



LIFE08 ENV/IT/000413



LIFE+ INHABIT project

After-LIFE Communication Plan



Zygote haemorrhoidalis
(VANDER LINDEN, 1825)

Local hydro-morphology, habitat and RBMPs:
new measures to improve ecological quality
in South European rivers and lakes

www.life-inhabit.it

The INHABIT project



INHABIT is a EU co-funded LIFE+ project aiming at integrating habitat information into practical measures to improve the reliability of WFD (EC/2000/60) River Basin Management Plans (RBMPs) in rivers and lakes in South Europe.

The project ran from 1st April 2010 to 31th October 2013

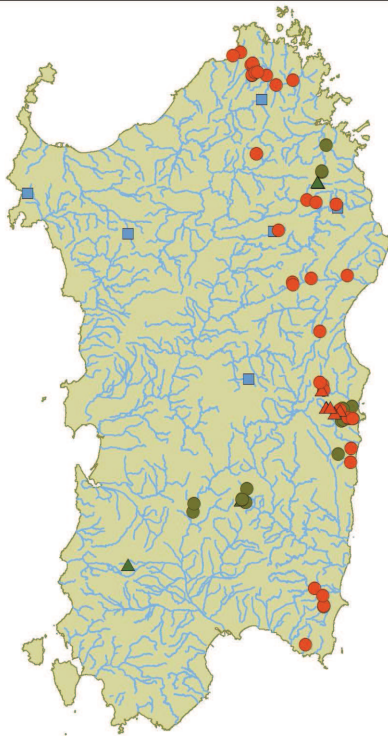
With reference to the process of WFD implementation, INHABIT project focused on habitat features as key elements to understand functioning and ecological status of freshwater ecosystems. The project is focused on relations between habitat features, nutrients removal/uptake and biota (macroinvertebrates, aquatic flora, fishes). Through the quantification of the influence of habitat on biological communities, INHABIT has suggested some useful elements to evaluate the efficiency of existing restoration measures. The project is structured in groups of actions, each dedicated to a topic dealing with demonstrative or

innovative issues. INHABIT is both a demonstration and innovation project, disclosing methods and approaches recently tested and not commonly used in Italy. It also puts into practice new scientific concepts recently developed from research activities.

Study areas - Sardinia

Investigated sites

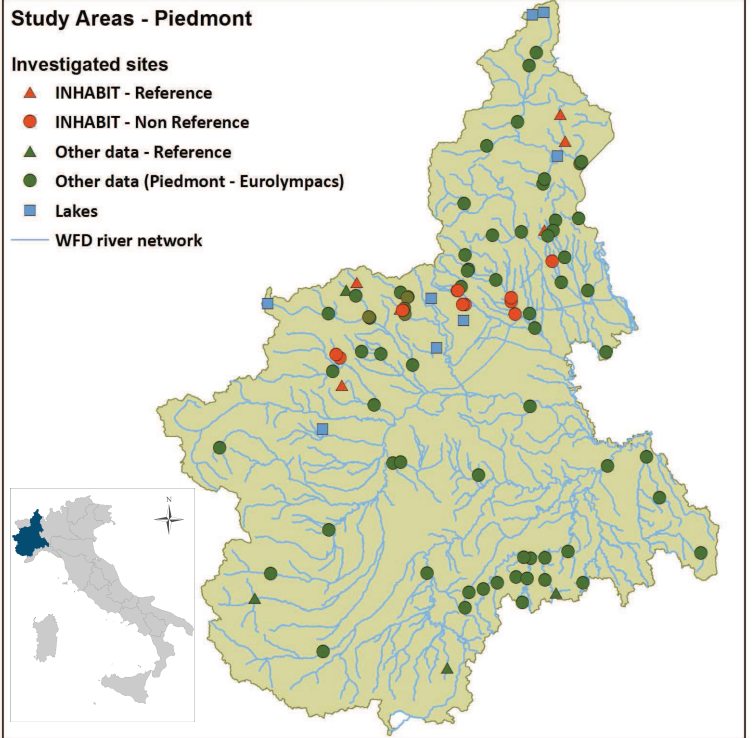
- ▲ INHABIT - Reference
- INHABIT - Non Reference
- ▲ Other data - Reference
- Other data - Non Reference
- Lakes
- WFD river network



Study Areas - Piedmont

Investigated sites

- ▲ INHABIT - Reference
- INHABIT - Non Reference
- ▲ Other data - Reference
- Other data (Piedmont - Eurolympacs)
- Lakes
- WFD river network



Study areas

Rivers and lakes in two Italian regions, covering a wide range of environmental and habitat features.

Piedmont: alpine and Po plain rivers; natural lakes and artificial lakes.

Sardinia: perennial and temporary rivers; mainly artificial lakes (resevoirs) .

Main planned actions and results

- Analysis of approaches and methods used in the preparation of selected RBMPs in South Europe.
- Simultaneous collection of habitat, physio-chemical and biological data in about 40 river stretches in Sardinia, 18 river stretches in Piedmont (in different seasons), 7 lake sites in Piedmont and 6 lake sites in Sardinia.
- Validation of 15 river reference sites (Piedmont and Sardinia) for the WFD.
- Biological validation of official river typology in the study areas.
- Validation of biological classification methods for lakes and verification of their potential use in artificial basins.
- Quantification of nutrients retention metrics (e.g. uptake length) and identification of main hydro-morphological and habitat features influencing self depuration capacity in rivers.
- Estimation of relative importance of nutrients (phosphorous and nitrogen) on vegetal biocoenoses in lakes.
- Quantification of potential effects of habitat variability on classification uncertainty and accuracy.
- Confirmation of the crucial role played by lentic-lotic character in structuring benthic communities in rivers. The use of information provided by this descriptor can support a more accurate definition of reference conditions (including a site-specific correction) and the quantification of the impact due to water abstraction.
- Emphasizing the need for harmonization among WFD and Habitat Directive (92/43/CEE).
- Suggestion of quality objectives for habitat condition and measures for reliable RBMP implementation.





Future use of the INHABIT project results

Environmental authorities have been contacted during several phases of the project; a number of them (e.g. ARPA Veneto, APPA Bolzano) showed strong interest in applying results attained by INHABIT project in their territory. Such authorities will potentially dedicate specific resources (e.g. in terms of money, person months or data) to put into practice INHABIT approaches and results.

Outside LIFE impact

The actions having a major influence on INHABIT (and the other way round) are related to institutional activities dealing with WFD application and implementation. All Italian authorities are making effort to apply the new methods, specifically developed for WFD implementation, and getting results useful to validate these methods. In particular, important open issues are related to:

- validation of reference sites and conditions;
- validation of methods in term of analysis of the relationship between habitat and biological elements;
- quantification of anthropogenic pressures;
- quantification of efficacy of restoration measures;
- assessment of uncertainty and accuracy linked to classification.

The results obtained within INHABIT may assist addressing the above mentioned issues, both at National and South European level (please have a look at the INHABIT Guidelines: Del I3d4!). Meanwhile, some of the approaches proposed at National level for WFD implementation were applied and tested within INHABIT project (e.g. reference site validation process).

Furthermore, INHABIT developed and finalized three important tools for WFD application: the Manual of the CARAVAGGIO method, for survey and description of river habitats, and two software, MacrOper.ICM, to classify river ecological status based on macroinvertebrates, and CARAssoft, as complement to the CARAVAGGIO Manual.

At international level, the approach developed in INHABIT has been applied in the Mediterranean context e.g. in Cyprus rivers. Some results of the project have been directly transferred to European groups (e.g. CEN WG) and will be presented at upcoming WFD CIS events.



Sampling activities in Sardinia

The communication strategy

The following actions have been carried out in order to perform an effective communication strategy

Communication materials

Several communication materials such as mouse pads, pens, pencils, block notes, placemats, have been produced and distributed during project workshops and other events. They were customized with LIFE+ and INHABIT project logos and project pictures. A roll-up and a leaflet were created for dissemination events. A billboard with information and images of project activities has been placed at CNR-IRSA office in Brugherio (MB, Italy).

Web-site

A project web-site in English and Italian has been launched since the first project months. Through this website it is possible to access all the information related to the project, including a detailed description of actions, results obtained, events and other projects linked to INHABIT and involving partners of the consortium. Moreover, in the dissemination section, it is possible to download project deliverables, publications and presentations. Specific softwares for river and lakes study, such as Macro-ICM and CARASoft, are available for free downloading after a registration in the dedicated section. www.life-inhabit.it

Organization of National and International workshops and dissemination events

Two national workshops and three international workshops were organized by beneficiaries to discuss project approaches, verify their applicability outside INHABIT and to disseminate project results. The first national workshop took place in Sardinia and was hosted by Sardinia Region. It involved local authorities and agencies interested in management of rivers basins and water protection. The second national workshop was organized together with la Sapienza University in Rome. Both workshops involved representatives of Italian Ministry of the Environment and Protection of Land and Sea. The international workshops took place from November 2012 to February 2013 in Barcelona, Spain, at Barcelona University, in Vienna, Austria, at Ministry for Environment and in Nicosia, Cyprus, at The Agricultural Research Institute (ARI), hosted by the Water Development Department of the Ministry of Agriculture, Natural Resources and Environment of the Republic of Cyprus. A final conference, open to the large public, was organized on October 2013 hosted at National Research Council headquarter in Milan.

Training courses and seminars

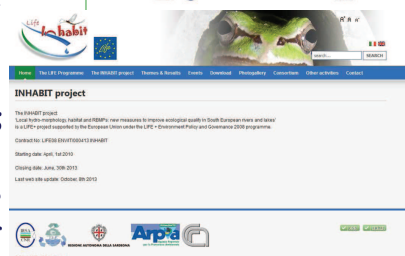
CNR-IRSA and CNR-ISE organized training courses and seminars on INHABIT activities specifically targeted to University students and Environment Protection Agencies.

Participation to national and international conferences

The INHABIT project was presented during several conferences and congresses across Italy and Europe such as SITE Congresses, CEN workshops and Open days to celebrate the 20th anniversary of LIFE Program.

Scientific publications and articles

Publications and articles targeted to a scientific audience were produced to disseminate project results and uploaded on INHABIT web-site.



First INHABIT National workshop in Cagliari at Sardinia Region



INHABIT seminars and training courses

INHABIT National and International workshops and dissemination events organized/participated by project beneficiaries, during and after project duration

Date	Place	Meetings and workshops
15 October 2010	Asti (Italy)	Meeting for presenting the INHABIT project to ARPA Piemonte departments.
29 October 2010	Pallanza (Italy)	Meeting with ARPA technicians (ARPA Piemonte, Torino, Asti, Biella and VCO) for illustrating the LHS method.
3 November 2010	Como (Italy)	Presentation at the University of Insubria of a Phd related to INHABIT project.
22-24 November 2010	Cagliari	Kick-off meeting INHABIT.
30 March 2011	Bari (Italy)	Presentation of INHABIT project to ARPA Puglia.
9 November 2011	Como (Italy)	Presentation of PhD 2 nd year: Macro invertebrates as ecological quality indicators in according to the WFD 2000/60.
19 March 2012	Viterbo (Italy)	Presentation of PhD 1 st year. Habitat variability and benthic invertebrate community in Sardinian rivers.
17 November 2012	Barcelona (Spain)	First INHABIT international workshop at Barcelona University: <i>The importance of habitat features and local hydro-morphology for the definition of ecological status in Mediterranean rivers.</i>
11 December 2012	Cagliari (Italy)	First INHABIT National workshop at Sardinia Region – Title “ <i>Criticità e aspetti chiave nella classificazione dello stato ecologico</i> ”
15 February 2013	Vienna (Austria)	Second INHABIT international workshop at Austrian Ministry for Environment.
28 February 2013	Nicosia (Cyprus)	Third INHABIT international workshop hosted by WDD at The Agricultural Research Institute (ARI): <i>The importance of habitat features and local hydro-morphology for the definition of ecological status in Mediterranean rivers.</i>
27 March 2013	Rome (Italy)	Second INHABIT National workshop at La Sapienza University: <i>Centralità dell'habitat nell'interpretazione dello stato ecologico nel contesto della WFD</i> .
21 March 2013	Bologna (Italy)	Workshop for presentation results and methods INHABIT Project to Italian Agencies for Environment Protection.
29 and 30 October 2013	Milan (Italy)	INHABIT final conference

Training courses and seminars

Date	Place	Training courses and seminars
14 February 2011	Sassari (Italy)	Seminar: " <i>Sampling activity on macro invertebrate of some Sardinian artificial lakes: organization, needs and critical aspects</i> " at Sassari University
2-5 October 2012	Milan (Italy)	Presentation of INHABIT results and concepts in a course for University students dedicated to acquire the key aspects of hydro-morphology and habitat evaluation in relation to the WFD. Title of the Event ' <i>Introduzione al metodo CARAVAGGIO</i> '.
12 December 2012	Sassari (Italy)	Presentation of INHABIT activities at Sassari University
22 January 2013 / 20-21 January 2014	Rome (Italy)	Presentation of INHABIT activities at La Sapienza University - Eco-hydrology class.

Presentation of INHABIT project at conferences and congresses

Date	Place	Conferences and congresses
26-30 September 2010	Rome (Italy) Castiglione	Participation to the XX SITE Congress.
1-2 December 2010	del Lago. Perugia (Italy) Meinz	Congress "For the future of Lake Trasimeno".
25-27 January 2011	(Germany)	First LHS results on Italian lakes. The contribution of the INHABIT project to CEN committee.
9 June 2011	Rome (Italy)	Presentation of the contribution of the LIFE+ INHABIT project to the Italian assessment system.
4-5 October 2011	Palermo (Italy)	Presentation of Life-INHABIT project: first results on lake macro invertebrates during SITE Congress.
25 May 2012	Brescia (Italy)	Presentation of INHABIT project at 20 th anniversary of LIFE Programme celebration at University of Brescia.
5 June 2012	Milan (Italy)	Presentation of INHABIT project at Open day LIFE-Lombardia at Municipality of Milan.
9 November 2012	Rimini (Italy)	Presentation of selected INHABIT results (river typology and reference conditions) to ECOMONDO congress.
15-16 November 2012	Peterborough (UK)	Presentation of INHABIT project at CEN workshop.
16-18 September 2013	Ancona (Italy)	Participation to XXIII SITE Congress to promote INHABIT project with a poster entitled " <i>Usa del suolo e comunità macrobentonica in fiumi mediterranei: un semplice approccio per monitoraggi a scala di tratto</i> ".

National and international workshops, conferences, training courses and seminars to disseminate INHABIT project results





Hyla arborea (Linnaeus 1758)

Do we have innovative elements to quantify effects of water abstraction on biological communities in rivers? YES!



Heptagenia longicauda
(Stephens 1835)



Potamanthus luteus (Linnaeus 1767)

Future dissemination plan

- ◆ **Promoting the project in scientific conferences, congresses and national and international working groups**

In Italy:

National conferences and workshops will be considered for possible participation (e.g. SITE, UZI, AIOL, CIRF and CISBA events). Moreover, CNR-IRSA and CNR-ISE will continue organizing public events in which, jointly with the presentation of Institutional activities, INHABIT results are divulgated.

In Europe:

International conferences and workshops foreseeing the publication of proceedings will be evaluated for possible participation (e.g. SEFs, Limnological societies organizing events, EGU).

Outside Europe:

Possible participation to International conferences (e.g. Joint Aquatic Sciences Meeting—JASM; AGU)

Deadline: periodical, once organization is announced.

Sources: CNR personnel.

Preparation of support documents for these events Power Point presentations, Publications and articles.

- ◆ **Dissemination products**

Beneficiaries will distribute dissemination and communication products among local authorities, regional agencies for environment, research centers in Italy and Europe, private companies, associations and universities.

Deadline: periodical. INHABIT partners have several INHABIT dissemination products to distribute for promoting their applied research activities.

Sources: CNR personnel and CNR partners.

- ◆ **Project website**

The INHABIT project web-site will be maintained active and updated with news and information. Moreover a page on INHABIT project will be created and uploaded on CNR-IRSA web-site.

Deadline: periodical updates

Sources: CNR personnel and external assistance

- ◆ **Lectures and seminars**

It is foreseen the participation to seminars and lessons given at Universities, (e.g. Sapienza, Rome; Università della Tuscia, Viterbo; Milano and Varese University)

◆ Publications and articles in scientific magazines

Results gained will make possible the preparation of 4-10 scientific papers to be submitted to international journals. A selection of papers already prepared and included in project Deliverables will be published in National journals (e.g. Notiziario IRSA).

Deadline: periodically

Sources: CNR personnel leading

◆ Training courses

Organization of training courses for the application of the CARAVAGGIO method has been finalised within the INHABIT project and other events are planned for 2014. Short courses to outline the principles at the basis of the systems and methods in use for classifying ecological status, based on INHABIT results and Guidelines, will be structured.

Deadline: periodically

Sources: CNR personnel, CNR partners and external assistance

◆ Specific dissemination and communication activity targeted to INHABIT stakeholders

In relation to the role of CNR Institutes, ARPA Piedmont and Regione Sardegna in the National context for the implementation of the WFD, there is a strong, common interest to present and discuss the INHABIT approaches and results with competent water authorities (e.g. other regions, MATTM, ISPRA, Environment Agencies, catchment authorities). On this regard, CNR-IRSA and CNR-ISE are participating and will participate in the formal contexts related to at National and International levels, and during these events INHABIT results will be presented. Moreover, CNR Institutes will organize dedicated events to take direct contact with stakeholders in order to present INHABIT results, tools and approaches.



Training course on invertebrates—
Lombardia



Training course on CARAVAGGIO, river
habitat survey method

LIFE+ INHABIT stakeholders

Here a list of Institutions and organizations interested in WFD issues, ecological status classification, and management of water bodies

- Ministero dell'Ambiente e della Tutela del Territorio e del Mare (MATTM)
- Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA)
- Other National Institutions
- Italian Regions
- Regional and Provincial Environment Agencies (ARPA and APPA)
- Private companies involved in environmental analysis and research
- Non-profit organizations for environment protection
- Other local institutions and authorities
- Foreign Institutions
- Italian and European Universities
- Joint Research Centre (JRC)
- CIS-ECOSTAT



This After-LIFE Communication Plan was prepared under the LIFE+ INHABIT project (LIFE08 ENV/IT/000413) financed by the European Community's Financial Instrument for Environment LIFE.

Contacts

Andrea Buffagni
CNR-IRSA, Water Research Institute
Via del Mulino, 19
20861 Brugherio MB Italy

Tel ++39 039 21.694.1
Fax ++39 039 200.46.92
E-mail: inhabit@life-inhabit.it

For more information, visit INHABIT project web-site

www.life-inhabit.it



INHABIT team

CNR-IRSA, Istituto di Ricerca sulle Acque

Andrea Buffagni, Raffaella Balestrini, Stefania Erba, Marcello Cazzola, Laura Terranova, Giorgio Pace, Elena Recchia, Laura Marziali, Franco Salerno, Fabrizio Stefani, Carlo Andrea Delconte, Luigi Viganò, Claudio Roscioli, Daniele Demartini, Cristina Arese, Alessandro Lotti, Adolfo De Paolis, Daniele Biazi, Francesco Arena, Luisa Riggi, Gianni Tartari, Annamaria De Girolamo, Raffaele Giordano, Giuseppe Tullio, Luigina Baschetti, Giuseppe Mininni, Romano Pagnotta.

CNR-ISE, Istituto di Ricerca sugli Ecosistemi

Marzia Ciampittiello, Aldo Marchetto, Giuseppe Morabito, Nicoletta Riccardi, Iorio Cerutti, Paolo Sala, Silvia Zaupa, Pietro Volta, Angela Boggero, Silvana Caretti, Alessandro Oggioni, Gabriele Tartari, Marina Ferrara, Michela Rogora.

ARPA Piemonte

Elio Sesia, Paola Botta, Andrea Bottino, Fulvia Castino, Marinella Fenocchio, Mauro Ferrando, Teo Ferrero, Antonietta Fiorenza, Lorenzo Giordano, Arianna Nicola, Maria Pizzone, Monica Ponzzone, Mara Raviola, Matilde Simoniello, Maria Enza Tumminelli, Claudia Vanzetti.

Regione Autonoma della Sardegna

Rita Casula, Martina Coni, Roberto Coni, Giuliana Erbi, Elisabetta Massidda, Mariano Pintus, Simona Spanu, Giulia Vacca, Stefania Zaccolo, Maria Gabriella Mulas.

INHABIT main collaboration

Università degli Studi della Tuscia (DEB)

Carlo Belfiore, Roberta Tenchini

Università della Cantabria

José Barquín Ortiz

Università di Sassari (DIPNET)

Antonella Luglié

Ente Acque della Sardegna (ENAS)

Maria Antonietta Dessena

 Consiglio Nazionale delle Ricerche



REGIONE AUTONOMA DELLA SARDEGNA



ENTE ACQUE SARDEGNA