Managing groundsel bushes at the Piraillan reservoirs

**Groundsel bush**
*(Baccharis halimifolia)*

**Piraillan reservoirs**
- The reservoirs are a protected, natural site in the town of Lège-Cap Ferret (Gironde department), that have belonged to the Seaside and Lake Conservation Trust since 1997.
- The site is managed and monitored by municipal personnel from Lège-Cap Ferret.
- A management plan, proposed by the environmental research and study group, was launched in January 1999 and one objective is to control groundsel bushes.
- Contact: Marie-Catherine Chaumet (manager of the Piraillan reservoirs)
  marie-catherine.chaumet@laposte.net

**Intervention site**
- The Piraillan reservoirs are located in the town of Lège-Cap Ferret, along the coast of the Arcachon basin. The town manages the site in a partnership with the departmental council.
- The site covers a total of just over 39 hectares and is made up of:
  - a reservoir (6 hectares) with a bed of sand and mud, supplied via a lock. The vegetation on the banks consists of salt-meadow species;
  - four small islands within the reservoir, with cover comprising woody plants and bushes, with dead trees standing or fallen (3 hectares);
  - a stand of pine trees covering most of the site, including a more or less open understorey and more dense sections with thickets and fallen dead trees;
  - small hills rising up to 30 metres above sea level.
- Due to the management work on groundsel bushes, it was decided, in conjunction with the National botanical conservatory for South-west France, to make the Piraillan reservoirs a pilot site for monitoring plant dynamics.

**Disturbances and issues involved**
- The presence of groundsel bushes around the Arcachon basin was mentioned for the first time in 1891. The species has been present on the Piraillan site since the 1960s, primarily around the reservoir and on the islands. It covered a significant percentage of the surface area with individual bushes exceeding heights of 2 metres.
- The plants had a considerable impact on the site:
  - competition with native plant species resulting in the disappearance of emblematic species;
  - greater environmental uniformity;
  - closing of the landscape along the reservoir;
  - a reduction in nesting waterfowl.
Interventions
- In the framework of a management plan set up in 1997, the site manager has regularly organised interventions to eliminate groundsel bushes.
- Different techniques have been employed:
  - manual uprooting of young plants;
  - cutting the plants using a saw, shears, a brushcutter or a chainsaw, depending on the size of the bushes and the density of the cover;
  - elimination of new growth and removal of stumps using a hatchet.
- The work was done:
  - on a few areas of the site each year, but primarily on the islands and around the reservoir;
  - by one or two persons.

Work schedule and methods used from 1997 to 2012.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>09</td>
<td>Manual uprooting of young plants</td>
</tr>
<tr>
<td>1998</td>
<td>05-08</td>
<td>Manual uprooting of young plants and cutting</td>
</tr>
<tr>
<td>1999</td>
<td>05-11</td>
<td>Manual uprooting of young plants and brushcutting</td>
</tr>
<tr>
<td>2000</td>
<td>12</td>
<td>Brushcutting</td>
</tr>
<tr>
<td>2001</td>
<td>06-11</td>
<td>Manual uprooting of young plants, brushcutting of regrowth</td>
</tr>
<tr>
<td>2002</td>
<td>01-02, 04-05, 07-09, 12</td>
<td>Manual uprooting of young plants and brushcutting</td>
</tr>
<tr>
<td>2003</td>
<td>06-12</td>
<td>Manual uprooting of young plants and brushcutting</td>
</tr>
<tr>
<td>2004</td>
<td>03-04, 07-11</td>
<td>Manual uprooting of young plants and brushcutting</td>
</tr>
<tr>
<td>2005</td>
<td>01, 07-12</td>
<td>Manual uprooting, cutting and brushcutting</td>
</tr>
<tr>
<td>2006</td>
<td>02, 06, 08, 12</td>
<td>Manual uprooting of young plants and brushcutting</td>
</tr>
<tr>
<td>2007</td>
<td>01, 07, 09-11</td>
<td>Manual uprooting, cutting and brushcutting</td>
</tr>
<tr>
<td>2008</td>
<td>02, 05-12</td>
<td>Manual uprooting, cutting and brushcutting</td>
</tr>
<tr>
<td>2009</td>
<td>08-08, 08-10, 12</td>
<td>Manual uprooting and cutting</td>
</tr>
<tr>
<td>2010</td>
<td>01, 03-12</td>
<td>Cutting, tailing (removal of peduncle) and removal of stumps</td>
</tr>
<tr>
<td>2011</td>
<td>01, 04-10</td>
<td>Tailing and removal of stumps</td>
</tr>
<tr>
<td>2012</td>
<td>01, 08-10</td>
<td>Tailing and uprooting of young plants</td>
</tr>
</tbody>
</table>

Results and costs
- Results
  - The groundsel bushes were virtually eliminated thanks to regular work.
  - The landscape underwent changes:
    - development of native herbaceous and shrub species on the banks and in the reservoir;
    - in 1999, 94 different plant species were present on the site, in 2012 the number had risen to over 300 including some emblematic species (Urospermum dalechampii, Rhagadiolus rhagadiolides, Papaver dubium, Ruppia cirrhosa, Sarcocornia).

Assessment of management costs (examples)
- The work is very physical and repetitive, and requires observational capabilities when the groundsel bushes are hidden by the vegetation. The results are however highly visible and constitute an encouragement to continue the management efforts.
- In 2008, approximately 89 hours of work were devoted to the groundsel bushes and 9 hours to equipment maintenance. The total outlay amounted to 991 euros, including 775 euros for maintenance and 216 euros for fuel.
- In 2012, 18 hours of work and 191 euros were invested in the management effort.
Outlook

Regular work and monitoring to control groundsel bushes will be pursued over the entire site.

Thanks to the partnership with the National botanical conservatory for Southwest France in the framework of the DELTA programme (Plant biodiversity in the Arcachon basin and the Val de Leyre - LEADER project), following the elimination of the groundsel bushes, the Piraillan reservoirs were designated as a pilot site for monitoring plant dynamics. Regular monitoring of two plots was set up for a period of 10 years.

The objectives of the monitoring programme are to:
- understand, confirm or develop the hypotheses concerning plant dynamics during and after the work to eliminate groundsel bushes;
- assess the impact and the effectiveness of the management work on the observed plant dynamics;
- monitor the development of the groundsel bushes and of the vegetation in general;
- assist the manager in monitoring the groundsel bushes;
- monitor an alien species (e.g. Viburnum tinus) even outside of the plots;
- monitor any new species colonising the plots (Atriplex hastata, Suaeda maritima, Phragmites australis, Pucciniella maritima, etc.).

Information on the project

The conservatory has taken on the task of informing and raising awareness among managers and the general public via meetings and brochures.

During presentations by the site manager, the impact of invasive plants on biodiversity is discussed.

Meetings among the littoral protection officers are an occasion for discussions between the people managing the species.

Authors: Sandra Fernandez, Irstea and Emmanuelle Sarat (IUCN French committee).