



# Parrot-feather watermilfoil

(*Myriophyllum aquaticum*)

## Managing parrot-feather watermilfoil in the Riondaz pond in Viriat (Ain department)

### The Reyssouze river-basin board (SBVR)

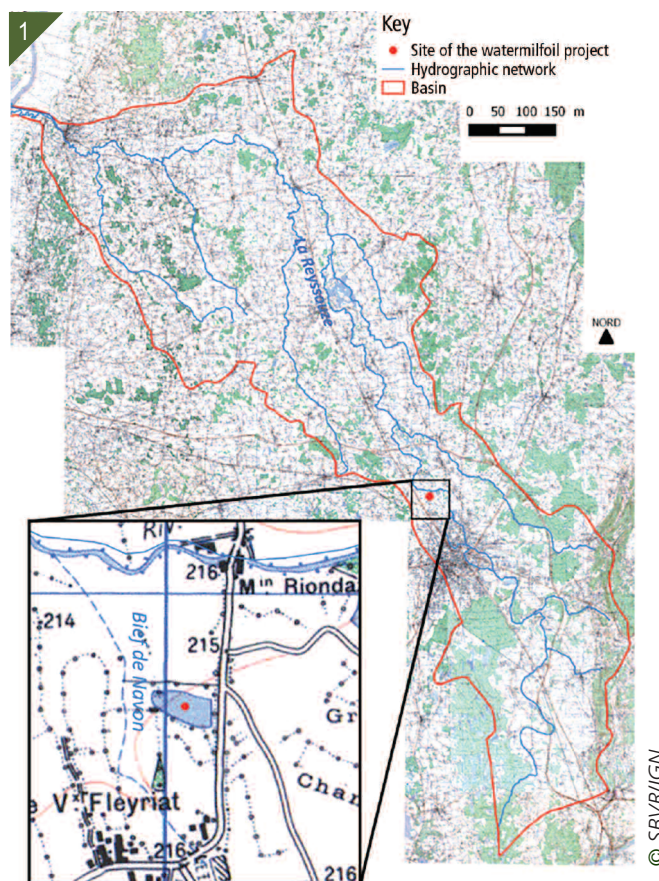
- SBVR works to improve the quality of the water courses and aquatic environments of the Reyssouze River and its tributaries. The board undertakes studies and work on the water courses of the basin, a territory representing 500 square kilometres and 38 towns.
- It also provides science advice to both public and private entities, as well as to private persons who want to work on aquatic environments.
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### Intervention site

- The Riondaz pond covers a surface area of 7 000 square metres in the town of Viriat (Ain department). The man-made pond is now used for recreational activities and is managed by the Works' council of the Ain psychotherapeutic centre (CPA).
- The bottom of the pond consists of alluvial stones covered by a thick layer of fine sediment. A source supplies most of the water and the precise depth of the pond is unknown. Three-quarters of the total surface area are exposed to sunlight and to winds from the north-west.
- A nearby discharge ditch is available to release the water from the pond to the natural environment. The ditch is linked to the pond at two points via culverts equipped with screens. The ditch flows into the Navon stream, a left-bank tributary that flows into the Reyssouze 200 metres downstream.
- The parrot-feather watermilfoil (PFW) was first observed in the pond in 2015. In 2017, the pond was the only known spot colonised by the species in the Reyssouze basin.

### Disturbances and issues involved

- Over the two-year period, the PFW developed considerably in the pond. In 2017, it had covered the entire surface area of the pond and replaced the previous beds of aquatic plants.



1. Mapping showing the Riondaz pond.

- Due to the excessive growth, recreational fishing, the main activity, and stocking were halted in 2016.

### Interventions

#### Interventions in 2017

- SBVR decided to launch a project to manage the PFW in order to avoid any risk of species dispersal to other sites in the river basin and to restore the recreational activities desired by the pond owner.
- The work consisted of uprooting the PFW using an excavator loaded onto a barge that enabled it to access the entire surface area of the pond. The excavator was equipped with a special bucket with "claws" designed to gather a maximum amount of plants while leaving the fine and coarse sediment.

■ The work took place over seven days in August, including five days of uprooting.

■ Prior to the work, several precautions were taken to avoid dispersal of plant cuttings:

- closing of the discharge gate;
- installation of a floating net and of fine-meshed screens just upstream of the discharge gate;
- installation of a natural filter (straw bales) in the discharge ditch.

■ Following the work, any floating plants along the pond banks and near the discharge gates were collected.

■ In September and October, two sessions of manual uprooting from a boat were organised to reduce the quantity of new growth.

■ The green waste was stored on a site where there was no danger of flooding. The waste was placed on a geotextile fabric to avoid contact with the soil. The PFW drained and dried *in situ* over a period of several weeks before being transported to a special centre for burial.

### ■ Interventions 2018

■ To avoid regrowth of the plants, four sessions of manual uprooting by volunteers were organised in 2018:

- two days in conjunction with FRAPNA (environmental-protection non-profit) on 5 May and 29 September;
- two five-day sessions in conjunction with Concordia (work programmes for young volunteers) from 16 to 20 July and from 13 to 17 August.

■ The work was done using plastic boats.

■ The manually uprooted plants were stored on site, in a spot where there was no danger of flooding, then destroyed using quicklime.

## Results and costs/assessment

### ■ Results

■ The mechanical uprooting in 2017 covered almost the entire pond and approximately 40 metric tons of drained plants were later transported from the site. A small island was removed manually because the low water level during the summer hindered the access of the barge.

■ In 2018, the sessions of manual uprooting by volunteers collected:

- 4.5 cubic metres of plants in May;
- 10 m cubic metres in July and August;
- 5 m cubic metres in September.

### ■ Costs/assessment

■ The total cost of the project in 2017 amounted to 35 730.25 euros (including VAT), of which 4 753.45 euros were required solely for the declaration of public interest (work authorisation). Processing of the green waste cost approximately 6 000 euros (including VAT). A number of partners funded the project, namely the Rhône-Méditerranée-Corse Water Agency (50%), the Ain department (20%) and the CPA Works' council (30%).

■ On 5 May 2018, the first uprooting session brought together 25 volunteers, the sessions in July and August involved 15 young volunteers from different countries (Concordia) and ten people participated in the session in September. The equipment (nets and boats) was provided free of charge by the project partners (Plaine Tonique recreational centre, Ain Fishing Federation, CPA Works' council) and the noon meals were provided by the site owner.



2. The pond colonised by parrot-feather watermilfoil.

3. Mechanical uprooting by the excavator on a barge.

4. Follow-up manual uprooting from a boat.

5. Green waste produced by the mechanical uprooting in 2017.





- Manual uprooting was not limited to the pond itself. Inspections on the ditches and water courses connected to the pond revealed several new PFW sites that could be uprooted before they colonised the Reyssouze River.
- The years 2017 and 2018 were highly favourable for the growth of PFW due to the temperate winters and long, hot summers. The effectiveness of the uprooting work was relatively limited. In 2018, the plants could develop to the emerged phase between two uprooting sessions.
- Manual uprooting from a boat is not an easy task. The boats were difficult to manoeuvre and the wet plants are very heavy, two conditions that hindered movements about the pond. The participants rapidly showed signs of fatigue.

## Information on the project

- The information disseminated on the project and the creation of a warning network covering the entire Ain department are the main positive points of the project. Several articles on the project were published in town bulletins, the local press (*La voix de l'Ain*, *L'Ain agricole*) and a regional newspaper (*Le Progrès*). Thanks to the warning network, a new, colonised site was discovered in July 2018 in Attignat (Ain department).
- Agence France Press sent a team to the site in August 2018 and made the information available to the regional, national and international press. (<https://france3-regions.francetvinfo.fr/auvergne-rhone-alpes/ain/bourgbesse/menace-etangs-ain-plant-invasive-fait-objet-campagne-arrachage-1526910.html>).
- SBVR produced an informational document. Information on the project was also disseminated via the social networks and the internet sites of SBVR and FRAPNA.

## Outlook

- Communication with pond owners in the Ain department is an objective that is difficult to implement given the small number of existing networks outside of the Dombes area. Contacts with mill owners were initiated in 2017 and will be pursued in the future.
- Technical meetings were held starting in September 2018 with the Ain Departmental Territorial Directorate, the Departmental Council, river boards and the farming profession to start thinking about a management strategy for invasive aquatic plants in the department.

Authors: Dimitri Mercier, SBVR, and Doriane Blottière, IUCN French committee, for the Resource Centre on invasive alien species. December 2018. Published by the French Biodiversity Agency.

*This management report fills out the collection already published in the second and third volumes of the book titled “Invasive alien species in aquatic environments, Practical knowledge and management insights”, in the Knowledge for action series published by the French Biodiversity Agency.*  
(<https://professionnels.ofb.fr/index.php/en/node/416>)



6. The manual-uprooting team on 5 May 2018.
7. The young volunteers from Concordia at work in August 2018.
8. The project displayed on the front page of the local, weekly paper *Le Progrès*.

### For more information...

- Informational document on watermilfoil and water primrose, and the Reyssouze bulletin:  
<http://syndicat-reyssouze.fr/publications/>
- Articles on the SBVR site concerning the watermilfoil uprooting operations:  
<http://syndicat-reyssouze.fr/gestion-myriophylle/> et <http://syndicat-reyssouze.fr/arrachage-myriophylle/>

