

To provide stakeholders with the necessary support, the Biological invasions in aquatic environments (IBMA) work group was created in 2009 by Onema and Cemagref (now Irstea). Since 2014, the work group has been managed by Onema and the IUCN French committee.

The IBMA work group constitutes a novel organisation in that it mobilises an array of different stakeholders including the managers of natural areas, researchers, associations, public agencies, State services and local governments, etc. Its mission is to assist managers by summarising and making available the knowledge acquired on IAS management techniques and by developing tools to assist in management work.

It was in this context that this book, Invasive alien species in aquatic environments. Practical information and management insights, was drafted.

A number of resources (documentation, news, project feedback, etc.) are available on the dedicated internet site:

[www.gt-ibma.eu](http://www.gt-ibma.eu)



The volumes are available on a number of sites, including IBMA ([www.gt-ibma.eu](http://www.gt-ibma.eu)), Onema (<http://www.onema.fr/IMG/EV/cat7a.html>) and the IUCN French committee ([www.iucn.fr](http://www.iucn.fr)). A hard copy of each document may be requested as long as stocks last.

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# Invasive alien species in aquatic environments

Practical information and management insights

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Invasive alien species (IAS) and their impacts represent a growing concern for the managers of natural areas.

That is particularly true for aquatic environments where an array of stakeholders are now taking action. In parallel, public policies are coming into play on the national level and the European union recently adopted a new regulation in this field.

What is the status of current knowledge on biological invasions? What is the applicable legal framework and what recommendations should be made?

In the field, which species are managers attempting to address?

Which techniques are used, where and how,

and what are the objectives and the results achieved?

This document briefly outlines the contents of the new book in the *Knowledge for action* series.



## A close-up photograph of a plant branch with several dark green, oval-shaped leaves. The leaves are arranged alternately along a reddish-brown stem. Several bright yellow, five-petaled flowers are visible, some in full bloom and others as buds. The background is a plain, light yellow surface.

A total of 26 fauna and flora species are covered in 52 examples presenting management projects, drafted in conjunction with the managers.

## 1 Practical information

The **first volume** (252 pages) presents the alien species in aquatic environments in c

**Six chapters** provide a detailed outline on:

- current legislation and regulations addressing IASs on the international, European and national levels;

- the general approach to IAS management, i.e. prerequisite knowledge, prevention, monitoring and action taken;

- the existing tools available to managers, e.g. coordination of projects, lists of species, databases, platforms for information exchange and collections of feedback from management projects.

Reptiles

Photo: J. L. L.

# Red-eared slider turtle

(*Trachemys scripta elegans*)

Originated in New Rio and Central America. Imported in France up to 1997 as a pet.

## Description

- Ventrals plates along the head and neck
- Characteristic red "ear" posterior to the eye
- Shell up to 24 cm (males) and 29 cm (females) long in adults
- Dark carapace in yellow and light brown stripes in juveniles
- Yellow plastron with dark brown spots
- Average adult weight is 3.2 kilograms
- Sexual dimorphism in adult size, for males
- A longer and thicker tail
- Larger claws on the front feet
- Maximum life span approximately 30 years

## Ecology and reproduction

- Habits in many types of aquatic environments, primarily in stagnant water
- Capable of not fed for juvenile and continuous for adults
- Reproductive activity starting at an age between 2 and 8 years
- Mating in the spring and/or fall
- Females lay eggs once or twice per year, approximately a dozen eggs in the nest (4 to 6 cm long)
- Incubation for 70 to 90 days
- Neonates vary in size between 23 and 35 mm

## Documentation

- Garrat, (coord.) 2012 : Vertébrés exotiques envahissants du bassin de la Loire (hors poissons) : connaissances et expériences du Grand Océan national de la chasse et de la faune sauvage, Plan Loire Grand Océan, 128 p.
- Nguyen, C. 2012 : Les espèces animales et végétales exotiques de pollution dans les milieux aquatiques et subaquatiques - Fiche espèce envahissante Les espèces exotiques envahissantes Aquatiques-Amblypterus, 96 p.
- Pascal M., Lorysse C. et Vigne J.-D. 2006 : Invasions biologiques et exotisme: 11 000 ans d'histoire des vertébrés en France. Quae-éditions, 290 pp.

Author: Jean-Benoît Lamy

Classification	
Order	Turtles
Family	Cryptotestidae
Genus	Trachemys
Species	Trachemys scripta elegans (Linnaeus, 1758)

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The project-feedback information comprises:

- the organisation managing the project;
  - a description of the project site with maps;
  - the problems on the site and the issues at hand;
  - the intervention techniques, e.g. the selected method, each operation
- technical constraints;
- project results and budget;
  - the outlook following the project;
  - efforts to promote the project and its results;
  - available documentation and the contact person for more information.

[illegible]

The collage includes:
 

- A person in a dark suit and mask using a red tool on a tree.
- A close-up of a red and black mechanical device.
- A large, multi-segmented metal component, possibly a hydraulic cylinder.
- A yellow excavator with 'HYUNDAI' branding working in a wooded area.
- A large, flat, rectangular object, possibly a tarp or a piece of equipment, being handled by people in a wooded area.

Results **Results** Results Results

■ **Baleto E.** 2012. URB + project, Estuaries of the Basque country. Control and elimination of *Recheris heliophylla*.

Year	Videos removed (Mill)	Time spent (Hours)	Price (in euros incl. VAT)
2006	654	23.5	0.000
2010	Not available	Not available	309
2011	Not available	Not available	920
2012	70	0.5	-
2013	40	1	-
TOTAL	All based 171 days	All based 45 hours	0.000 € incl. VAT

**Information on the project**

- Management of water privatisation calls for greater communication and reliability of information on how to handle it rapidly following its establishment on a new site.
- With that in mind, a brochure on the best manual spraying technique for water printers was recently drafted so that anyone confronted with the start of a colonisation can take effective action. Intended for the general public, the brochure is available in train halls and can be viewed on the SEDG site.

- [www.beos.fr](#)
- [www.fedep.fr](#)
- Eliphan D., et rendo de l'histoire mécanique de la Trulle, Beauvois-Cher, Syndicat intercommunal Beauvois et Faurambert, protection du rivier, Aquitaine-Leslet-Cher, 20 pp.
- Syndicat d'éducation du bassin Beauvois et Syndicat intercommunal Bas Couson, 2013. Le jusse, pierre esclave envahissante : méthodologie d'arrachage manuel, 2 pp.

- [www.bassin-du-beuvron.com](http://www.bassin-du-beuvron.com)
- [www.fedepeche41.com](http://www.fedepeche41.com)
- Béguin D. et Parot I. 2013. Comptendu de l'opération test d'arrachage mécanique de jussies, Petit Étang, la Thuille, Sauvignys-en-Sologne, Loiret. Syndicat d'entretien du bassin du Beuvron et Fédération de pêche et de protection du milieu aquatique du Loiret-Cher. 20 pp.
- Syndicat d'entretien du bassin du Beuvron et Syndicat intercommunal Bas Cosson. 2013. La jussie, plante exotique envahissante : méthodologie de lutte manuelle. 2 pp.