



Travelling through ecosystems and biodiversity: Long-term ecological research for citizens

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S.It.E. - Società Italiana di Ecologia





The context

ECOSYSTEM AND BIODIVERSITY



Long Term Ecological Research network (LTER-Italy) www.lteritalia.it
LTER-Europe www.lter-europe.net
LTER-International www.ilternet.edu/



E-Science European Infrastructure for Biodiversity
and Ecosystem Research
<http://www.servicecentrelifewatch.eu/home>

LTER-Italy sites:

- IT01 - Apennines - High elevation Ecosystems ●
- IT02 - Forests of the Alps ●
- IT03 - Forests of the Apennines ●
- IT04 - Mediterranean Forests ●
- IT05 - Lowland Forests ●
- IT06 - Pianosa Island ●
- IT07 - Lagoons of Po River Delta ●
- IT08 - Southern Alpine Lakes ●
- IT09 - Mountain Lakes ●
- IT10 - Lake Ecosystems of Sardinia ●
- IT11 - Himalayan Lakes* ●
- IT12 - Northern Adriatic Sea ●
- IT13 - Gulf of Naples ●
- IT14 - Marine ecosystems of Sardinia ●
- IT15 - Ligurian Sea ●
- IT16 - Lagoon of Venice ●
- IT17 - Antarctic Research Stations* ●
- IT18 - Castelporziano Reserve ●
- IT19 - Western Alps (High Elevation) ●
- IT20 - Italian Coastal Dunes ●
- IT21 - Lake Trasimeno ●
- IT22 - Mar Piccolo of Taranto ●
- IT23 - Gran Paradiso National Park ●
- IT24 - Lagoons of Salento ●
- IT25 - Val Mazia ●

**25 LTER parent sites
with 80 research sites**

Eco-domains:

33 terrestrial ●

23 freshwater ●

24 marine and transitional waters ●

* extraterritorial sites



The LTER-Italy sites are representative of the main ecosystem types of our country. LTER-Italy provides ecological data series on a broad range of relevant biological and ecological issues, with a guarantee of continuity and scientific rigor, to capture and analyze changes that occur in ecosystems over time.

LTER-Italy involves the main national Public research and monitoring Institutions and Universities



MOTIVATION

WHAT IS LTER-ITALY DOING TO COMMUNICATE THE EXISTENCE, AIMS AND ACTIVITIES OF THE NETWORK AT A WIDE AUDIENCE?

- ✓ Need to **fill the gap of communication**, making people aware of the **socio-ecological** relevance of LTER sites and of their biodiversity, increase the awareness on **key environmental problems**
- ✓ Need to change the **quality of science communication** (not only “transmission” of scientific contents but overcome separation and activate empathy)

Public Participation in Scientific Research (PPSR)





THE INITIATIVE - CAMMINI

In 2015 LTER researchers started a process of informal public science communication, through **walking and cycling (kayaking, etc..) together with citizens along itineraries connecting a number of LTER sites**

A sort of laic “Camino de Santiago” of ecological research where scientists become a kind of storytellers on the road





CAMMINI - 2015 and 2016

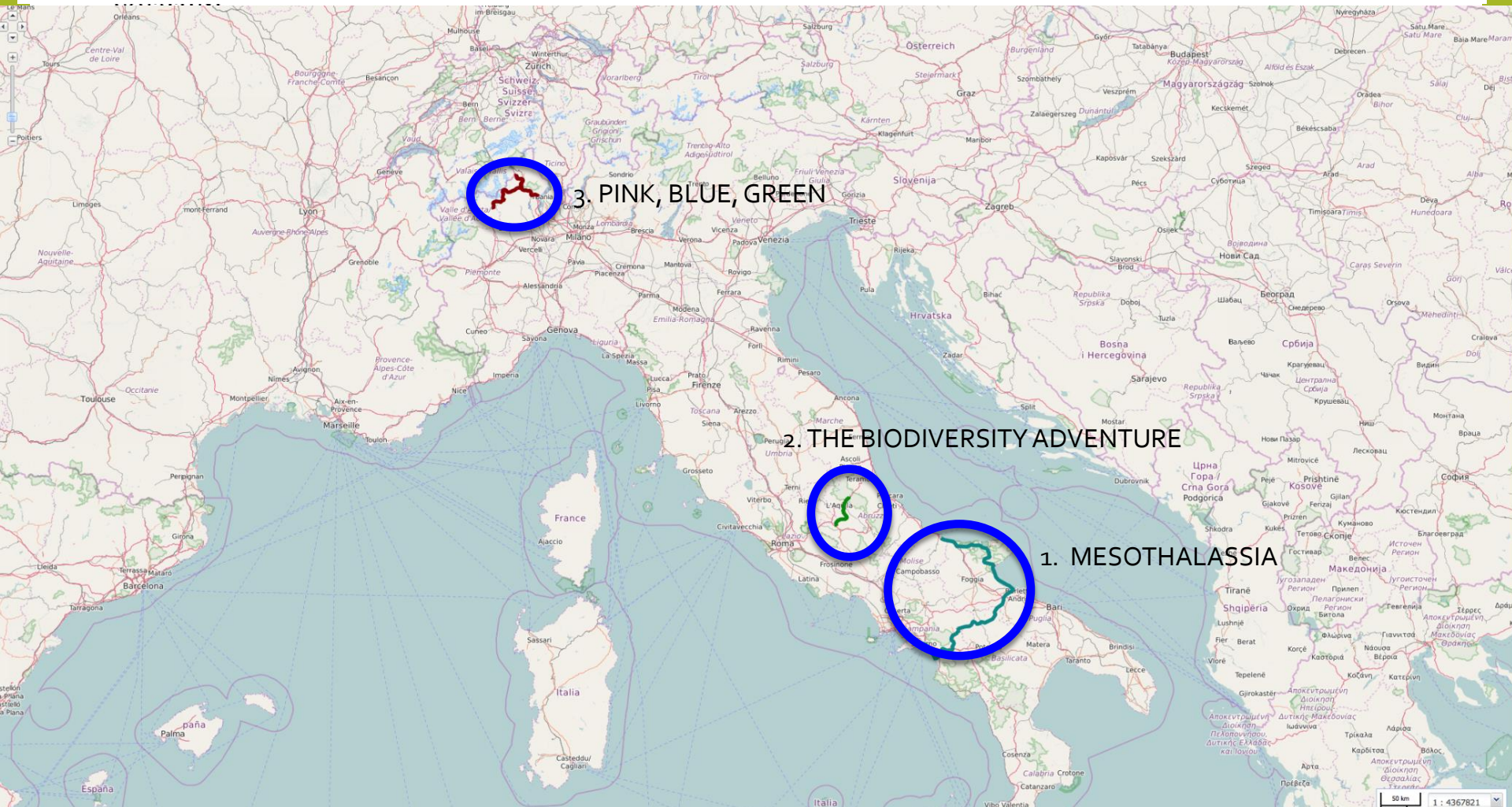
KEY PLAYERS

7 and 9 LTER-Italy sites,
more than 20 researchers,
10 and 15 institutions,
3 projects/initiatives,
2 scientific societies,
more than 30 partners and sponsors for each trail

3 and 4 TRAILS

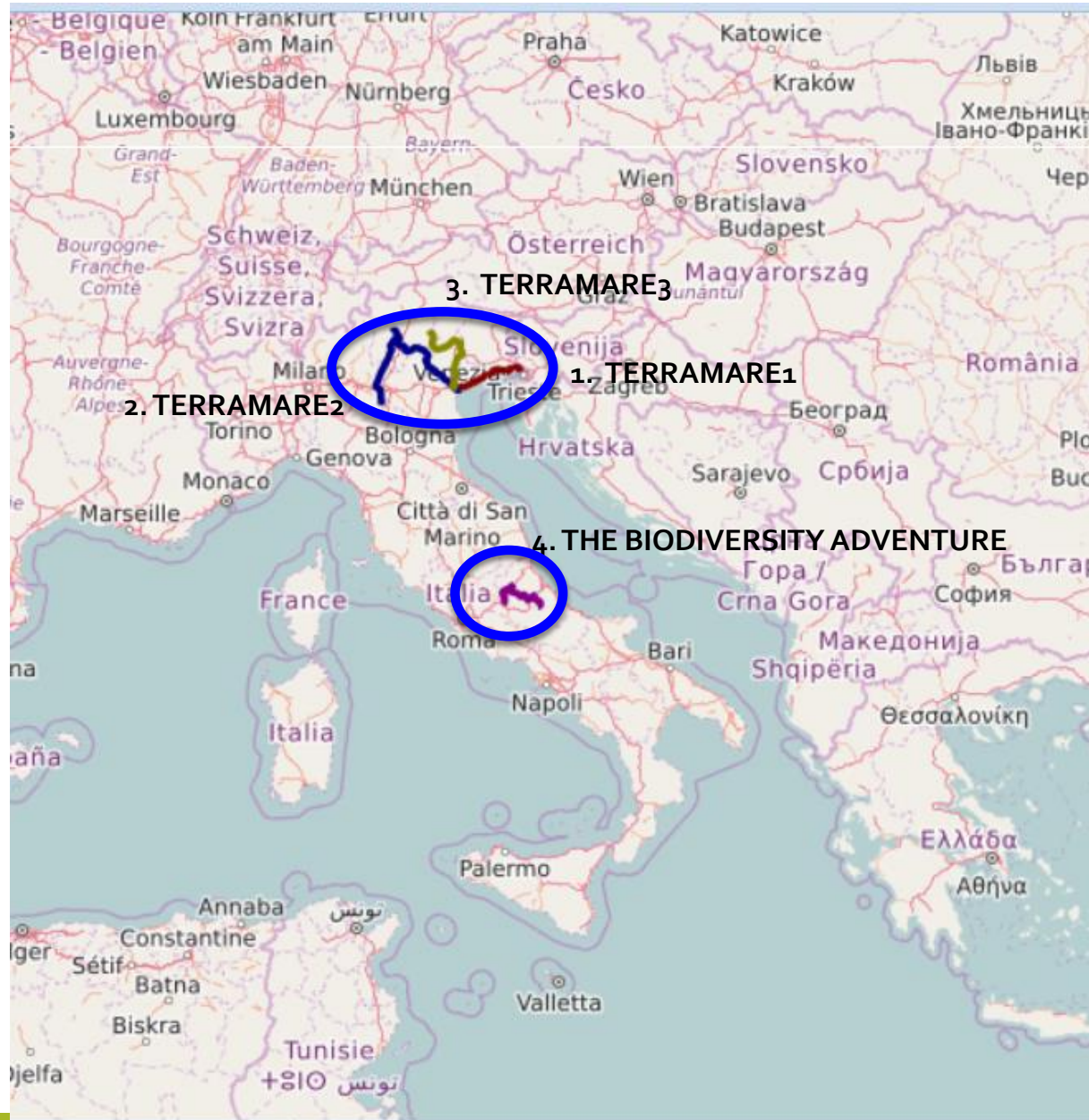


CAMMINI 2015



CAMMINI 2016

CAMMINI



RESULTS...

The Mesothalassia Bike-Tour: (Re)Discovering Water by Riding With Scientists

Domenico D'Alieio

A short prelude, single of blue

If you have been online in the air, your work will not be lost but in where they should be. Now put the foundations under them

—Henry David Thoreau

While looking at the empty Art page of my PC, waiting to write this article, one of my favorite questions explodes out of my brain. The answer probably would have been the world: the world of the world. As a scientist, I must put everything back in connection with reality. And I admit—it is always a hard task.

I am an aquatic ecologist and I study plankton, the invisible ensemble of microscopic plants and animals that make the world grow. Yes, many of the world's multitudes are unknown to plankton's existence. The sharp contrast between my knowledge of the wonder of nature and the lack of awareness by the general public has driven me away since I was a young PhD student when I tried—not very successfully—to explain to my hundred-year-old grandpa what I was actually studying.

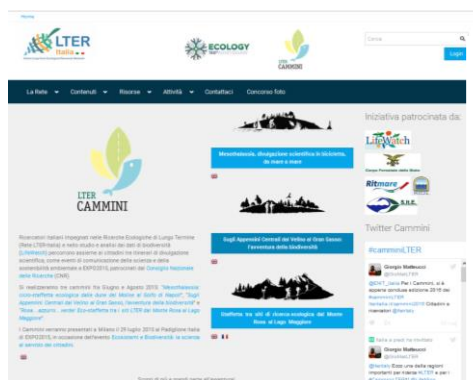
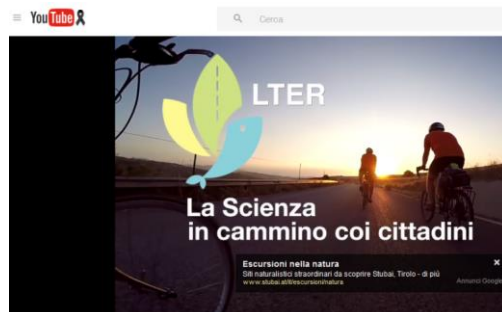
We all belong to a multifaceted living system in which even the smallest components have a role in keeping it alive: a living system where "biodiversity" is essential to our existence and persistence on Earth (e.g., Vuk 2005). Unfortunately, in the present complex and deeply entangled societies, we



Photo by Roberto Invernizzi

(Domenico) are so profoundly engaged to our own business, interests, jobs, needs, and desires that our, say, "primordial ecological common sense" is dramatically falling apart. Put simply, we (Domenico) are forgetting nature and our natural origins. For instance, we (Domenico) look at plankton as part of the food web, not the food of OUR food. Yet, concerning our own development with our humanity could be what helps us bring nature to the masses.

The content: how to communicate science and to whom? Hope and deeper awareness in our view of the future, in this beginning new millennium, the actual role nature plays in our society is to maintain those nature-provided resources to industry or basic goods to humanity? In this context, ecological and economic interests collide, leading to conflict. Clashing goals of non-governmental organizations and trade



Camminare il Tempo (tema: "Comunità")

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← La Scienza si muove

Un'iniziativa originale ed utile

La Scienza cammina, l'esperienza della Rete Lter Italia

La ricerca ecologica di lungo termine studia, attraverso l'osservazione regolare e continua di "siti sentinella", i cambiamenti degli ecosistemi, alla scala della durata delle nostre vite, di quella dei nostri figli e nipoti. Lo scopo è di osservare e comprendere i funzionamenti dei sistemi ecologici e distinguere i "cambiamenti naturali" da quelli che possono essere dovuti dall'uomo, a scale locali o globali.



Fig. 1. Riva, Azzurro...verdi Eco-staffetta tra i siti Lter dal Monte Rosa al Lago Maggiore (pagina 2015)

Considerazioni finali sulla spedizione di divulgazione scientifica Terramare

1045 letture

E' trascorsa una settimana da "Terramare" - il racconto del cambiamento, tra foreste, laghi e mare" e scriviamo questo articolo a mo' di rapporto finale, per trarne un po' di conclusioni ma anche per colmare eventuali lacune nella narrazione, realizzata attraverso articoli scritti e pubblicati regolarmente, mirando alla contemporaneità tra vicende occorse, racconto "consegnato" e vostra lettura.

La prima considerazione che facciamo è che Terramare è stata una vera e propria spedizione, al di là del titolo, anche un poco provocatorio, dato a questa rubrica. Una spedizione fatta da scienziati, educatori, reporter, informatori, scrittori di viaggio, guide di bicicletta, un furgone di supporto, e tanti ciclisti curiosi di apprezzare la scienza attraverso la bicicletta.

Per noi ricercatori non è stato agevole lasciare la scrittura di articoli "peer-reviewed" e adottare nuovi canoni comunicativi, per esempio diversi da presentazioni powerpoint rivolte ai nostri "pari". Nella settimana di Terramare, abbiamo cercato di raccontare on the road la scienza che facciamo nei nostri laboratori: a ruota che abbiamo visto fare: nei siti che



Domenico D'Alieio

Ecologia acquatica ed oceanografia

Scienze della Terra

Environmen to salute

Intelligenza ed ecologia

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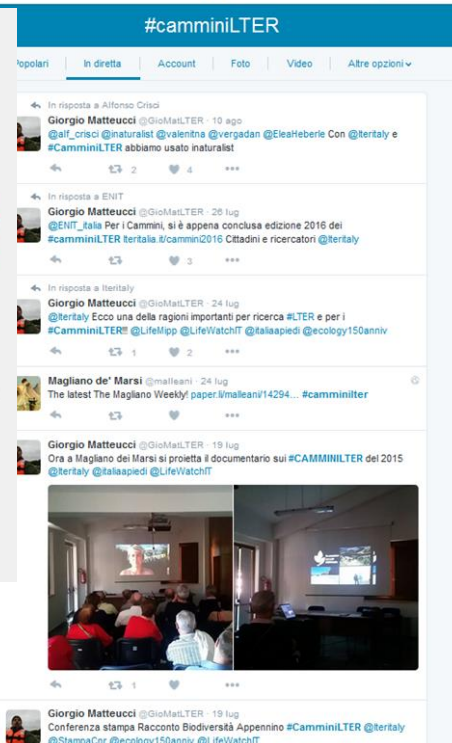
Intelligenza ed ecologia

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Intelligenza ed ecologia



RESULTS...the impact on scientists



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Angela.MPG



Ale (1).MPG



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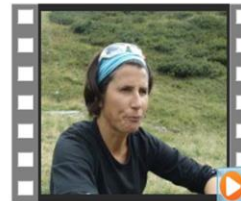
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Analysis on qualitative video-interviews with the scientists and other participants and on the analysis of formal and informal material



Three main themes:

- ✓ Beyond deficit to dialogue
- ✓ Sharing identity and community
- ✓ Sensorial experience and emotions

CAMMINI 2017

focus on Public engagement

1. Sea Futuring Tours: Immaginare il futuro del mare a Napoli e a Taranto nel 2040

The Sea Futuring Tours is an activity of public engagement based on an “experiential” mode of engaging, noticing and anticipating the future

semi-guided walking tours



re-imagining the future





2. Ecologia di lungo termine, un gioco per grandi e piccini



3. CAMMINI aims at stimulating **Citizen Science** within LTER Italy

During the trails, a set of tools for the collection of scientific data are made available to the citizens, which are able to use them on smartphones and tablets.

Volunteer Geographic Informations Apps (VGI Apps)



CAMMINI 2017



Biodiversità in azione sull'Appennino
20-23 luglio
Dal Gran Sasso alla Majella



**Antropica - Ecosistemi, risorse ambientali
e impatto dell'uomo**
30 settembre - 7 ottobre
Dal Golfo di Napoli al Mar Piccolo di Taranto



The future...

CAMMINI crossed the national boundaries, becoming in 2016 the International initiative "**TRAIL**", selected and launched by the **International Long-Term Ecological Research Network (ILTER)**.



ILTER 1st Open Science Meeting 2016 - Skukuza, South Africa
NEW INITIATIVES - New global scientific initiatives of ILTER

A group of people, some on horseback, are silhouetted against a hazy, overcast sky. They are standing on a dark, rocky, and hilly terrain. The overall scene is misty and atmospheric.

THANKS FOR ATTENTION!!

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.. ALSO ON BEHALF OF MANY OTHER COLLEAGUES INVOLVED SINCE 2015 IN THIS ADVENTURE!