



Garden balsam (*Impatiens* spp.)

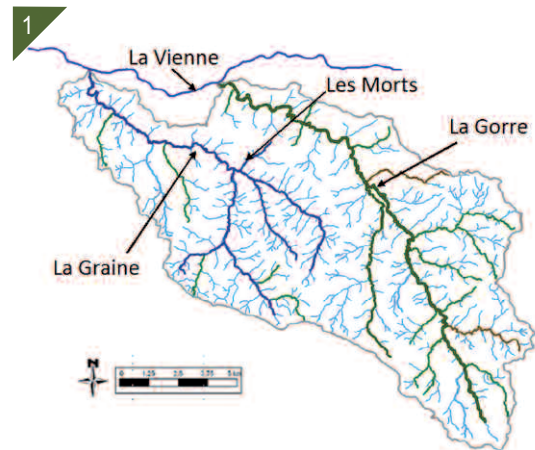
Managing Himalayan balsam in the Graine basin

Vienne Gorre river board (SMVG)

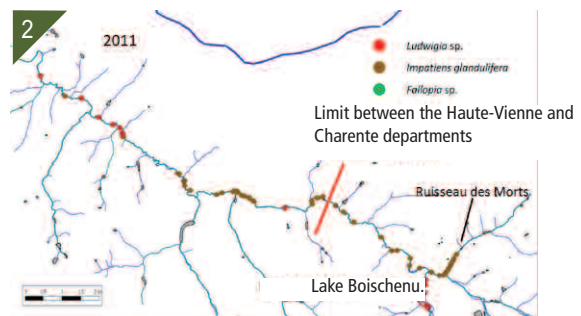
- The public board for inter-municipal cooperation was created in 1965.
- For its work on rivers, the SMVG represents 14 towns, 11 in the Haute-Vienne department and 3 in the Charente department.
- The main projects in the framework of the 2009-2013 contract for river restoration and maintenance (extended to include 2014) aim to:
 - restore the natural flow conditions of rivers;
 - improve the functions provided by riparian vegetation;
 - limit clogging of the riverbed;
 - enable free movement of fish;
 - preserve and encourage suitable management of emblematic environments;
 - develop fishing and water-oriented tourism;
 - drive policy, communicate and raise awareness;
 - limit the proliferation of invasive species by monitoring and managing *Ludwigia* spp. and *Impatiens glandulifera*, managing coypu and muskrats selectively and in a coordinated manner, monitoring the arrival of new invasive species and improving knowledge on emblematic aquatic species.
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Intervention site

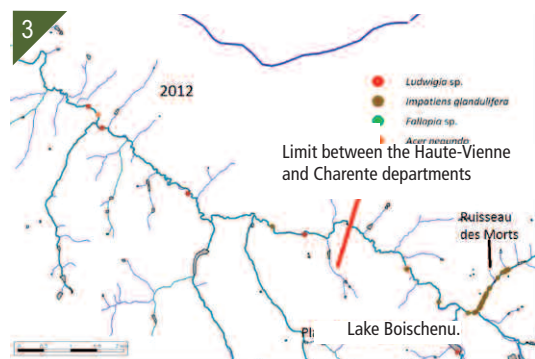
- The area managed by SMVG partially overlaps with that of the Périgord-Limousin regional nature park. The hydrographic network is fairly dense (approximately 500 kilometres of river) and comprises two main rivers, the Gorre and the Graine, two large tributaries and a large number of small streams.
- For *Impatiens glandulifera*, SMVG:
 - worked in 2006 on the Gorre River on a test work site with the Périgord-Limousin regional nature park and the National botanical conservatory for the Massif Central (CBNMC). The maps drawn up in 2007, on the 20-kilometre section of banks along the Gorre from the town of Saint-Laurent-sur-Gorre, the starting point of the colonisation, to the confluence with the Vienne River, indicate a total colonised surface area of approximately 40 hectares. Given the difficulties involved (long distances, windfalls, wooded slopes, etc.), SMVG decided not to do any management work on the Gorre River;



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1. Basins of the Graine and Gorre rivers.
2. 3. Location of invasive plants along the Graine River in 2011 and 2012.

- has worked since 2010 on the Graine River and its tributary, the Morts stream (19 kilometres long), following the discovery of *Impatiens glandulifera* in the area.

Disturbances and issues involved

■ *Impatiens glandulifera* was observed for the first time in 2000 in the area managed by SMVG on the banks of the Gorre River. It probably originated in a private garden. On the Graine River, it was first observed in 2010 in high concentrations upstream along a few kilometres of river bank. Downstream, the colonisation consisted of isolated plants observed down to the town of Chabanais, where the river flows into the Vienne River.

■ The development of *Impatiens glandulifera* has had negative ecological impacts on the area managed by SMVG:

- a reduction in local biodiversity due to the shade caused by the dense stands;
- greater instability of river banks due to the very weak root system of the species compared to the native species.

Interventions

■ Since 2011, SMVG has intervened on the banks of the Graine colonised by *Impatiens glandulifera* by supervising the work of a private company (manual uprooting and clearing). The initial work was carried out under pressing conditions in August 2010, following observations of the species along the Graine. That work is not described here.

■ An annual status report on the colonised areas is prepared prior to the interventions, in conjunction with the Poitou-Charentes regional observatory on invasive alien plants in aquatic ecosystems (ORENVA) and CNBMC.

■ Work periods

■ The work is organised in four periods due to the staggered growth of *Impatiens glandulifera*:

- period 1 during the second half of June;
- period 2 during the second half of July;
- period 3 during the second half of August;
- period 4 (optional) during the second half of September.

■ Techniques employed

■ Clearing of densely colonised sectors (only in 2011):

- use of a brushcutter to cut the plants at their base;
- work done in heavily colonised upstream sections of the Graine;
- manual uprooting in 2011 and 2012 in areas with isolated groups of plants.

■ Fate of the uprooted and cut plants

■ The stalks were broken into several pieces.

■ If no seeds, flowers or fruit had developed, the plants were deposited on the banks.

■ If seeds, flowers or fruit had developed, the plants were transported in large bags to a storage site in the town of Rochechouart.

■ The plants were subsequently transported to the incinerator in Limoges in October.

■ The same work was carried out for the other invasive alien plants along the Graine, namely *Ludwigia* spp. and *Acer negundo*.



4. *Impatiens glandulifera*.
5. Clearing with a brushcutter.
6. Uprooted and cut plants deposited on the bank.
7. Bank colonised by *Impatiens glandulifera*.



Results and costs

■ Results in 2011 and 2012

- Significant reduction in the number of uprooted *Impatiens glandulifera* plants (1 020 in 2011, 74 in 2012).
- Reduction in the number of areas colonised by the species.
- Major reduction in the quantities (all species combined) of vegetation removed (1 140 kilogrammes in 2011, 120 kg in 2012). A majority of the weight was due to *Ludwigia* spp.
- Balsam plants represented approximately 1% of the above quantities.
- The implemented technique was highly effective (assessment based on the annual maps), due notably to the vigilance of personnel during inspections along the entire river and during the work.
- Interventions are easier when colonisation is still in the early stages, but greater effort must be put into the inspections.

■ Costs

Costs for the management of invasive alien plants in 2011 and 2012.

Costs	2011	2012
Cost breakdown	Interventions : Haute Vienne : 8 671 € Charente : 12 259 € Removal: 108.88 € Legal notice: 267.68 €	Interventions : Haute Vienne : 4 933.50 € Charente : 7 534.70 € Removal: 12.92 € Legal notice: 337.75 €
Total cost	21 306.56 €	12 848.87 €
Days worked	Haute-Vienne: 14.5 days	Haute-Vienne: 7.5 days
Days worked	Charente: 20.5 days	Charente: 11.5 days
Number of workers	2	2

The legal notices correspond to announcements published in an official bulletin for public works contracts in view of selecting the company to do the work.

Outlook

- Management of *Impatiens glandulifera* and of the other invasive alien plants along the Graine will be pursued in the framework of the contract for river restoration and maintenance (extended to include 2014).
- A new contract will be signed in 2015.

Information on the project

- Transmission of monitoring data and status reports to Orenva and CBNMC (models for data-entry sheets available on the internet site of the Vienne public river-basin territorial agency).
- Articles published on the work in the local press (*Populaire du Centre* newspaper) and in municipal bulletins.
- Information sent to land owners (102 people) on the impacts of the species and on the work to be carried out.
- Organisation of training courses on how to identify and manage invasive plants by the Vienne public river-basin territorial agency for elected officials and employees managing public land and for river technicians.
- An informational brochure on management of invasive plants in the Vienne basin published on the internet site of the Vienne public river-basin territorial agency.



8- *Impatiens glandulifera*.

For more information

- Page on invasive plants on the internet site of the Vienne public river-basin territorial agency:
<http://www.eptb-vienne.fr/-Plantes-invasives-.html>.
- Internet site of Orenva:
<http://www.orenva.org/>.
- Vienne Gorre river board. No date. Report on the management of invasive alien plants. Himalayan balsam. 1 p.
- Vienne Gorre river board 2011. Report on work against invasive alien species. 3 pp.
- Vienne Gorre river board 2012. Report on work against invasive alien species. 3 pp.
- Périgord-Limousin regional nature park. 2006. Test work sites for Himalayan balsam in the Gorre basin. Report. 22 pp.

Etablissement Public
du Bassin de la Vienne

O R E N V A

