TITLE: Data presented in the paper “Landscapes of facilitation: how self-organized patchiness of aquatic macrophytes promotes diversity in streams” by Cornacchia et al (Ecology, 2018)

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YEAR AND DATE CREATED: 2014-2017

DESCRIPTION: This dataset contains the experimental data and modelling presented in the paper “Landscapes of facilitation: how self-organized patchiness of aquatic macrophytes promotes diversity in streams”, with the above contributors as authors, published in Ecology. The dataset contains the underlying data (model outputs, field data) and scripts (for model and aerial picture analyses) presented in the manuscript.

SUBJECT: stream macrophytes, self-organization, spatial patterns, facilitation, Callitriche platycarpa

TEMPORAL COVERAGE: 2014-2017

SPATIAL COVERAGE: The experiments were conducted in two artificial drainage channels with natural colonization by aquatic vegetation. The channels are located along the Upper Rhône River (France), near Serriéres-de-Briord (45.815636 N, 5.427500 E) and Flévieu (45.766738 M, 5.479622 E).

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LANGUAGE: English

LINK TO PUBLICATION: Not available yet.

**SpatialModelHistogram.csv**

Frequency distribution of depth-averaged flow velocities within vegetated and unvegetated cells of the simulated domain (from the spatial model).

Column 1: Flow velocity (m/s)

Column 2: Number of cells

Column 3: Cell type (vegetated/unvegetated)

**HomogeneousCoexistenceModel.m**

Non-spatial version of the model. The code is used to predict the outcome of interaction between facilitator and beneficiary species under homogeneous conditions and to create the graph in Figure 2D.

**Berula\_Flevieu.txt**

Spatial distribution of Berula erecta vegetation in the Flevieu site. Pixels values are 0 if the species is absent, or they show the value of the blue channel in the RGB image where the species is present.

**Callitriche\_Flevieu.txt**

Spatial distribution of Callitriche platycarpa vegetation in the Flevieu site. Pixels values are 0 if the species is absent, or they show the value of the blue channel in the RGB image where the species is present.

**Groenlandia\_Serrieres.txt**

Spatial distribution of Groenlandia densa vegetation in the Serrieres site. Pixels values are 0 if the species is absent, or they show the value of the blue channel in the RGB image where the species is present.

**Callitriche\_Serrieres.txt**

Spatial distribution of Callitriche platycarpa vegetation in the Serrieres-de-Briord site. Pixels values are 0 if the species is absent, or they show the value of the blue channel in the RGB image where the species is present.

**TransplantationExp.csv**

Size of mother ramets at the end of the experiment and daughter ramets produced through vegetative reproduction for each beneficiary species.

BeneficiarySpecies : Beneficiary species in the transplantation experiment

Position : Position of the transplant around the Callitriche patch

MotherRametHeight : Mother ramet height (cm) of the individual transplants per position

DaughterRametHeight: Daughter ramet height (cm)

Transplant\_N : Identification code for the transplanted individual

**SpacerLength.csv**

Data on spacer length (distance between consecutive individuals produced through vegetative reproduction).

BeneficiarySpecies : Beneficiary species in the transplantation experiment

Position : Position of the transplant around the Callitriche patch

SpacerLength : Distance (in cm) between consecutive individuals in the clone

AverageVelX : Depth-averaged flow velocity (m/s)

**DaughterRametDM.csv**

Dry mass of daughter ramets produced by the transplants through vegetative reproduction.

BeneficiarySpecies : Beneficiary species in the transplantation experiment

Transplant\_N : Identification code for the transplanted individual

FacilitatorPatch : Identification code for the facilitator (Callitriche) patch

Position : Position of the transplant around the Callitriche patch

DaughterRamet\_DM : Daughter ramet dry mass (g)

AverageVelX : Depth-averaged flow velocity (m s-1)