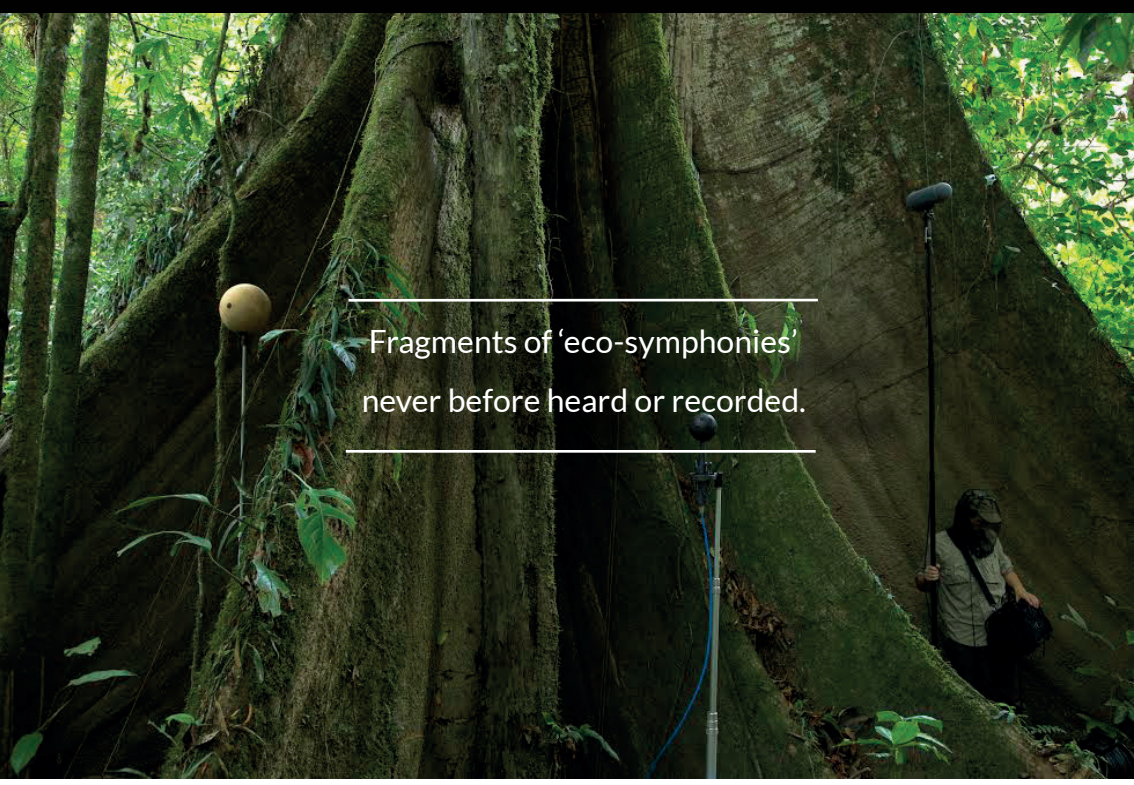
FRAGMENTS OF EXTINCTION

THE SONIC HERITAGE OF ECOSYSTEMS

A science-based interdisciplinary project on primary rainforest biodiversity



Fragments of 'eco-symphonies'
never before heard or recorded.

MISSION

Fragments of Extinction is a long-term project dedicated to preserving and sharing samples of the acoustic heritage of the world's most biodiverse ecosystems, now critically endangered by climate change and deforestation.

FIELD RESEARCH

Grounded in a detailed archive of sound portraits from the planet's most important hotspots for biodiversity - the remote primary rainforests of the Amazonia, Africa and Borneo - collected for the first time with cutting-edge, high-definition, space-preservative recording technologies.

OUTCOME

To provide scientific evidence of primary soundscape organization. To document these rapidly vanishing ecosystems for the analysis of the scientists of today and for generations to come. To offer public access to sonic ecosystems through specifically designed 3D-sound installations. To foster understanding of the acoustic heritage of the remaining undisturbed habitats, the biodiversity crisis and the 'Sixth Mass Extinction,' currently underway.

ECO-ACOUSTIC THEATRE

Patented in 2013 by David Monacchi, the Eco-acoustic Theatre is a high-tech, scalable, geodesic device conceived for museums, scientific and artistic venues. A 3D full-sphere system reproduces periphonic audio, paired with real-time visual spectrograms of the soundscape as it unfolds. Envisioned as a "temple of sound", the Eco-acoustic Theatre is designed to produce an immersive, educational experience of the intelligent sound of ecosystems.

The theatre creates a virtual space, in which to reconnect with real nature - a journey through time into the oldest ecosystems on Earth.

Inside the venue, the public enters a sequence of 3 different sonic experiences:

1) Immersive - pristine nature
2) Educational - explained nature
3) Creative - integrated nature

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is an interdisciplinary, non-profit organization that brings together ecology, sound engineering and exhibition design to produce immersive educational installations aimed at increasing scientific knowledge and public awareness of the acoustic biodiversity of the planet's last remaining undisturbed ecosystems.

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CURRENT COLLABORATIONS

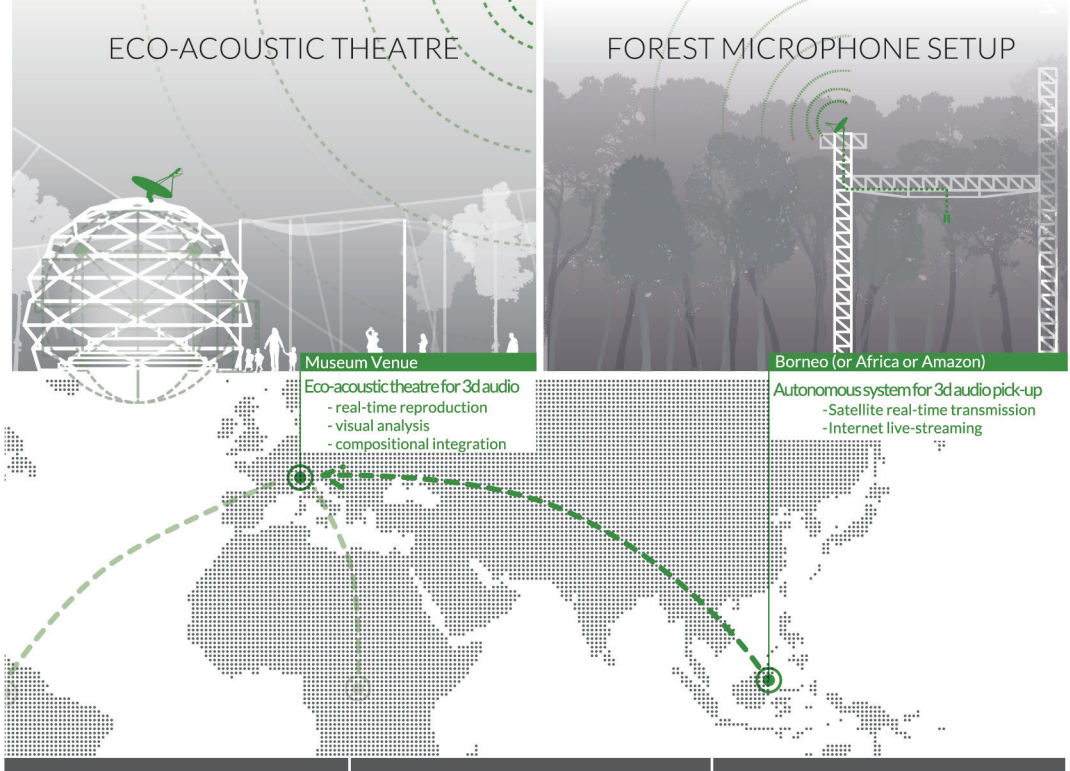
Technological Innovation:
Conservatory "G.Rossini" of Pesaro (IT) – **LEMS, SPACE**
University of Southampton (UK) – Institute of Sound and Vibration Research **ISVR** (BBC Audio Research Partner)
University of Music and Performing Arts Graz (A) – Inst. of Electronic Music and Acoustics **IEM**
Sonus Audio Services Srl – Mestieri Uniti Consortium (IT)
MH Acoustics Llc (US)
Stanford University (US) – Center for Computer Research in Music and Acoustics **CCRMA**
University of California, Berkeley (US) – Center for New Music and Audio Technologies **CNMAT**

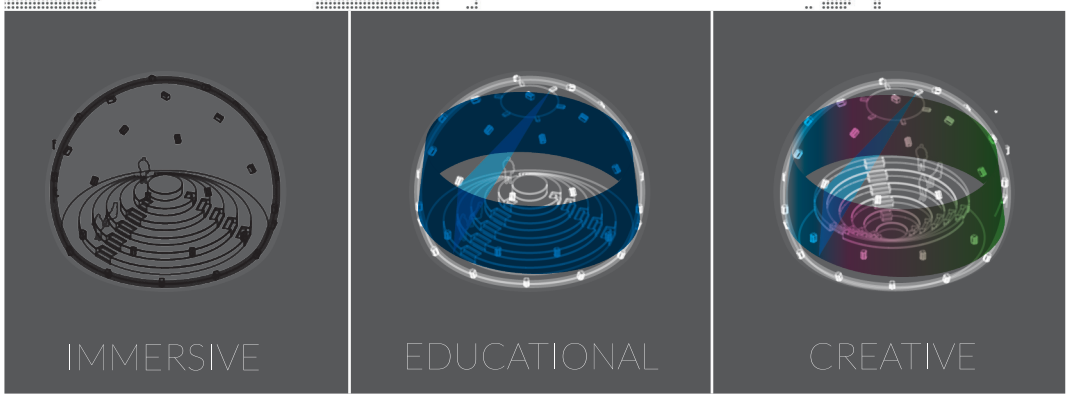
Eco-acoustics Research:
International Society of Ecoacoustics **ISE** (Paris – International)
University of Urbino (IT) – Department of Basic Sciences and Foundations
University of Plymouth (UK) – Planetary Collegium at **T-Node**
Universiti Brunei Darussalam (BR) – Institute for Biodiversity and Environmental Research

Art and Science Networks:
Ear to the Earth (USA-International)
World Forum for Acoustic Ecology (International)
Global Sustainable Soundscape Network (USA)
ECSITE – The European network of science centers and museums (Belgium-International)
ICCROM – SOIMA (Sound and Image Collection Conservation) Program

www.fragmentsofextinction.org

graphics by Pippo Marino





The sound environment is streamed in real-time from one chosen equatorial forest hotspot.

Absolute darkness augments the impression of being present within a living ecosystem.

Outcome: Full aural reconstruction of an ecosystem, experienced as naturally occurring in all its fragile equilibrium.

Soundscape recordings are digitally edited and explored (featuring three programs from three ecoregions).

Spectrogram video projections reveal and explain the network of inter-specific and intra-specific communication (niches configuration).

Outcome: Opportunity for the audience to access the organic structure of the sound environment.

Soundscape recordings are integrated with sensor-driven sound synthesis.

Spectrogram video projections become a performative canvas for eco-acoustic compositions.

Outcome: Dynamic interplay between a performer and the ecosystem, as metaphor for interspecies coexistence.

The *Eco-acoustic Theatre* (patent 2013) is available in different configurations: mobile or permanent, for rental or purchase.

Eco-acoustic Theatre construction and delivery is operated by Spheral Srl, Sonus Srl, Mestieri Uniti Consortium and a network of specialized companies.

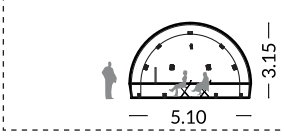
The theatre is a scalable, custom-made venue: from 8.5 m to 24 m in diameter, with concave, flat or convex terraces.

The elevated acoustic insulation of the structure (soundproofing), with its silent air conditioning system, permits both interior and exterior installations.

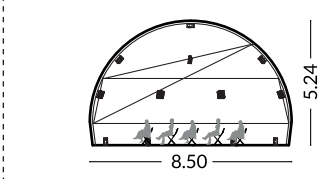
Engineered for easy and intuitive use by museum operators; automatic self diagnosis and remote control of the audio system ensures prompt resolution of any technical issues. Remote upload of sound content allows for maximum flexibility in scheduling the Theatre's eco-acoustic programming.

SPATIAL OPTIONS

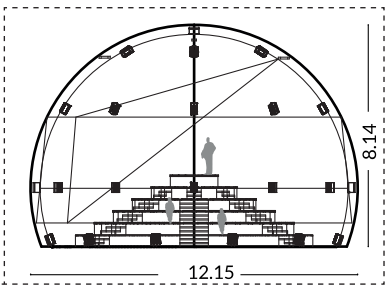
DEMO structure
Dimensions: 5.1 m x 3.15 m
6 seats



8.5-meter THEATRE
Dimensions: 8.5 m x 5.24 m
32 seats



12-meter THEATRE
Dimensions: 12.15 m x 8.14 m
90 seats



Full-periphonic Theatre at Conservatory "G. Rossini", Pesaro

'SPACE'
SOUNDSCAPE PROJECTION AMBISONIC CONTROL ENGINE
CONSERVATORIO ROSSINI

(control room, production and post-production studio for the project *Fragments of Extinction*)

theatre video projection of real-time spectrograms, displaying the eco-acoustic anatomy of habitats and species composition