the filtration device

#### Valve

- For the construction of the filter device.
- Type 77 PVC with removable shovel in place, diam. 200 mm for pressure PVC pipe DN200 PN 1 BAR. PVC body and stainless-steel guillotine. AISI 316 stainless steel shaft. Sealing EPDM seal.

#### Pipes

- For the construction of the filter device (inlet and outlet of the filter basin).
- PVC 100 4 meters (quantity: 2).

#### **Exhaust connection**

- For the construction of the filter device.
- Elbow 87 30 FF D (quantity: 1) and Elbow 87 30 MF D100 (quantity: 1).

#### Lime or cement

- For the realization of the filtration basin, masonry of the walls of the basin recommended dimensions: 1m (I) \* 2.90 m (L) \* 0.75 m (H)].
- 35 kg bag (quantity: 7).
- Lime is recommended as a greener material for construction.

#### Sand

- For the realization of the screed of the filtration basin recommended dimensions: 1m (l) \* 2,90 m (L) \* 0,75 m (H). The concrete screed should measure approximately 15-20 cm.
- 1m<sup>3</sup> of loose sand approximately.

#### Concrete

For the realization of the screed of the filtration basin - recommended dimensions: 1m (l) \* 2,90 m (L) \* 0,75 m (H). The concrete screed should measure approximately 15-20 cm.

#### **Concrete blocks**

- For the realization of the filtration basin recommended dimensions: 1m (I) \* 2,90 m (L) \* 0,75 m (H). The concrete screed must measure approximately 15-20 cm
- Count about 5 blocks for the length, 2 blocks for the width, 3 blocks in height (1 block is about 50cm \* 20cm \* 25cm).

#### Expanded metal

- For the obstruction of the exit channels of the filtration basin (grid preventing the exit of African clawed frogs).
- Grille en métal déployé 10 acier 60 x 100Fm (qté :1)

#### Rivets

- To fix the obstruction grid (expanded metal) at the outlet of the filtration basin (sliding system integrated into the wall of the basin and covering the pipe leading to the discharge point).
- INT standard 4.8x10, large head x 25 (quantity: 2 pieces).

#### Angles

- To fix the obstruction grid at the outlet of the filtration basin (expanded metal) to the filtration basin (sliding system integrated into the wall of the basin).
- 23.5 x 23,5a lubrut1m (quantity: 2 pieces)
- 15.5 x 15,5a lubrut1m (quantity: 2 pieces).

#### **Blue gravel**

- For laying at the bottom of the filtration basin.
- Calibre from 6 to 14 mm. About 1m<sup>3</sup>.

#### Tarps

- To protect the construction site, the storage of gravel and sand. Reusable on other sites.
- 6 m 50 (quantity : 4).



#### Estimated cost

As an indication, the Community of communes of Thouarsais (79) has twice experimented with the confinement of a lagoon area. Here are the costs for these two experiments:

Wastewater treatment plant (WWTP) of Saint-Martin-de-Sanzay (79) in 2018:

- Set of 3 confined basins for a total area of approximately 11,700 m<sup>2</sup>.
- 3 agents in intervention during/spread over 15 days.
- Total equipment budget: €5,100 including tax.

Wastewater treatment plant (STEP) of Bouillé Saint-Paul (79) in 2020:

- Set of 3 confined basins with a surface area of 3,000 m<sup>2</sup>
- 2 agents in intervention during/spread over 5 days.
- Total equipment budget: €2,500 including tax.

### 3.2. Installing the device

The implementation of the containment system can be carried out in several stages throughout the year, when the weather conditions are suitable.

However, we recommend that you rely on the intervention periods below for the main phases of the installation, in order to limit the disturbance of local biodiversity and to deploy your device at the most favourable time, to limit the proliferation of African clawed frogs.

#### Intervention periods

In order not to impact the life cycle of species present in wetlands, we recommend that your installation be carried out in several stages:

- The structural work such as the construction of the trenches for the enclosure or the creation of the filtration basin must be done between September and March;
- The laying of the fence can be done in winter;
- The smallest developments can be carried out all year round (installation of stakes for the enclosure);
- It is also preferable to maintain the area around the pool outside of breeding periods (from September to March).

Before initiating the design of your containment basin, it will also be necessary to study your basin maintenance methods. Indeed, the installation proposed below must be adapted to the access needs to your pool and to the equipment used (distance from the edge, concrete step, height of the fence, etc.).



#### Implementation

#### Step 1: laying the fence

- Delimit the contours of the basin using marking bombs (at least 50 cm from the edge, this distance will depend on the method of maintenance of the area): this marking will make it possible to locate the location of the trenches for the installation wire netting.
- Using the mechanical shovel, make trenches 15-20 cm deep around the basin following the outline.
- Then lay the pre-cut stakes (see list of materials) in the trench and fix the mesh in tension using staples or galvanized wire and manual pliers.

You can also secure your gate either with a concrete step or with a mesh catch basin. These devices are not mandatory as they are not always compatible with the maintenance access needs of the area.

*NB* : the screened sump requires additional maintenance insofar as it will be necessary to recover the species which may possibly be trapped there

#### Step 2 : Installation of the outlet filtration device

It is necessary to set up a filtration device at the level of the wastewater outlet channel so that the African clawed frog cannot escape. This device must be adapted to the terrain and the structure of the basin. The procedure to follow is as follows:

- Install a guillotine valve at the level of the usual wastewater discharge outlet channel upstream of the construction of the filtration basin;
- Build a filtration basin on the path of the wastewater outlet channel (recommended dimensions: 1m (I) \* 2.90 m (L) \* 0.75 m (H). The concrete screed should measure approximately 15-20 cm;
- Connect the discharge point to the filtration pond. A second high way out of the filtration basin can be installed to prevent the risk of overflow;
- The pipe must be screened at the outlet of the retention basin in order to prevent the release of African clawed frogs. Once the basin is in place, fill it with blue gravel.

In some cases, and depending on the nature of the terrain, it may be necessary to divert the usual wastewater outlet channel by building a filtration device nearby, and not in the continuity of the outlet channel **(see diagram below)**.



















#### Maintenance tips

- To preserve the odonates, it is recommended to let the vegetation grow 5 to 10 cm on the edge of the fence (inside) in order to form a plant barrier and limit collisions with your fence.
- Regularly check the condition of the mesh and repair any holes using galvanized wire or staples if necessary.
- If a monitoring system is in place (see point 5 below), it is necessary to carry out maintenance work on the vegetation around the pool, in order to facilitate access.

#### Compensation

To compensate for the disturbance caused by the confinement of a natural environment, it is advisable to implement the following actions to promote biodiversity:

- Creation of refuges conducive to the reception of reptiles and amphibians;
- Differentiated management of the space in your pool;
- Creation of a pond in favour of local species (a few years after the establishment of the containment basin).



# 4. TO GO FURTHER, THE CAPTURE OF AFRICAN CLAWED FROGS

It is recommended to set up amphibian traps integrated into the containment facility (outside and/or inside the basin) in order to be able to monitor the African clawed frog population. Follow-up actions are necessary to remove, count and sex African clawed frogs in the traps placed all along the fence.

The implementation of such a project requires obtaining a derogation for the capture with immediate release on site of protected animal species and an authorization for the capture of animal species relating to African clawed frogs. This derogation is obtained by prefectural decree, a request must be submitted to the Regional Environment and Planning Department Accommodation in your region (cf. page 4 for more details).

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







### 4.1 Setting up African clawed frog traps

#### **List of materials needed**

#### Thermal auger

- To dig the holes that form the traps.
- Diameter: 25 cm / depth: 50 cm.

#### Flower pots, buckets or pre-cut PVC tube

• For the realization of the traps, to lay out every 5 m approximately. Provide a container with a diameter equivalent to the holes dug.

#### Implementation

**Step 1**: Using an auger, outside and/or inside the screened area, make holes approximately 5 m apart (diameter: 25 cm / depth: 50 cm).

<u>Step 2</u> : Slide flower pots, buckets or PVC tubes into the cavities to create the traps. Add inside these traps, strong enough sticks allowing the micromammals to get out in case of capture.

The traps thus installed will make it possible to recover the African clawed frog but also the other species of local amphibians which try to penetrate or leave the confined zone.



### 4.2 Capture of African clawed frogs

From the installation of these traps, a passage **every 24 hou**rs and preferably in the morning (before 10 a.m.) is essential to carry out their relief, in order to avoid any mortality of individuals of native species. This step can take from 2 to 4 hours of working time per agent depending on the number of individuals trapped. It is recommended at each visit to monitor the species captured on your confined site (see monitoring sheet in the annex).

#### Protect yourself 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 below).

It is recommended that the agents in charge of monitoring be vaccinated against leptospirosis.

#### **Clothing in the field**

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<sup>®</sup>.

The outfits of the agents carrying out the capture actions should ideally be washed every week and between each change of water points to avoid storing any pathogens on the clothes. This disinfection step must be carried out at a certain distance from water points to prevent 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.

We recommend that you wear a light lifejacket 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 disease control of amphibians in the field".



#### List of materials needed

#### Landing net

- Standard landing net with a mesh of less than 5 mm with a 2-meter handle. For the recovery of African Clawed frogs trapped in the filtration basin.
- From 50 to 120 € per unit depending on the model.

#### Buckets with airtight lid

- Buckets with hermetic lid of 30 L. For the conditioning of the individuals sampled.
- €10 to €15 per unit depending on the model (example of supplier: Rolléco €7.28 per unit).

#### Gloves

- Waterproof dish cleaning gloves with sleeves.
- Choose a model 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.

#### Implementation

Step 1 : Notify the date of passage on your field sheet (see example of sheet in appendix 1), the weather (rainy, cloudy, sunny) as well as the level of precipitation indicated on the rain gauge (optional). This must first be attached to the containment barrier.

<u>Step 2</u> : Go around the traps by sector (interior traps / exterior traps / pool outlet filter using the landing nets). African clawed frogs captured daily must be counted (if possible, indicate the number of individuals captured by stage and sex - see sheet proposed in appendix 1) and placed in the buckets provided for this purpose (pour a background of water into the receptacles before placing the African clawed frogs there to limit their stress). Optionally add categories for other species observed in your field sheet.

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)".







# 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;
- Remonter vos données d'observations et de capture :
  - 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 1). 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	98 89	
luvenile.s	Visual observation / landing net / trap	83 83	
Adult.s Eemale.s.	Visual observation / landing net / trap		
Adult.s Male.s.	Visual observation / landing net / trap	2 (a	
TOTAL		1	
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		2 8	









