

habitat fragmentation due to transportation infrastructure



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Dirección General para la
Biodiversidad. Ministerio de
Medio Ambiente.

Infra Eco Network Europe (IENE)

Suggestions or contributions to the bulletin

All comments and information you
might have on the different
sections of the bulletin are
welcome. Please send all your
comments and suggestions to the
following address:
habitats.transporte@mma.es

PRESENTATION

At a time when professional life is filled by dozens of coinciding meetings, which respond to multiple initiatives, one has to decide between keeping up with the constant requests for information and keeping up with the work load lying on the desk. It is truly satisfying to see that an idea, which was conceived by some as outlandish, has made it through one of these meetings and has finally been consolidated by a strict process, which has ended up in an almost essential work line.

I believe that those of us who have been lucky enough to be involved in a situation of this nature, such as "Habitat Fragmentation Due to Transportation Infrastructure", should be grateful for the existence of mechanisms often considered by us as bureaucratic nonsense. This has proven helpful in transforming an abstract concept into applied actions on preventative and corrective measures.

In September 1995, the International Habitat Fragmentation and Infrastructure Conference took place in Maastricht. The outcome of this conference was that the Dutch Ministry of Transport, Public Works and Water Management created a working group called *Infra Eco Network Europe* (IENE). This group was made up of experts and European institutions and was aimed at exchanging and sharing the knowledge and experiences gathered on this subject.

The COST Program, which is a European Commission programme for scientific and technical cooperation, facilitated the constitution of a specific action called Action COST 341. The only requirement necessary for registering on this programme was a writing petition. This made it easy for countries with little resources to be able to set a target and achieve it. Between 1998 to 2003, 16 European countries contributed to raising public awareness of this issue, understanding the problem and offering solutions to the politicians responsible and the technicians involved. This was done on a European, national and regional level. Furthermore, the institutions have been motivated to be actively involved in the issue, and are now promoting working points in their own countries.

In June 1999, the Spanish working group was set up by the transport and environmental administrations of each autonomic region and the state. It continues promoting new objectives, keeping the enthusiasm of joining efforts coming from different approaches alive and sharing the knowledge, criteria and techniques with those who are willing to provide solutions to the problem.

This bulletin aims to be an easy and practical toolkit that enables us to contact all those people interested in habitat fragmentation due to transportation infrastructure, and to gather and distribute all the information that we can provide on the subject.

Thank you very much for your contribution.

ACTION PRODUCTS COST 341

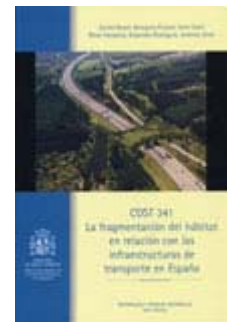
Action COST 341. Habitat Fragmentation Due to Transportation Infrastructure was developed between 1998 and 2003. It was promoted by the *Infra Eco Network Europe* (IENE) organisation, which at present is managing the distribution of the products made during the Action. These are the following:

- ***COST 341. Habitat fragmentation due to transportation infrastructures. The European review.***

Progress review on the subject in Europe, which integrates all the information contributed by the different countries registered. This was produced as a limited edition paper report, which has already run out. Now an electronic version is available and can be obtained, since it is included on the CD-ROM, as one of the Action products ([see below](#)).

- ***COST 341. Habitat fragmentation in relation to the transportation infrastructure in Spain***

The document follows the structure agreed by all participating countries in the project. It presents the current network of roads and the one that will be put in place before 2010, and reviews the effects that this infrastructure has on the habitat and different species. The review also synthesizes the applied measures that are being used in Spain in order to prevent or reduce the impact on habitat loss and habitat disturbance, barrier effect, etc. One of the chapters deals with road safety and wildlife collisions with vehicles. The book has been published by the Dirección General para la Biodiversidad del Ministerio de Medio Ambiente and is included in a technical series on Nature and National Parks.



- ***Wildlife and traffic. A European handbook for identifying conflicts and designing solutions***

This handbook describes the different methods that could be applied to reduce the impact caused by transportation infrastructure on habitat fragmentation. An outstanding feature of this handbook is the description of the different kinds of wildlife passages and other existing methods that could be applied to prevent wildlife from crossing roads and to reduce the barrier effect of roads. There is also information on how to integrate roads into the landscape, as well as information on corrective actions, evaluation and monitoring programs. The handbook has been written by a team of authors from 6 different European countries, and it is specifically aimed at people involved in the design, construction and maintenance of roads, and technicians involved in the environmental impact evaluation



At the moment the handbook is only available in English (it can be requested [here](#)).

· ***CD-ROM that gathers all documents produced during the Action***

This CD-ROM has all the previously mentioned documents with the exception of the review on *Habitat Fragmentation in Relation to the Transportation Infrastructure in Spain*. It also includes national reports undertaken in Belgium, the Czech Republic, France, Denmark, Hungary, the Netherlands, Norway, Rumania, Switzerland and Great Britain, a glossary, and a link to a database with a bibliography on European products. The CD-ROM can be requested at [IENE entity](#), and costs 15 Euros (delivery expenses included)

Carme Rosell
Action COST 341 Coordinator
MINUARTIA, Estudis Ambientals

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DATABASE

Along with the COST project development, a database was made which integrates the published and non-published bibliographies produced by the participating countries in the project. Amongst other subjects, these publications deal with the effects of habitat fragmentation, wildlife passages and the results of the effectiveness of the measures. This database has a browser, and is available for consultation online. It has 250 references on bibliographies produced in Spain.

Another aspect is, a newly designed module on corrective measures. It gathers information on wildlife passages, smell barriers and other applied measures to prevent wild animal collisions. This module is still in the development stage.

Databases are being updated periodically. If you wish to send information to be incorporated into the database, please complete the forms on [bibliography](#) and on [preventive and corrective measures](#), and send it to the following address: habitats.transporte@mma.es

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WORKING GROUP

During the development of the Action COST, a working group was created. The members of this group were transport and nature conservation administrations from the autonomic regions and the state. It was coordinated by the Dirección General para la Biodiversidad del Ministerio de Medio Ambiente, which meets once or twice a year. Amongst its aims are to facilitate the exchange of information between the different administrations and to promote the implementation of good practice on the design, construction and maintenance of roads, as well as reducing its impacts on fauna and flora, and on its habitats. On the 16th of March, the 7th meeting took place in Madrid. It was attended by 33 people from 13 different administrations. Besides the presentation of the Action COST products, a working commission was set up which is preparing a technical training course on wildlife passages, which will include a catalogue on these kinds of structures.

A list of the Working Group members can be downloaded at the

NEWS

The first permanent barriers for amphibians have been installed in the Comunidad de Madrid.

The Consejería de Medio Ambiente has installed the first permanent barriers for amphibians in the Comunidad de Madrid. They have been placed on the M-628 road, on the Cuenca Alta del Manzanares Regional Park. Here, a high number of amphibians (especially *Bufo bufo*) were being run over as they crossed on their way to other areas of water in the Camorchos, where they reproduce. These new barriers have been built by the ACO Polymers Company, and will replace all the temporal plastic barriers that the SCV started to install in 1995.



Alberto Álvarez

These barriers prevent the amphibians from getting onto the road, and lead them to a nearby transversal drainage that works as a hydraulic infrastructure and as a wildlife passage tunnel at the same time.

Carlos López García
Sociedad para la Conservación de los Vertebrados (SCV)

Sytems to reduce wild boar and fallow deer collisions at the Aiguamolls de l'Empordà Natural Park.

There has been a rise in the number of vehicle collisions with wild boar (causing 90% of the incidents) and fallow deer along the road that connects Figueres with Roses, which cross one of the Park's Integral Reserves, and the road that connects Sant Pere Pescador with Castelló d'Empúries. The increase in the number of registered incidents could be explained by different factors, one being the expansion of the population of these two species. Another factor could be the increase in the number of vehicles that use those roads and the increase in speed of the vehicles due to improvements made on the roads. From August 2003, the park's management team together with the park rangers, have been installing smell barriers and monitoring their performance. So far, the results have been very positive, since there have been no registered incidents in the areas where the barriers have been placed. Meanwhile, proposals have been made to the road managers which include the reinforcement of existing barriers and the building of wildlife passages.

Josep Espigulé, director of the Aiguamolls de l'Empordà Natural Park
Departament de Medi Ambient i Habitatge. Generalitat de Catalunya

Monitoring the effectiveness of the measures of highways permeability project

The Departamento de Ecología of the Universidad Autónoma de Madrid undertook a study project during 2000 and 2002, which was funded by the DGCEA of the Ministerio de Medio Ambiente through CEDE. The aim of the project was to monitor the effectiveness of the measures of highway permeability on lineal infrastructures for wildlife. The study was based on the Rías Baixas (A-52) and Camino de Santiago (A-231) highways.



CEDEX (Ministerio de Fomento)/Universidad

315 transversal structures of different kinds including specific wildlife passages were monitored. This was done by using footprints and trail analysis, and video and photographic detection systems designed and adapted specifically.

Autónoma de Madrid

From the results (about 800 photographs and 3500 trails identified), one can conclude that transversal structures are being used by most of the wildlife groups that are in the area. However, some species such as wild boar, roe deer and gennet seemed less inclined to use them. Other species such as wolves, showed greater adaptation to using the existing paths than what was initially expected. It was also seen that some hedgehogs used the existing paths regularly, but this made up for a low percentage of specimens over the whole population of hedgehogs that lived in the area.

María Teresa Manzanares
Dirección General de Calidad y Evaluación Ambiental
Ministerio de Medio Ambiente

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PUBLICATIONS

Lince ibérico. Bases para su reintroducción en las sierras de Cadiz, by Alejandro Rodríguez, Miguel Delibes and Francisco Palomares. Seville, 2003. Edited by Gestión de Infraestructuras de Andalucía (GIASA), Consejería de Obras Públicas y Transportes de la Junta de Andalucía, within the framework of the Compensatory Measures Program, which was developed as a result of the construction of the Jerez-Los Barrios highway.

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EVENTS

II Congreso Internacional de Ingeniería Civil, Territorio y Medio Ambiente. 22nd-24th of September, 2004. Santiago de Compostela. Organised by: Environmental Commission, Colegio de Ingenieros de Caminos, Canales y Puertos.

More information at: <http://www.ciccp.es>

VII Congreso Nacional de Medio Ambiente. 22nd-26th of November, 2004. Madrid. Organised by: Fundación CONAMA.

More information at: <http://www.conama.es/>

Already took place:

A Landscape Perspective on Mediterranean Vertebrate Ecology. 25th-26th of March, 2004. Montpellier (France). Organised by: Centre National de la Recherche Scientifique (CNRS). It includes a chapter on ecological connectivity.

The programme can be viewed at:

<http://www.cefe.cnrs-mop.fr/wwwadmi>

Jornadas internacionales sobre Infraestructuras Viarias y Espacios Naturales Protegidos. 27th-30th of January, 2004. Seville. Organised by: Consejería de Obras Públicas y Transporte. Consejería de Medio Ambiente. Junta de Andalucía.

The programme and the conclusions can be viewed at:

<http://www.giasa.com/>

Habitat Fragmentation Due to Transport Infrastructure & Presentation of COST Action 341 Products. 13th-15th of November, 2003. Brussels (Belgium). Organised by: Infra Eco Network Europe

The programme and the abstracts can be viewed at:
<http://www.iene.info/files/Brussels2003/MAIN.pdf>

The International Conference on Ecology & Transportation (ICOET). 24th-29th of August, 2003. Lake Placid (New York). Organised by: Centre for Transportation and the Environment.

The programme of the congress can be viewed at:

http://www.itre.ncsu.edu/cte/icoet/ICOET_2003/03proceedings.html

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- This publication comes out every six months within the framework of the Fragmentation Habitat Due to Transportation Infrastructure Project. It is promoted by the Dirección General para la Biodiversidad del Medio Ambiente. MINUARTIA, *Estudis Ambientals* is undertaking the technical administration of the project.
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