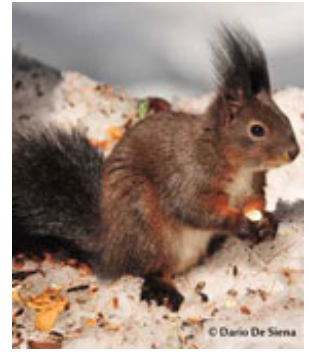




EC-SQUARE - Eradication and control of grey squirrel: actions for preservation of biodiversity in forest ecosystems

LIFE09 NAT/IT/000095



[Project description](#) [Environmental issues](#) [Beneficiaries](#) [Administrative data](#)
[Read more](#)

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Project description:

Background

Grey squirrels (*Sciurus carolinensis*) are acknowledged as an invasive alien species which has threatened the native Eurasian red squirrel (*Sciurus vulgaris*) in the British Isles and parts of northern Italy. The grey squirrel can also cause extensive damage to trees through bark-stripping, which affects re-growth and natural tree reproduction in commercial plantations and other forest ecosystems. The spread of grey squirrel in northern Italy represents a problem for the entire European continent, since from Italy the alien species is predicted to colonise surrounding countries, particularly France and Switzerland.

Objectives

The main objective of the EC-SQUARE project was to control and eradicate threats caused by grey squirrel (and other non-native squirrel species) in different socio-ecological contexts, in three different regions of northern Italy: Lombardy (Lombardia), Liguria and Piedmont (Piemonte). The aim was to produce a decision support system to identify the most efficient management strategy in each case, and to elaborate best practice guidelines for grey squirrel control and eradication. In addition, the project planned to carry out conservation actions in each region to improve habitat quality and/or connectivity of forests patches for red squirrel. Red squirrel will be reintroduced

on a site in Lombardy to establish a minimum viable population, following the removal of grey squirrels.

Results

The EC-SQUARE project controlled or eradicated grey squirrel (and other non-native squirrel species) in three regions (Lombardy, Liguria and Piedmont) in northern Italy. In the Lombardy region, the project removed alien squirrels - grey squirrel (*Sciurus carolinensis*) and also Pallas's squirrel (*Callosciurus erythraeus*) - in four macro-areas (out of eight such areas with grey squirrel); live-trapping followed by euthanasia was used to eliminate 2 200 non-native squirrels in this region. Eradication was mostly achieved in one of the macro-areas, and is an advanced stage in another area. In the Liguria region, and in particular the Genova Nervi Park, a different management strategy was agreed with stakeholders: grey squirrel capture, sterilisation and release in an isolated urban park. An almost complete removal of the grey squirrel population from Genova Nervi Park and surrounding areas was achieved, to ensure the conservation of red squirrel in the Ligurian Apennines. The management strategy adopted (capture, sterilisation and release) was an innovative approach, not previously attempted for non-native squirrels; it could be useful in similar situations in other regions and countries. In the Piedmont region, only grey squirrel control activities were possible, since the area used by grey squirrel covers more than 2 000 km² (the most extensive area for grey squirrel in Italy).

The project removed grey squirrel from a total woodland area of about 3 000 ha in the three regions. Re-colonisation by red squirrel was already observed in some sites by the end of the project. Conservation actions conducted to encourage red squirrel re-colonisation included tree and shrub planting, and the use of supplementary food. Moreover, the project developed specific guidelines for the management of forest habitats, to improve the habitat quality and to increase woodland connectivity for red squirrel. These guidelines were implemented in two regional parks. The project also produced guidelines for the management of red squirrel populations in urban parks. Strong opposition to the project was initially encountered from animal rights activists and some local communities. This delayed project actions, particularly in the regions of Liguria and Piedmont. Therefore, awareness-raising activities contributed greatly to the success of the project. The project strongly contributed to increasing public awareness about invasive alien species and forest biodiversity problems, in particular explaining grey and red squirrel competition and forest ecosystem dynamics. The project organised awareness-raising actions in schools, and meetings with the general public and stakeholders in the three target regions. Dissemination tools included information panels, posters, brochures, an education kit and a film on DVD. The project was featured in the national press, on television, social networks and the project website. The project also established specific structures for the observation of red squirrel in the three regions, which will continue to be used for education purposes.

Thanks to the project, a national trade ban on three non-native squirrel species, *Sciurus carolinensis*, *Callosciurus erythraeus* and the fox squirrel (*Sciurus niger*), was approved in 2012. It prohibits the trade, rearing and ownership of the above-mentioned species. This was the first time in Italy that the trade of a

vertebrate species was banned for anything other than sanitary reasons. The project produced risk assessments for *Sciurus carolinensis* and *Callosciurus erythraeus* at the European level, which act as reference documents for EU Member States. The demonstration actions carried out in the three regions of northern Italy are relevant to the spread and control of non-native squirrels at the international level.

In terms of policy, the project represents a concrete implementation of the European Regulation on the prevention and management of the introduction and spread of invasive alien species (EC 1143/2014). Moreover, project staff contributed to the development of this new European Regulation, which entered into force in January 2015. It includes grey squirrel on the list of invasive alien species of Union concern, obliging Member State to eradicate these species within months of their detection in newly-colonised areas.

Previously, in November 2008, the Standing Committee of the Bern Convention had opened a case file against Italy for falling to act in limiting the spread of the grey squirrel after three recommendations (no. 78 of 1999 on the conservation of red squirrel in Italy, no. 114 of 2005 on the control of grey squirrel and other alien squirrels in Europe, and no. 123 of 2007 on limiting the dispersal of grey squirrel in Italy and other contracting parties). The project was developed to give a reply to these recommendations.

Further information on the project can be found in the project's layman report and After-LIFE Conservation Plan (see "Read more" section).

[Top](#)

Environmental issues addressed:

Themes

Biodiversity issues - Invasive species

Keywords

forest ecosystem, decision making support, biodiversity

Target EU Legislation

- Nature protection and Biodiversity
- COM(2011) 244 final "Our life insurance, our natural capital: an EU biodiversity strategy to 2020 ...
- Regulation 1143/2014 - Prevention and management of the introduction and spread of invasive alien ...

Target Habitat types

- 02 - Specific (i.e.for technical reasons or specific issue)

Natura 2000 sites

Not applicable

[Top](#)

Beneficiaries:

Coordinator	Regione Lombardia
Type of organisation	Regional authority
Description	The Lombardy (Lombardia) Region's Environmental Quality Department is responsible for managing Natura 2000 sites in northern Italy.
Partners	Piemonte Region, Italy Liguria Region, Italy

[Top](#)

Administrative data:

Project reference	LIFE09 NAT/IT/000095
Duration	01-SEP-2010 to 31-MAR -2015
Total budget	1,930,000.00 €
EU contribution	890,000.00 €
Project location	Piemonte(Italia) Liguria(Italia) Lombardia(Italia)

[Top](#)

Read more:

Project web site	Project's website
Project web site - 2	Project's Facebook page
Publication: After-LIFE Communication Plan	Title: After-LIFE Communication Plan No of pages: 20

- Publication: Guidelines-Manual Title: "Action C5 : Artificial supplementary feeding of red squirrel = Sperimentazione dei feeding hopper per l'alimentazione supplementare dello scoiattolo comune in aree di simpatia con lo scoiattolo grigio" (2.38 MB) Author: Simone Lioy, Chiara Ferraccini, Peter Mazzoglio, . Editor: Università di Torino No of pages: 20
- Publication: Guidelines-Manual Title: "Guidelines for management of red squirrel populations in urban parks = Linee guida per la gestione dello scoiattolo rosso nei parchi urbani" (1.8 MB) Author: Andrea Balduzzi, Emanuele Fasce, Andrea Garrone, . Year: 2015 Editor: Università di Genova No of pages: 9
- Publication: Guidelines-Manual Title: "Best-practice guidelines to carry out and implement squirrel population eradication through neutering = Materiali per implementare un progetto di Eradicazione di scoiattoli alloctoni attraverso la Sterilizzazione chirurgica" (1.32 MB) Author: Andrea Balduzzi, Andrea Marsan, Sandro Bertolino, Year: 2015 Editor: Rosso Scoiattolo No of pages: 26
- Publication: Guidelines-Manual Title: "Guida al riconoscimento delle specie di scoiattoli presenti in Italia" (2.16 MB) Author: Veronique Adriaens, Sandro Bertolino, Dario Capizz Editor: Rosso Scoiattolo No of pages: 13
- Publication: Layman report Title: Layman report No of pages: 16
- Publication: Technical report Title: Project's Final technical report Year: 2015 Editor: Regione Lombardia Contact person Mr. Giorgio Bonal No of pages: 8
- Slides Presentation Title: "The conservation of the red squirrel in Italy : progetto LIFE+ EC-Square rossoscoiattolo" (7.42 MB) Author: Bertolino Sandro Editor: Università di Torino No of pages: 48
- Slides Presentation Title: "Management of grey squirrel in Umbria : conservation of red squirrel and preventing loss of biodiversity in Apennines" (2.56 MB) Author: Piero Genovesi, Valentina La Morgia, Daniele Paolo Year: 2015 Editor: ISPRA No of pages: 20

[Top](#)

[Project description](#) [Environmental issues](#) [Beneficiaries](#) [Administrative data](#)
[Read more](#)