



Fire Ecology Across Boundaries

Connecting Science and Management

October 4-7, 2022

Florence, Italy & Online everywhere

Program Guide



UNIVERSITÀ
DEGLI STUDI
FIRENZE
DAGRI
DIPARTIMENTO DI
SCIENZE E TECNOLOGIE
AGRICOLE, ALIMENTARI,
AMBIENTALI E FORESTALI



Content

3	Benvenuti!
4	Organizers and Local Partners
6	Committees
7	Program
37	Venues
39	Fieldtrips
41	Sponsors

Benvenuti!

It is our pleasure to welcome you to the 'Fire Ecology Across Boundaries: Connecting Science and Management' Conference. The idea for this event began in 2017 and grew from small group discussions to an organizing and program committee of 24 people from all over the world. And after 2 years of postponing due to COVID-19, we are so happy to be here with you and ready for an amazing event!

During the next four days, we hope you have a rewarding experience and make the most of the plenary sessions, panel discussions, oral and poster presentations, workshops, and field trips. We have outstanding international speakers, a wide range of topics and, above all, your valued participation—all this in the inspiring and beautiful city of Florence.

This conference is a great opportunity for networking, either in-person or virtually. While the organization of a hybrid conference is challenging, the benefits are far-reaching. This is truly a global event for the wildfire community, and the recorded sessions make it a timeless event as well. We hope you gain unprecedented knowledge and new connections to develop the vanguard wildland fire knowledge needed to face the challenges ahead.

Many thanks to our committees, local partners, speakers, volunteers, and attendees!

AFE and PCF

Organizers

Organizers and Local Partners

Organizers



Association for Fire Ecology

An international organization of professionals dedicated to improving the knowledge and use of fire in land management through science and education. Our members are scientists, educators, students, managers, practitioners, policymakers, and interested citizens helping to shape the emerging profession and growing field of fire ecology. www.fireecology.org



Pau Costa Foundation (PCF)

PCF was founded in 2011 with the ambition to become an international platform on forest fire management, as well as an instrument to investigate, train, and disseminate on fire ecology and wildland fire management.

PCF has been working with and for the forest fire community to enlarge the knowledge exchange platform in many countries around the world.

www.paucostafoundation.org

Local Partners

REGIONE
TOSCANA



Regione Toscana

The Region of Tuscany has exclusive competence in forest fire-fighting and, therefore, in forecasting, prevention and active combat activities,

The regional operational machine put in place to deal with forest fires over the years has allowed for timely intervention and concentration of forces, so much so that the performance achieved places Tuscany at the forefront among Italian regions. All operational personnel receive specific training at the regional centre, La Pineta, in the Sienese municipality of Monticiano, the only one in Italy dedicated exclusively to forest fire-fighting training. The Region of Tuscany, invests in prevention and self-protection activities, promoting a series of initiatives throughout the territory that allow the emergency approach to be overcome in favour of a preventive vision of risk based on scientific and in-depth methods of analysis.

www.regione.toscana.it



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Università Degli Studi Firenze

The University of Florence is one of the largest organizations for research and higher education in Italy, with over 1700 tenured teaching staff and researchers, over 1600 permanent technical/administrative staff and language assistants and over 55 thousand students enrolled.

The Department "Scienze e Tecnologie Agrarie, Alimentari, Ambientali e Forestali - DAGRI" (Department of Agriculture, Food, Environment and Forestry) has the mission of developing knowledge and expertise that contributes to quality of life and sustainable growth, based on biological natural resources. The DAGRI inherits the long tradition of the University of Florence in the forest field. www.dagri.unifi.it

Committees

Organizing Committee

- **Núria Prat**, Pau Costa Foundation, Spain (Conference Chair)
- **Francisco Seijo**, Instituto de Empresa, Spain (Program Co-Chair)
- **David Martín**, Pau Costa Foundation, Spain (Program Co-Chair)
- **Irene Cacciatore**, Regione Toscana, Italy
- **Gianluca Calvani**, Regione Toscana, Italy
- **Ariadna Goenaga**, Pau Costa Foundation, Spain
- **Anna Fàbrega**, Pau Costa Foundation, Spain
- **Cristiano Foderi**, University of Florence, Italy
- **Enrico Marchi**, University of Florence, Italy
- **Annie Oxarart**, Association for Fire Ecology, USA
- **Morgan Varner**, Tall Timbers, USA
- **Giacomo Sbaragli**, La Pineta di Tocchi Training Center, Italy

Program Committee

- **Ernesto Alvarado**, University of Washington, USA
- **Esther Ekua Amoako**, University for Development Studies, Ghana
- **Dolors Armenteras**, Colombia National University, Columbia
- **Davide Ascoli**, Università degli Studi di Torino, Italy
- **Claire Belcher**, University of Exeter, UK
- **Bibiana Bilbao**, Universidad Simon Bolivar, Caracas, Venezuela
- **Marc Castellnou**, Pau Costa Foundation and Catalan Fire Service, Spain
- **Guillermo Defossé**, CONICET – Research center on Esquel de Montaña y Estepa Patagónica, Argentina
- **Christopher Dicus**, California Polytechnic State University, USA
- **Paulo Fernandes**, University of Trás-os-Montes and Alto Douro (UTAD), Portugal
- **Anne Ganteaume**, INRAE, France
- **Jesús San Miguel**, Join Research Center, Belgium

Program

Tuesday, 4 October 2022

Morning Sessions	
CEST	Santa Apollonia, Auditorium (200p)
8:10 am	Registration Open
9:00 am - 11:00 am	<p>Panel Discussion <i>Future wildfire risk scenarios addressing the expected impacts by the Green Deal related to building resilience into European landscapes.</i> Organizer: Eduard Plana, Forest Science and Technology Centre of Catalonia (CTFC)</p>
11:00 am - 11:30 am	Break
11:30 am - 12:30 pm	<p>Oral Presentations: Landscape management and local community engagement Moderator: Alexander Held, Senior Expert, EFI Resilience Programme</p> <ul style="list-style-type: none">• <i>Prioritizing Post-fire Restoration in Chaparral Shrublands in Southern California</i>, by Emma Underwood (University of California, Davis)• <i>Burned area severity estimation with deep learning and Sentinel-2</i>, by Luca Barco (LINKS Foundation)• <i>SE FireMap: Understanding Fire Impacts on the Landscape</i>, by Joe Noble (Tall Timbers Research)• <i>How boundary spanning organizations increase social and ecological resilience to wildfire</i>, by Christina Restaino (University of Nevada, Reno)• <i>Scale Mismatches in Fire Management and Attendant Policy Solutions</i>, by Courtney Schultz (Colorado State University)

Santa Apollonia, Poccetti Room (40 p)

Piazza dell'Unità, Room 114 (25 p)

4-hr Workshop: Pre-registration required
Collaborative, cross-boundary spatial fire planning for a changing fire environment
Organizer: Christopher J Dunn and Andy McEvoy, Oregon State University

4-hr Workshop: Pre-registration required
What 'musts' should education consider when raising awareness about wildfires
Organizer: Celia Conde and Xènia Juan, Pau Costa Foundation

Workshop Cont'd: *Collaborative, cross-boundary spatial fire planning for a changing fire environment*

Workshop Cont'd: *What 'musts' should education consider when raising awareness about wildfires*

Morning Sessions

CEST	Santa Apollonia, Auditorium (200p)
12:30pm - 1:30pm	<p data-bbox="309 272 986 328">Oral Presentations: Landscape management and local community engagement</p> <p data-bbox="309 341 992 368">Moderator: Alexander Held, Senior Expert, EFI Resilience Programme</p> <ul data-bbox="309 381 1053 783" style="list-style-type: none"><li data-bbox="309 381 1053 469">• <i>The past is not even past: Managing the legacy effects of historical forest management regimes in Europe's Mediterranean Basin</i>, by Francisco Seijo (Instituto de Empresa School of Global and Public Affairs)<li data-bbox="309 477 1053 564">• <i>Restoration of longleaf pine ecosystems on abandoned agricultural land treated with frequent prescribed fire</i>, by Kevin Robertson (Tall Timbers Research)<li data-bbox="309 572 1053 628">• <i>A mathematical tool for decision making in wildfire suppression</i>, by Bibiana Granda (Universidad Complutense de Madrid)<li data-bbox="309 636 1053 724">• <i>Indigenous fire management as a valuable climate change land-use-based mitigation technology</i>, by Bibiana Alejandra Bilbao (Universidad Simón Bolívar)<li data-bbox="309 732 1053 783">• <i>Indigenous knowledge and a scientific fire management policy for India's forests</i>, by Raman Sukumar (Indian Institute of Science)

4 October, Florence	
Santa Apollonia, Poccetti Room (40 p)	Piazza dell'Unità, Room 114 (25 p)

Afternoon Sessions

CEST	Santa Apollonia, Auditorium
1:30pm - 3:00pm	Lunch, Provided
3:00pm - 4:00pm	<p>Oral Presentations: Landscape management and local community engagement</p> <p>Moderator: Courtney Schultz, Colorado State University</p> <ul style="list-style-type: none"> • <i>Active land management mitigates wildfires impacts in Italy</i>, by Gian Luca Spadoni (University of Turin / University School for Advanced Studies IUSS Pavia) • <i>Factors leading to home loss during a wind-driven wildfire in a Mediterranean ecosystem</i>, by Christopher A. Dicus (California Polytechnic State University, San Luis Obispo) • <i>Engaging People and Place for a Better Relationship with Fire</i>, by Marek Smith (The Nature Conservancy) • <i>Forest fire prevention and protection at the Wildland-Urban Interface (WUI) of Thessaloniki Urban Forest, Greece</i> by Peristera Kourakli, Forest Service of Thessaloniki • <i>Lessons learned from the fire season 2022</i>, by Zisoula Ntasiou (Hellenic Fire Service)
4:00pm - 4:30pm	Break

Santa Apollonia, Poccetti Room

Roundtable Discussion

Why is it so difficult shifting wildfire management from emergency- response towards prevention, preparedness, and mitigation? Critical insights from wildfire governance in Italy

Organizer: **Judith A. Kirschner**, PyroLife ITN, European University Cyprus

Welcome and Plenary: Indigenous and Local Ecological Knowledge

CEST	Santa Apollonia, Auditorium
4:30pm - 5:00pm	Local Welcome and Opening Remarks
5:00pm - 7:00pm	<p data-bbox="306 384 837 411"><i>Presented virtually, streamed for Florence attendees</i></p> <p data-bbox="306 443 423 470">Moderators</p> <ul data-bbox="306 480 1009 603" style="list-style-type: none"><li data-bbox="306 480 1009 539">• Bibiana Bilbao, Professor, Department of Environmental Studies, Universidad Simón Bolívar, Venezuela<li data-bbox="306 549 1009 603">• Mary Huffman, Director, Indigenous Peoples Burning Network, The Nature Conservancy, USA <p data-bbox="306 635 396 662">Panelists</p> <ul data-bbox="306 671 1009 906" style="list-style-type: none"><li data-bbox="306 671 1009 730">• Lucy Amissah, Senior Research Scientist, Council for Scientific and Industrial Research, Forestry Research Institute Ghana, Ghana<li data-bbox="306 740 986 767">• Rohan Fisher, Fire Researcher, Charles Darwin University, Australia<li data-bbox="306 777 1009 836">• Jesús Garzón, President, Trashumancia y Naturaleza and Concejo de la Mesta Association, Spain<li data-bbox="306 845 1009 906">• Lara Steil, Forest Officer, FAO (Food and Agriculture Organization of the United Nations), International

Virtual Concurrent Sessions

CEST	Zoom 1 Moderator: Dolors Armenteras , Universidad Nacional de Colombia
	Oral Presentations: New fire generations in Europe and Beyond
7:30pm - 7:45pm	<i>Are fire regimes changing in Europe? A pan-European analysis</i> , by Andrea Duane (University of Lleida)
7:45pm - 8:00pm	<i>Building the Components of a UK Fire Danger Rating System: Summer Trends in the Flammability of Calluna vulgaris across England and Wales</i> , by Claire M. Belcher (University of Exeter)
8:00pm - 8:15pm	<i>Provincial fire governance alters local ecocultural fire in British Columbia, Canada</i> by Kelsey Copes-Gerbitz (University of British Columbia)
8:15pm - 8:30pm	Question/Answer and Discussion
	Oral Presentations: Landscape management and local community engagement
8:30pm - 8:45pm	<i>Modeling fire hazard and vulnerability of forest ecosystem services in the Italian Apennines</i> , by Giorgio Vacchiano (University of Milan, DISAA)
8:45pm - 9:00pm	<i>A burning delta. The neglected value of the islander's traditional knowledge of fire in the Paraná River, Argentina</i> , by Adriana Millán (Centro de Investigación y de Transferencia Rafaela/UNRaf-CONICET)
9:00pm - 9:15pm	<i>Reconstructing Frequent-Fire Jeffrey Pine Forests in California's Sierra Nevada Mountains</i> , by Paige Kouba (University of California Davis)
9:15pm - 9:30pm	Question/Answer and Discussion

Zoom 2

Student and Early Career Researcher Panel: AFE Harrison Scholarship Recipients

Panelists:

- **Emma Zeitler**, University of Florida
- **Ashlyn Sneed**, Texas Tech University
- **Burke Leonce**, Baylor University
- **Claire Tortorelli**, University of California, Davis

Wednesday, 5 October 2022

Morning Sessions	
CEST	Santa Apollonia, Auditorium
8:40am	Registration Open
9:00am - 9:50am	<p>Panel Discussion <i>Connecting educational projects on fire ecology and management</i> Organizers: Celia Conde and Xènia Juan, Pau Costa Foundation</p> <p>Panelists:</p> <ul style="list-style-type: none"> • Pablo Souza, Universidad Santiago de Compostela • Conceição Colaço, Instituto Superior de Agronomia / Universidade de Lisboa • Jordi Vendrell, PCF General Manager • Iana Abrahamson, USDA Forest Service, Rocky Mountain Research Station - Missoula Firelab
10:00am - 11:00am	<p>Oral Presentations: Managing with fire vs prescribing fire for ecological purposes Moderator: Anne Ganteaume, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE)</p> <ul style="list-style-type: none"> • <i>Restoring aspen forests in the Rocky Mountains USA using high intensity stand-replacing fire</i>, by Jesse Kreye (Penn State University) • <i>Effects of a prescribed fire on soil properties in a Mediterranean environment: Montgrí massif case-study</i>, by Eduardo A. García-Braga (University of Barcelona) • <i>Making FireSense-An Earth Systems Approach</i>, by David Green (National Aeronautics and Space Administration NASA) • <i>The fire suppression bias</i>, by Mark Kreider (University of Montana) • <i>The use of modelling tools for an optimized design of prescribed fire plans</i>, by Nicolò Perello (University of Genova)
11:00am - 11:15am	Break

Santa Apollonia, Poccetti Room

Piazza del Duomo, Cutuli Room

Roundtable Discussion*Update of the "Position Paper on Wildfire Prevention in the Mediterranean"*

Organizers: **Eduard Mauri**, European Forest Institute and **Celia García Feced**, Spanish Ministry for the Ecological Transition and Demographic Challenge

Virtual Field Tour and Discussion*Prescribed burning in Färnebofjärden National Park*

Presenter: **Andreas Wedman**, Länsstyrelsen Gävleborg

4-hr Workshop: Pre-registration required*Exploring ArcGIS field data collection tools*

Organizers: **Chris (Fern) Ferner** and **Anthony Schultz**, Esri

Morning Sessions

CEST	Santa Apollonia, Auditorium
11:15am - 12:15pm	<p>Oral Presentations: Wildfires and society</p> <p>Moderator: Davide Ascoli, University of Torino</p> <ul style="list-style-type: none"> • <i>Extreme wildfire behaviour under the 2021 Pacific Northwest heat dome</i>, by Piyush Jain (Canadian Forest Service) • <i>SAFERS: Structured Approaches for Forest fire Emergencies in Resilient Societies</i>, by Giota Masa (Centre for Research and Technology Hellas) • <i>Service Learning for facing environmental issues: the case of the "Facing Fire" European project</i>, by Glenda Galeotti (University of Florence) • <i>Abrupt but anticipated climate-induced change in British Columbia wildfires</i>, by Marc Parisien (Canadian Forest Service) • <i>Pyro-silvicultural treatments to mitigate crown fire behaviour in dry coniferous forest</i>, by Davide Vecchio (DISAFA -Università di Torino)
12:15pm - 1:15pm	<p>Oral Presentations: Wildfires and society</p> <p>Moderator: Davide Ascoli, University of Torino</p> <ul style="list-style-type: none"> • <i>Going Dutch in Fire Management: Lessons from Water management in the Netherlands</i>, by Hugo Lambrechts (Wageningen University) • <i>Fire resilience landscapes in the Wildland Urban Interfaces (WUI) of the Concepcion Metropolitan Area</i>, by Carolina G. Ojeda (Pontificia Universidad Católica de Chile- Universidad Católica de la Santísima Concepción) • <i>Nuclear wildfires: Sensing air, atmospheres and radiation in the Chernobyl Exclusion Zone</i>, by Christine Eriksen (Center for Security Studies, Swiss Federal Institute of Technology) • <i>Strategic policy choice in wildfire management: Broadening the focus</i>, by John Handmer (IIASA-International Institute for Applied Systems Analysis) • <i>Six years of prescribed fire in Sweden (LIFE Taiga) – with more to come (LIFE2Taiga)</i>, by Anders Heurlin (Länsstyrelsen Dalarna)

Santa Apollonia, Poccetti Room

Piazza del Duomo, Cutuli Room

Roundtable Discussion

Exploring pathways for adaptation to wildfire risk

Organizer: **Eva Preinfalk**, International Institute for Applied Systems Analysis (IIASA)

Workshop Cont'd: *Exploring ArcGIS field data collection tools*

Roundtable Discussion

Examining the causes and consequences of extreme fire spread

Organizer: **Sean Parks**, USDA Forest Service, Rocky Mountain Research Station

Afternoon Sessions	
CEST	Santa Apollonia, Auditorium
1:15pm - 2:00pm	Lunch, Provided
2:00pm - 3:00pm	<p>Oral Presentations: Managing with fire vs prescribing fire for ecological purposes</p> <p>Moderator: Anne Ganteaume, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement (INRAE)</p> <ul style="list-style-type: none"> • <i>Landscape consideration in the use of prescribed burning</i>, by Antonella Massaiu (Office National des Forêts (ONF) Corse) • <i>Uneven-aged silvicultural system on ZAL</i>, by Muriel Tiger (Office National des Forêts Corse) • <i>Fire management strategies in Latin America: New challenges and opportunities for policymakers in changing climate scenarios</i>, by Bibiana Alejandra Bilbao (Universidad Simón Bolívar) • <i>Evaluating demand for prescribed burning through non-market economic valuation</i>, by Melissa Kreye (Penn State University) • <i>A Web-Application Supporting Preparedness Problems in Wildfire Management</i>, by Alessia Di Fonso (University of L'Aquila)
3:10pm - 4:00pm	<p>Panel Discussion</p> <p><i>New Approaches: Summer 2022 Fire Events in Catalonia, Spain</i></p> <p>Organizer: Rut Domènech, Consorci de Politiques Ambientals de les Terres de l'Ebre (COPATE)</p> <p>Panelists:</p> <ul style="list-style-type: none"> • Zisoula Ntasiou, Hellenic Fire Service (Greece) • Luca Tonarelli, DREAm ITALIA (Italy) • Marc Castellnou, Catalan Forest Service (Spain)
4:00pm - 4:30pm	Break

Santa Apollonia, Poccetti Room

Roundtable Discussion

*Wildland Firefighter Working Conditions, Experiences, Attitudes, and Morale:
Understanding the Current State of the Field*

Organizer: **Robin Verble**, Missouri University of Science and Technology

Plenary: Rewilding, Ecological Restoration, and Fire Management

CEST	Santa Apollonia, Auditorium
4:30pm - 7:00pm	<p><i>Panel with speakers and moderator presenting in Florence; live streamed for virtual attendees</i></p> <p>Moderators</p> <ul style="list-style-type: none"> • Alexander Held, Senior Expert, EFI Resilience Programme, Germany <p>Panelists</p> <ul style="list-style-type: none"> • William Bond, Emeritus Professor, Biological Sciences, University of Cape Town, South Africa • Alessandra Fidelis, Associate Professor, Department of Biodiversity, São Paulo State University, Brazil • Deli Saavedra, Head of Landscapes, Rewilding Europe

Virtual Concurrent Sessions

CEST	Zoom 1 Moderator: David Martín, Pau Costa Foundation
	Oral Presentations: Landscape management and local community engagement
7:30pm - 7:45pm	<i>Engaging Stakeholders in forest management for resilient forest creation and reduce Fire loss</i> , by Bushra Sanira Asif (University of Genoa)
7:45pm - 8:00pm	<i>Pre-Columbian Fuel Harvesting Lifeways in the Sierra Nevada, California, USA</i> , by Scott Markwith (Florida Atlantic University)
8:00pm - 8:15pm	<i>Building the Components of a UK Fire Danger Rating System: Progress, Challenges and Future Development</i> , by Gareth Clay (University of Manchester)
8:15pm - 8:30pm	Question/Answer and Discussion
8:30pm - 9:30pm	

5 October, Florence and Online

5 October, Online

Zoom 2

Roundtable Discussion

From data to action: A way to reduce wildfires: progress in Latin America

Organizers: **Bibiana Bilbao**, Departamento de Estudios Ambientales, Universidad Simón Bolívar and **Dolors Armenteras**, Departamento de Biología, Universidad Nacional de Colombia

Thursday, 6 October 2022

Morning Sessions	
CEST	Santa Apollonia, Auditorium
8:40am	Registration Open
9:00am - 10:00am	<p>Oral Presentations: Wildfires and society Moderator: Francisco Seijo, Instituto de Empresa School of Global and Public Affairs</p> <ul style="list-style-type: none"> • <i>A novel trait-based framework to further our understanding of post-fire tree mortality</i>, by Morgan Varner (Tall Timbers Research Station) • <i>Soil disturbances and recovery capacity with different soil management facing wildfires in Catalonia (Spain)</i>, by Antonio Peñalver-Alcalá (University of Barcelona) • <i>Use of silvicultural treatment and prescribed burning methods for fire mitigation on Pinus laricio forests in Corsica</i> by Pauline Longeard, UMR SPE 6134 • <i>Fire management for fauna conservation in healthy woodlands of south-eastern Australia</i>, by Matt Swan (University of Melbourne) • <i>Wildfire benefits native forest bees</i>, by Thomas Seth Davis (Colorado State University)
10:00am - 11:00am	<p>Oral Presentations: Roles of fire ecology for ecosystem conservation Moderator: Francisco Seijo, Instituto de Empresa School of Global and Public Affairs</p> <ul style="list-style-type: none"> • <i>Beavers-a natural ally against wildfires?</i>, by Emiliano Mori (CNR-IRET) • <i>A non-binary, trait-based framework for assessing post-fire tree regeneration strategies</i>, by Jeff Kane (Cal Poly Humboldt) • <i>Are the plant adaptive responses to fire sufficient to cope with the fire regime change expected with the climate change?</i>, by Anne Ganteaume (Institut national de recherche pour l'agriculture, l'alimentation et l'environnement - INRAE) • <i>Mainstreaming 'fire-smart' management in land-use policies to support the transition towards more resilient landscapes: challenges and opportunities</i>, by Adrián Regos (Forest Science Center of Catalonia) • <i>Developing a protocol to assess post-fire tree vitality by means of sugar analysis</i>, by Niccolò Frassinelli (DAGRI- UNIFI)
11:10am - 12:10pm	<p>Oral Presentations: Roles of fire ecology for ecosystem conservation Moderator: Courtney Schultz, Colorado State University</p> <ul style="list-style-type: none"> • <i>Use of remote sensing to evaluate effects of postfire emergency stabilization on vegetation recovery rate: a Portuguese case study</i>, by Luis Filipe Lopes (Centre for Applied Ecology "Professor Baeta Neves", InBIO, School of Agriculture, University of Lisbon) • <i>Impacts of land management and changing wildfire regimes on forest ecological functions and ecosystem services in the western United States</i>, by Katherine Siegel (University of Colorado-Boulder) • <i>Carbon, Wildfire, Management: exploring the interaction between forest carbon stocks, wildfire, and management practices in Colorado (USA)</i>, by Erin Twaddell (University of Colorado Denver) • <i>Extent and direction of recent fire-driven shifts in southwestern ponderosa pine forests</i>, by Jonathan Coop (Western Colorado University) • <i>Ecological effects of fire on Vaccinium communities</i>, by Giacomo Sbaragli (DREAm ITALIA)
12:10pm - 2:00pm	<p>Poster Session (list of poster presentations on page 31) Lunch, Provided</p>

Santa Apollonia, Poccetti Room

Piazza del Duomo, Cutuli Room

Roundtable Discussion

Equitable wildfire risk-sharing

Organizer: **Teresa M. Deubelli**, IIASA, International Institute for Applied Systems Analysis

2-hr Workshop: Pre-registration required
From fuel characteristics to fuel models: significance, approaches and challenges in field data collection

Organizers: **Chiara Bruni**, CEF- University of Lisbon and Etifor and **Cristiano Foderi**, Department of Agriculture, Food, Environment and Forestry (DAGRI) – University of Florence

2-hr Workshop: Pre-registration required
Engage Stakeholders and Socialize Information Using ArcGIS

Organizers: **Chris (Fern) Ferner** and **Anthony Schultz**, Esri

Afternoon Sessions	
CEST	Santa Apollonia, Auditorium
2:00pm – 4:00pm	<p>Panel Discussion <i>The experience of the Firewise Communities in Tuscany</i></p> <p>Moderator:</p> <ul style="list-style-type: none"> • Gianluca Calvani, Regione Toscana, Italy <p>Panelists:</p> <ul style="list-style-type: none"> • Silvia Lorenzoni, Comune di Calci, Pisa • Enrico Bernardini, Comune di Vicopisano, Pisa • Annalaura Vannuccini, ANCI – Associazione Nazionale Comuni Italiani • Gabriele Salvadori, CVT – Coordinamento Volontariato Toscano • Maurizio Meucci, Presidente Associazione Comunità del Bosco del Monte Pisano
4:00pm – 4:30pm	Break

Plenary: Advances in Fire Ecology, International Research, and Management Applications	
CEST	Santa Apollonia, Auditorium
4:30pm – 7:00pm	<p><i>Panel with speakers and moderator presenting in Florence; live streamed for virtual attendees</i></p> <p>Moderator:</p> <ul style="list-style-type: none"> • Paul Hessburg, Senior Research Ecologist, USDA-FS, PNW Research Station, Washington, USA; President, Association for Fire Ecology <p>Panelists:</p> <ul style="list-style-type: none"> • Davide Ascoli, Professor, Department of Agriculture, Forest and Food Sciences, University of Torino, and Italian Society of Silviculture and Forest Ecology (SISEF), Italy • Marc Castellnou, Strategic Fire Analyst, Catalan Fire and Rescue Service; Associate Professor, University of Lleida, Spain • Rachael Gallagher, Associate Professor, Hawkesbury Institute for the Environment, Western Sydney University, Australia

Gala Dinner	
CEST	Piazza dell'Unità Italiana, 6. Firenze 50123
7:30pm	Gala Dinner – Restaurant B-Roof

6 October, Florence

Santa Apollonia, Poccetti Room

Piazza del Duomo, Cutuli Room

Roundtable Discussion

Global application of prescribed fire

Organizers: **Carol Baldwin**, Kansas State University; **John Weir**, Oklahoma State University; **Morgan Treadwell**, Texas A&M University

2-hr Workshop: Pre-registration required

Harnessing open-source data and tools for fire progression and fire effects modelling

Organizers: **Ellen Whitman**, Natural Resources Canada, Canadian Forest Service and **Sean Parks**, USDA Forest Service, Rocky Mountain Research Station

6 October, Florence and Online

6 October, Florence

Virtual Concurrent Sessions

CEST	Zoom 1
	Oral Presentations: Roles of fire ecology for ecosystem conservation
7:30pm - 7:45pm	<i>Pyrodiversity increases plant diversity in an actively managed tallgrass prairie</i> , by Charlotte Reemts (The Nature Conservancy)
7:45pm - 8:00pm	<i>Fungal communities experience rapid secondary succession during the first year following a wildfire in California chaparral</i> , by M Fabiola Pulido-Chavez (University of California–Riverside)
8:00pm - 8:15pm	<i>Leveraging Cloud Computing to Forecast Rangeland Fuel Dynamics</i> by Matt Reeves , (USDA Forest Service, Rocky Mountain Research Station)
8:15pm - 8:30pm	Question/Answer and Discussion
	Oral Presentations: Roles of fire ecology for ecosystem conservation
8:30pm - 9:45pm	<i>Avian community changes in response to wildfires in a desert sky-island forest ecosystem</i> , by Jacquie Ferrato (The Nature Conservancy)
8:45pm - 9:00pm	<i>Assumptions about post-fire mortality affect pyrodiversity–biodiversity relationships in montane forests of the Canadian SE Rocky Mountains</i> , by Ceres Barros (University of British Columbia)
9:00pm - 9:15pm	<i>Expanding Cross Boundary Opportunities</i> , by Jen Croft (USFS Fire and Aviation Management)
9:15pm - 9:30pm	Question/Answer and Discussion

Zoom 2

Roundtable Discussion

Fire ecology and management in Africa: past trajectories and current trends

Organizers: **Esther Ekuo Amoako**, University for Development Studies, Ghana; **Sally Archibald**, University of the Witwatersrand, Johannesburg; **Brigitte N'DRI Epse KONE**, Nangui Abrogoua University; **Tercia Strydom**, Kruger National Park South African National Parks (SANParks)

Poster Presentations – 6 October, Florence

These posters will be presented in-person, with the option of adding the poster to Whova for virtual attendees.

1	<i>Assessing and quantifying fire activity in quaking aspen</i> Kristin A. Nesbit , Utah State University
2	<i>Assessing impacts of climate change and human population growth on forest fire potential in the tropics: A case study of the Tain Il Forest Reserve in Ghana</i> Eric Osei-Kwarteng , Forestry Commission-Resource Management Support Centre (RMSC)
3	<i>Assessing Wildfire Cross-boundary Transmission and Community Impacts</i> Christopher Dunn , Oregon State University
4	<i>Assessment of the fire-safety and defensible space around buildings in south-eastern France WUI areas</i> Claudio Ribotta , INRAE - PACA - RECOVER Unit
5	<i>Comparative analysis of forest-fire policies across European and South American countries</i> Gabriela Huidobro , Technical University of Dresden
6	<i>Complex Spatio-Temporal Interactions of Prescribed Fire, Fire Suppression, and Ignitions in the Future Landscape of the Southern Appalachians, US</i> Louise Loudermilk , United States Forest Service
7	<i>Crowdsourcing solutions for Wildfire Management</i> Luca Barco , Politecnico di Torino
8	<i>Evaluating Grazing Strategies for Fuels Management in Linear Fuel Breaks of South-Central Idaho (USA)</i> Kayla Johnston , University of Idaho
9	<i>Fire Education Platform: an immersive tool for knowledge transfer about Wildfires</i> Conceição Colaço , University of Lisbon
10	<i>Flammability of annual and perennial grasses of the Western US from green-up through senescence</i> Georgia Harrison , University of Idaho
11	<i>Forest fire risk and prevention map production project – for better forest fire preparedness</i> Leena Leskinen , Finnish Forest Centre

Poster Presentations – 6 October, Florence

These posters will be presented in-person, with the option of adding the poster to Whova for virtual attendees.

12	<i>Fuel reduction treatments modify fire intensity in the sagebrush steppe</i> Lisa Ellsworth , Oregon State University
13	<i>How does Prescribed Fire Season and Time Since Burning affect Butterfly Populations in Coastal South Texas?</i> Sandra Rideout-Hanzak , Texas A&M University-Kingsville
14	<i>Ignition by Drone for Safe UXO-Site Burning</i> Steffen Hartig , PYRECO
15	<i>In Their Own Words: Wildland Firefighter Experiences in the United States Federal Workforce</i> Robin Verble , Missouri University of Science and Technology
16	<i>Leverage ArcGIS Remote Sensing Tools to Improve Analysis</i> Chris (Fern) Ferne , Esri
17	<i>Post-fire recovery in a changing world</i> Camille S. Stevens-Rumann , Colorado State University
18	<i>Recent Trends in Wildland-Urban Interface Community Preparedness and Education</i> Kate Masterson , University of Idaho
19	<i>Reducing the negative impact of fuels treatments to minimize damage and promoting the natural role of fire</i> Carol L. Rice , Wildland Res Mgt
20	<i>Regeneration of quaking aspen (<i>Populus tremuloides</i>) after fire risk reduction treatments</i> Allison Marie Trudgeon , Utah State University
21	<i>Relating wildfire seasonality to remotely sensed fuel phenology: a tool for a new pyrogeography?</i> Sofia Bajocco , CREA-AA
22	<i>Revising estimated pre-Euroamerican annual burned area in California, USA</i> Rebecca Wayman , University of California, Davis
23	<i>Re-wildfires: rewilding, wildfires and grazing in Sicily</i> Hanna Rasper , Freelance

Poster Presentations - 6 October, Florence

These posters will be presented in-person, with the option of adding the poster to Whova for virtual attendees.

24	<i>Sapper Cattle</i> Pedro Neto , Gardunha 21
25	<i>SE FireMap: Understanding Fire Impacts on the Landscape</i> Joe Noble , Tall Timbers Research
26	<i>Six years of burning for nature conservation in Sweden – with more to come</i> Anders Heurlin and Andreas Wedman , Värmland County Administrative Board
27	<i>Spanish National Prescribed Burning Programme</i> Celia García Feced , Subdirectorato General of Forest Policy and Fight against Desertification
28	<i>Spatial Effects of Future Drought Driven Wildfires in the Southern Appalachian Landscape, U.S.</i> Robert Scheller , North Carolina State University
29	<i>Survey of U.S. Federal Wildland Firefighters Reveals Trends in Attitudes, Morale, and Workplace Culture</i> Rachel Granberg , United States Forest Service
30	<i>The current state of forest health in Germany and the potential implementation of prescribed burning as a management tool in German forests</i> Melanie Schlüter , University for Sustainable Development Eberswalde
31	<i>The Fire Learning Network: 20 years of Advancing Collaborative Fire Practices</i> Marek Smith , The Nature Conservancy
32	<i>Vegetation as an indicator of smoldering fire on coal-waste dumps</i> Anna Katarzyna Abramowicz , University of Silesia in Katowice

Friday, 7 October 2022

Field Trips	7 October, 2022
Field Trips require pre-registration and an additional fee of 60€. See page 39 for meeting locations and times.	
<ul style="list-style-type: none">• Prescribed Burn in the Locality Cutigliano (PT)• Intervention Sites of the Life Granatha Project	

On-demand Virtual Presentations

Oral Presentations, Online	
<i>Available to view on Whova any time after start of event; speakers and attendees can interact through chat and/or video throughout the week as desired</i>	
1	<i>A demographic framework for understanding fire-related declines in animal populations</i> Julianna Santos , The University of Melbourne
2	<i>A model analysis of postwildfire management and the reburn hypothesis</i> Maureen Kennedy , School of Interdisciplinary Arts and Sciences
3	<i>Alternative forests in response to changing disturbance in the southeastern United States</i> Brice Hanberry , USDA Forest Service
4	<i>Applications of drones to the assessment of fire refuges and their use by animals</i> Marina Palmero Iniesta , University of Girona
5	<i>Co-producing Adaptation Pathways for wildland fire risk reduction</i> Kathleen Uyttewaal , Pau Costa Foundation; Wageningen University & Research
6	<i>Defining recent fire regime in the mountains of Northwest Yunnan using 30 years of fire records derived from Landsat timeseries</i> Davide Fornacca , Institute of Eastern-Himalaya Biodiversity Research - Dali University

Oral Presentations, Online

Available to view on Whova any time after start of event; speakers and attendees can interact through chat and/or video throughout the week as desired

7	<p><i>Effect of pyric herbivory in Mediterranean semiarid shrublands of gorse (<i>Genista scorpius</i> L.) and Alfa grass (<i>Macrochloa tenacissima</i> (L.) Kunth) in Southeast Spain</i></p> <p>Maria Eugenia Ramos Font, Estación Experimental del Zaidín</p>
8	<p><i>Envisioning transition from open landscapes to forested landscapes in the Routt National Forest, CO</i></p> <p>Jacob Seidel, USDA Forest Service - Rocky Mountain Research Station</p>
9	<p><i>Fire Ecology Research Needs Well-Designed Experiments</i></p> <p>SheRong, Dali University</p>
10	<p><i>Fire Science from Chemistry to Landscape Management</i></p> <p>Penelope Morgan, University of Idaho</p>
11	<p><i>Forest after fire. Addressing the Impacts on groundwater recharge rates</i></p> <p>Mónica Ximena Guzman Rojo, Free University of Brussels/Bolivian Catholic University San Pablo</p>
12	<p><i>Low-severity burning is beneficial for avian conservation in <i>Pinus yunnanensis</i> forests of southwest China</i></p> <p>Rongxing Wang, Institute of Eastern-Himalaya Biodiversity Research, Dali University</p>
13	<p><i>Season affects fire behavior in annually burned Guinean savanna (West Africa)</i></p> <p>N'DRI Aya Brigitte, Nangui Abrogoua University</p>
14	<p><i>Tree expansion and tree density increases correlated with fire exclusion and not climate change in the eastern United States</i></p> <p>Brice Hanberry, USDA Forest Service</p>

Poster Presentations, Online

Available to view on Whova any time after start of event; speakers and attendees can interact through chat and/or video throughout the week as desired

1	<i>Fire pattern across the Gran Chaco and Pantanal over the period 2001-2020</i> Cristina Vidal , Universidad de Santiago de Compostela
2	<i>Looking to the past: Are plant strategies to survive wildfire driven by fire itself?</i> Rebecca A. Koll , University of Exeter
3	<i>Experimental Study of Smoke Pollution from Biomass Burning Impact on the Flight Behaviour of Vanessa Cardui L. (Painted Lady Butterfly)</i> Yanan Liu , King's College London
4	<i>Effects of different types of fire disturbance on seed germination of Pinus armandii</i> Peiyao Liu , Institute of Eastern-Himalaya Biodiversity Research, Dali University
5	<i>Exploring tree density increases in the historical Arapaho and Roosevelt National Forests and Weld County, site of the Pawnee National Grasslands, Colorado</i> Jacob Seidel , USDA Forest Service - Rocky Mountain Research Station
6	<i>Mapping defensible zones in residential areas prone to forest fires</i> Cheikh SEYE , Aix-Marseille University
7	<i>The response of sub-adult trees to successive fires in the Guinean savanna (West Africa)</i> N'DRI Aya Brigitte , Nangui Abrogoua University
8	<i>Tree migration and novel assemblages can develop due to land use change</i> Brice Hanberry , USDA Forest Service
9	<i>From traits to fire behavior: Predicting fire intensity using functional traits of the understory vegetation in Longleaf Pine savannas</i> Sairandhri Lalpalikar , University of Florida
10	<i>Envisioning transition from open landscapes to forested landscapes in the Routt National Forest, CO</i> Jacob Seidel , USDA Forest Service - Rocky Mountain Research Station

Main Venue

Santa Apollonia



📍 Via San Gallo 25, Firenze

How to get there:

🚌 Bus lines: 1, 6, 7, 11, 14, 17, 20, 23, 31, 32, 52 (Stop: Santa Riparata) + 🚶 1 min walk (average time 8-11 minutes)

🚶 By walk from Santa Maria Novella Station: 12 min (1.0 km)

🚊 By Tram from Florence Airport, Peretola: TRAM T2 to Unità, Stop: Rosselli (average time 25 minutes)

🚗 By Taxi: Phone number 055 4390/4242, average cost 23€-28€ (Santa Maria Novella station stop), travel time 9 minutes (8.6 km)


✈️ From Airport Pisa: PISAMOVER S1 (Stop Pisa Centro) + TRENITALIA Train to Florence S. Maria Novella Station




Other Venues


Palazzo Guadagni Strozzi Sacratì (Giunta Regionale)



 Piazza Duomo 10, Firenze. Cutuli Room, Ground Floor


How to get there:

 Bus lines: C1 (Stop: Roma Duomo) + 4 min walk (Total time: 13- 15 min); 6, 14 (Stop: Santissima Annunziata) + 8 min walk (Total time: 13-17 min)


 By walk from Santa Maria Novella Station: 13 min (1.1 km)


Pallazo Cerretani (Giunta Regionale)



 Piazza dell'Unità 1, Firenze. Room 114 First Floor

How to get there:

 Bus lines: A,1B,6A,6B,7 (Stop: Piazza Adua)

 By walk from Santa Maria Novella Station: 9 min (750 m)

 By Tram: TRAM T1 (Stop: Alamanni)

Fieldtrips

1. Appennino pistoiese (Fredduccia o Croce Arcana)

Place and time of departure/return:

If the prescribed fire can be executed (Option 1), participants will meet around 6:00am near the Santa Maria Novella station with return in the afternoon around 5:00pm. If the prescribed burn cannot be executed (Option 2), participants will meet around 7:00am near the Santa Maria Novella station and return in the evening around 8:00pm. Exact times and location will be sent to participants closer to the event.

Programme Details:

Option 1: Prescribed Fire (locality La Fredduccia in the Municipality of San Marcello-Piteglio): Participants will arrive by bus around 8:00am in the locality of Butale. From the car park, they will continue by foot for 30 minutes with a difference in altitude of 25 m. A visit to the area during the execution of a prescribed fire will be possible if weather conditions permit. Participants will have discussion with the technicians present at the site, have a packed lunch, and then return to the car park to return to Florence. If visiting the prescribed fire area is not possible, the excursion will follow the program of Option 2 (see below).



Option 2: No Prescribed Fire (Croce Arcana and Fredduccia): Participants will arrive around 9:00am in Cutigliano. From here, it will be necessary to take the cable car to reach Doganaccia around 9:30am (total hours with bus and cable car approx. 2 hours). From Doganaccia, participants will walk for 45 minutes to 1 hour (1.3 km with a difference in altitude of 120 m) to Croce Arcana to visit an area of blueberries where a prescribed fire site was implemented in 2021. After the visit, there will be a break for a packed lunch. After the break, return to Doganaccia to take the cable car and bus to the Option 1 area (approx. 45 minutes) to see where prescribed fire treatments are planned soon.



- **In the event of bad weather**, the excursion will be diverted to the other scheduled visits (Pratomagno or Vicopisano).
- **Difficulty of the route**: Medium
- **What to bring**: Hiking boots/shoes, warm clothing, mackintosh/raincoat, water

2. Pratomagno project LIFE "GrAnATHa"

Place and time of departure/return:

Meeting around 07:30 a.m. from Santa Maria Novella station (indicative location)
return in the afternoon around 04:00 p.m.

Programme Details:

Participants will arrive by bus around 9:30am near a photovoltaic plant in the locality of Caspri in the municipality of Castelfranco Piandiscò. From the arrival point, we set off on a footpath approximately 950m long for a total uphill difference in height of approximately 100 m to reach the base of the construction site. An average walking time of about 20 minutes is estimated. To reach the area of interest, we will continue approximately 500 m with an average gradient of about 20 percent. From 10:00am to 1:00pm, we will visit the site area with a description of the LIFE GrAnATHa project and a comparison of different forms of treatment of heather. From 1:00 – 2:00pm, a packed lunch with typical products from Pratomagno will be provided. At 2:30pm, the group will depart by bus to return to Florence. GrAnATHa project:

www.lifegrantha.eu

- **Difficulty of the route:** Medium
- **What to bring:** Hiking boots/shoes, warm clothing, mackintosh/raincoat, water



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THE SCIENCE OF WHERE

Damaged Structures

- Damaged 100%
- Minor 25-50%
- Major 50-75%
- Destroyed 75-100%

Structures Destroyed

- 100% destroyed
- 75% destroyed
- 50% destroyed
- 25% destroyed

The graphic features a red background with a map overlay showing a wildfire impact area. A QR code is located in the bottom left corner.



Tall Timbers

The mission of Tall Timbers is to foster exemplary land stewardship through research, conservation and education. Our primary research focus is the ecology and management of fire-dependent ecosystems, and its wildlife, including bobwhite quail, in the Southeastern Coastal Plain. Our conservation efforts are dedicated to helping protect the distinctive, rural landscape of South Georgia and North Florida and its traditional land uses. Our education program transfers research and conservation information for resource management.

 **TALL TIMBERS**

Researching the fire we use

We are dedicated to researching fire and advocating for the right to use prescribed fire. Our research has local through global implications as we work to maintain and expand the safe and effective use of fire by advancing knowledge and developing the tools needed to address land management.

Conserving land for the future

Long-term land conservation is an important part of establishing and connecting larger areas of wildlife habitat and facilitating the use of prescribed fire. Our conservation easements keep lands in private ownership, while limiting future development.

Saving rare species

Our team tackles questions that are essential to the conservation and management of rare birds and other wildlife associated with fire-dependent ecosystems.

www.TallTimbers.org

Bronze Sponsors



Italian Society of Silviculture and Forest Ecology (SISEF)

SISEF aims to coordinate and foster research and studies on forest ecosystems and their conservation and management. The society is organized into 16 working groups focusing on different fields of research, including fire risks management and prevention, biodiversity, old growth forests, urban forestry, forests' adaptation to climate change, modeling, etc. SISEF also promotes networking and scientific cooperation among researchers and professionals at national and international level.

www.sisef.org



The Nature Conservancy

The Nature Conservancy is a global conservation organization dedicated to conserving the lands and waters on which

all life depends. We create innovative, on-the-ground solutions to our world's toughest challenges. We use a collaborative approach that engages local communities, governments, the private sector, and other partners. We have a 60-year history as a leading nonprofit organization working on fire issues.

www.nature.org/es-us/



Northern Rockies Fire Science Network

The Northern Rockies Fire Science Network (NRFSN) is a go-to resource for managers and scientists involved in fire and fuels management in the Rocky Mountains of

Idaho, Montana, Washington, and Wyoming. We facilitate knowledge exchange among managers and scientists by bringing people together to strengthen collaborations, synthesize science, and enhance science application to critical fire and fuels management issues. www.nrfirescience.org



Vallfirest

Vallfirest is a well-known manufacturer of equipment, tools and solutions for wildland firefighting.

At Vallfirest we work hand by hand with analysts and industry professionals from all over the world, who transmit their needs and experiences to us. This continuous flow of information helps us to optimize the existing tools and develop more disruptive and better tools, machinery and equipment that allow us to act more efficiently and effectively and, above all, allow us to better protect our society and the forestry ecosystems. www.vallfirest.com



The
Emergency
Program
WILDFIRE

The Emergency Program Wildfire

The Emergency Program (TEP) is the only global online training program dedicated to wildland fire management, taught by experts from different parts of the world, providing their knowledge, experiences and lessons learnt.

TEP was created as a response to the global challenge of 21st century wildfires. We transform information into knowledge and improve human resource analysis with innovative tools, years of experience and lessons learnt at the hands of the experts who belong to TEP. TEP turns knowledge into know-how. Our vision seeks to create a common language and a logical way of thinking focused on reducing uncertainty for both simple and highly complex wildland fire scenarios. We go beyond the idea of only solving scenarios adding more and more resources. www.emerprogram.com

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