- CREAF WEB
- CREAF BLOG

ΣMF

- News
- Models
- Workflows
- Data
- Software
- Tech Docs
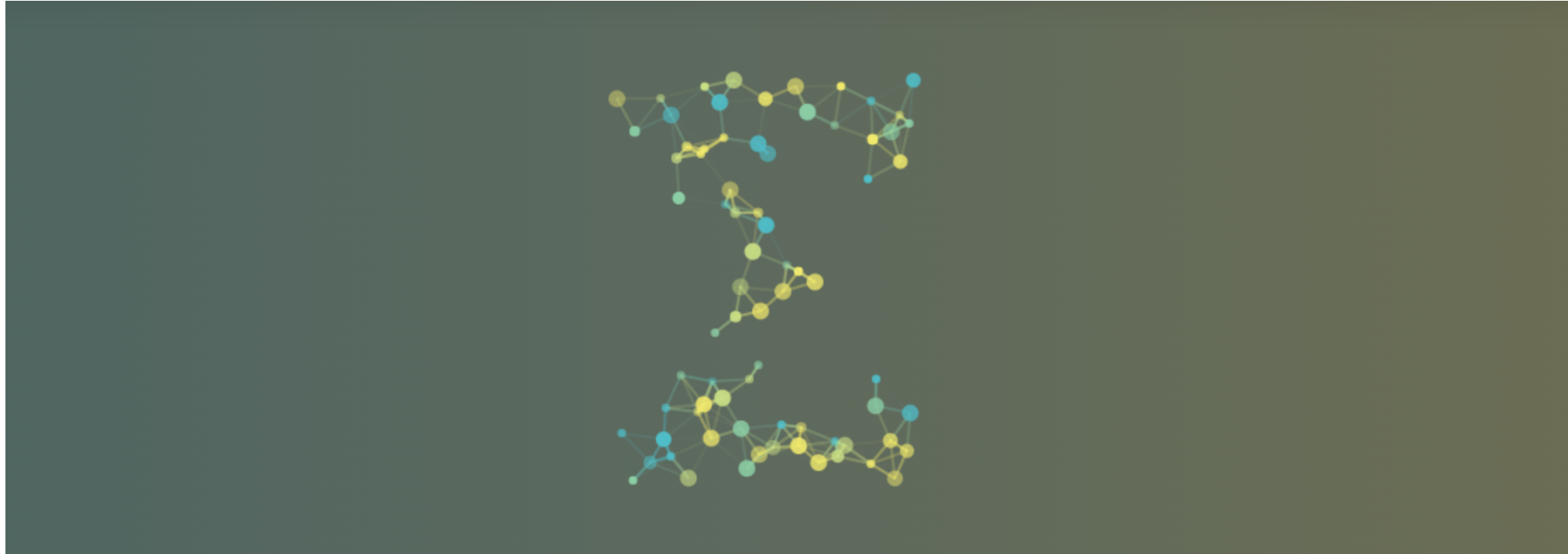- Publications & Projects
- Training
- About EMF

EMF Newsletter October 2023

2023-10-23

Activity conducted at EMF between *01/06/2023* and *27/10/2023*

Basic support activity

- **Programming support**: J. Barba, L. Stewart (M. Mencuccini, O. Binks), T. Rosas
- **Data management support**: L. Andreu-Hayles
- **Statistical support**: M. Braña (D. Sol/F. Sayol), J. Rhoades, L. Brotons, I. Hernández-Valencia
- **Modelling support**: J. Dávila, J. De la Casa, M. Móstiga, O. Banks/Laura Stewart

Participation in research projects

- **WILDE** (EU - Researchers: J.M. Espelta, L. Brotons): Participation in a workshop on scenario definition and post-doc hiring to work on the Barcelona case study (https://www.wilde-project.eu/)
- **RESONATE** (EU - Researchers: J. Martínez, F. Lloret, J.M. Espelta): Assisting in the use of MEDFATE for the evaluation of forest ecosystem services.
- **FORGENIUS** (EU - Researchers: M. Mencuccini): Collaboration with Nicolas Martin-StPaul on comparison and parameterization of models of plant hydraulics.
- **BOMFORES** (Spain - IP: M. De Cáceres): Design of new processes and development of model initialisation routines.
- **DRASTIC** (Spain - IP: M. Mencuccini): Tree water use and Drought responses: the roles of allometry, water storage and transport under climate change
- **C4N** (EU - IP: A. Broekman): Transfer knowledge and best practices, as well as harmonising policies, to tackle the challenges related to biodiversity protection and climate change.

Participation in transfer projects

- **Contract with Centre de la Propietat Forestal** (A. Tovar, J. Vayreda, M. De Cáceres, R. Molowny): Preparation of a proposal for revision of carbon sequestration due to changes in silvicultural practices.
- **Contracte programa / Oficina Catalana de Canvi Climàtic** (M. De Cáceres, J. Vayreda, M. Banqué, R. Molowny): Simulation of forest projections including management scenarios and climate scenarios.
- **Grup de treball de Carboni al Sòl** (R. Molowny, V. Granda, several CREAF researchers and other 7 Research Centers in Catalonia): Soil carbon database and maps for Catalonia (Generalitat).

Network building

- Miquel De Cáceres and Adriana Tovar attended a National conference (XIII AEET Meeting. Almeria (Spain) 16 – 20 october 2023), including an oral presentation.
- EMF has now an X (formerly Twitter) account (@EcosystemModelF) to help communicating news regarding its activity.
- Roberto Molowny attended the kick-off meeting of the CARDIMED project (Athens, Greece, 27 – 29 September) to start gathering information from demo sites.

Training & mentoring

Courses taught:

- Accessing and processing climate data with `meteospain` and `meteoland` R packages (V. Granda/M. de Cáceres, 12h, Watering Talents/CREAF)

Mentoring:

- J. Dávila

Model development

Design and implementation:

- Implementation of dispersal routines in `medfateland`.
- Revision of plant hydraulics (sub-models Sperry and SurEau) in `medfate`.

Parameterization:

- Development of model initialization routines from different national forest inventories (Spain, France, EEUU)
- Parameterization of resprouting and fire severity in `medfate`.
- Definition of target species lists for simulations with national forest inventories (Spain, France, EEUU)
- Revision and recalibration of `fpm` package functions.

New software & updates

- New version of package `meteospain` (v. 0.1.3) released on CRAN
- New version of package `meteoland` (v.2.1.0) released on CRAN
- New version of package `medfate` (v. 3.1.4) released on CRAN
- Update of the *Laboratori Forestal Català* web:
  - Update of MeteolandApp, CatDroughtApp and SiteDroughtApp to match changes in package `meteoland`.
  - Maintenance of all apps to keep up to date library dependencies and web tools.

New technical documents

- *Evaluation of Ecosystem Services* - Provides the definition and operational estimation procedures of a number of forest ecosystem services to be evaluated for Catalonia (NE Spain) both in historical assessments (using forest inventory data) and future projections (using model simulations of forest function and dynamics).

Publications developing/using EMF tools

- Margalef-Marrase J, Molowny-Horas R, Jaime L, Lloret F (2023). Modelling the dynamics of Pinus sylvestris forests after a die-off event under climate change scenarios. Science of The Total Environment 856: 159063.

Publications from other collaborations

- Sturbois A, De Cáceres M, Aline B, Bioret F, Boyé A, Olivier G, Grall J, Grémare A, Labrune C, Robert A, Schaal G, Desroy N (2023). Ecological Quality Assessment: a framework to report ecosystems quality and their dynamics from reference conditions. Ecosphere (accepted).
- Balaguer-Romano R, Díaz-Sierra R, De Cáceres M, Voltas J, Boer MM, Resco De Dios V (2023). Modeling fuel moisture dynamics under climate change in Spain's forests. Fire Ecology (accepted).
- Sánchez-Pinillos M, Kéfi S, De Cáceres M, Dakos V (2023). Ecological dynamic regimes: Identification, characterization, and comparison. Ecological Monographs (https://doi.org/10.1002/ecm.15899).
- Bachofen C, Poyatos R, Flo V, Martínez-Vilalta J, Mencuccini M, Granda V, Grossiord C (2023). Stand structure of Central European forests matters more than climate for transpiration sensitivity to VPD. Journal of Applied Ecology (https://doi.org/10.1111/1365-2664.14383).
- Bookwalter JD, Caballero-López B, Molowny-Horas R, Claramunt-López B (2023). Understanding the Coleoptera community at the tree-line using taxonomic and functional guild approaches. Agricultural and Forest Entomology (https://doi.org/10.1111/afe.12589).
- Albacete S, Sancho G, Azpiazu C, Rodrigo A, Molowny-Horas R, Sgolastra F, Bosch J (2023). Bees exposed to climate change are more sensitive to pesticides. Global Change Biology (https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.16928).

EMF Online impact 01/06/2023 - 20/10/2023

- Laboratori Forestal Català (LFC):
  - *Stats*: 378 visits / 6:26 mins average visit duration / 1281 page views
  - *Apps most used*: IFN App / Allometrapp / DeBosCat App
- EMF Web:
  - *Stats*: 593 visits / 4:20 mins average visit duration / 2241 page views
  - *Pages most visited*: External models / CREAF models / External Data

Ecosystem Modelling Facility

WHAT WE DO

- Provide training and technical support for modelling activities to research groups at CREAF.
- Develop and promote the use of process-based and empirical models aimed at predicting the response of terrestrial ecosystems to global change at multiple scales from the forest stand to the region.
- Facilitate discovery of data sets or models relevant for ecosystem modelling activities.
- Develop tools aimed at facilitating the interoperability between data sources and models, and between different models.
- Develop and maintain interactive web applications for ecosystem data exploration and visualization.

CONTACT

Campus de Bellaterra (UAB) Edifici C

08193 Cerdanyola del Vallès

EcosystemModellingFacility@creaf.uab.cat

SEVERO
OCHOA
EXCELLENCE