Patterns of hydrochorous dispersal in agricultural channels

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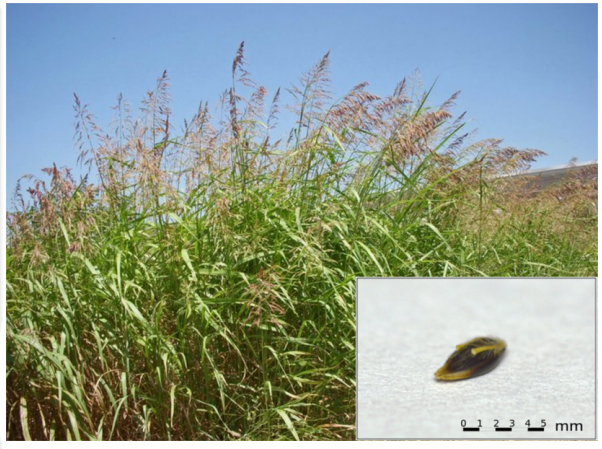
Our case study

Specificities of the Johnsongrass

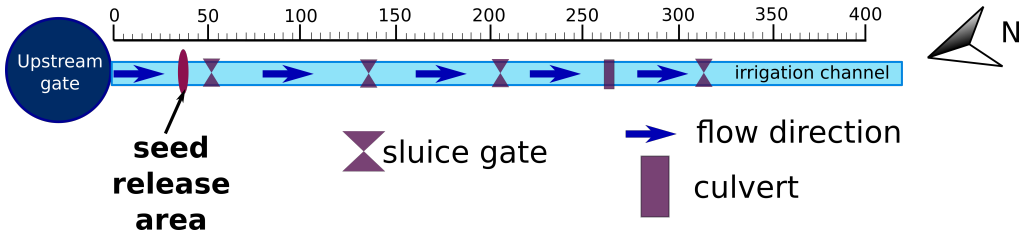
- weed status
- hydrochorous dispersal
- buoyant seeds

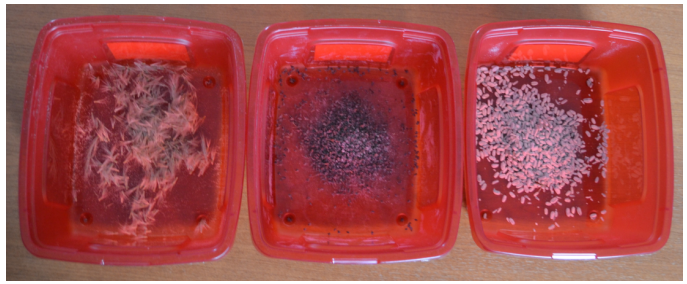


Specificities of irrigated channels

- hay production in permanent grasslands
- oriented network
- hydraulic structures
- long dry periods
- terrestrial vegetation in the mainstream

A non invasive method to reconstruct a dispersal kernel





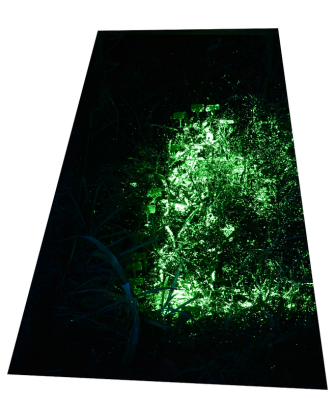
Marking procedure

- UV powders (different colors)
- Eulerian method for relocating

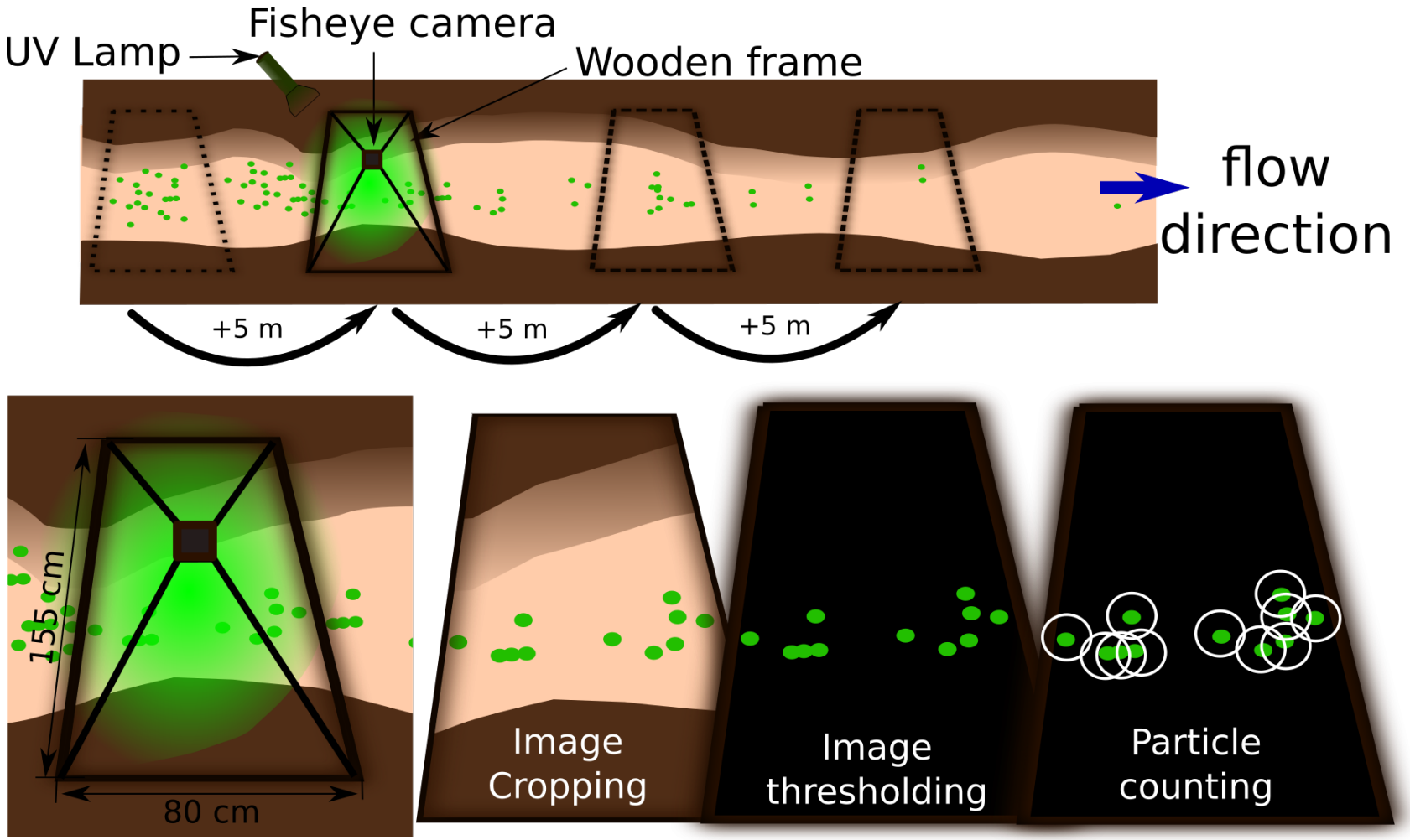
Tekiela and Barney 2013

Relocation procedure

- Fisheye fixed on wooden frame
- Image processing using ImageJ©



A non invasive method to reconstruct a dispersal kernel



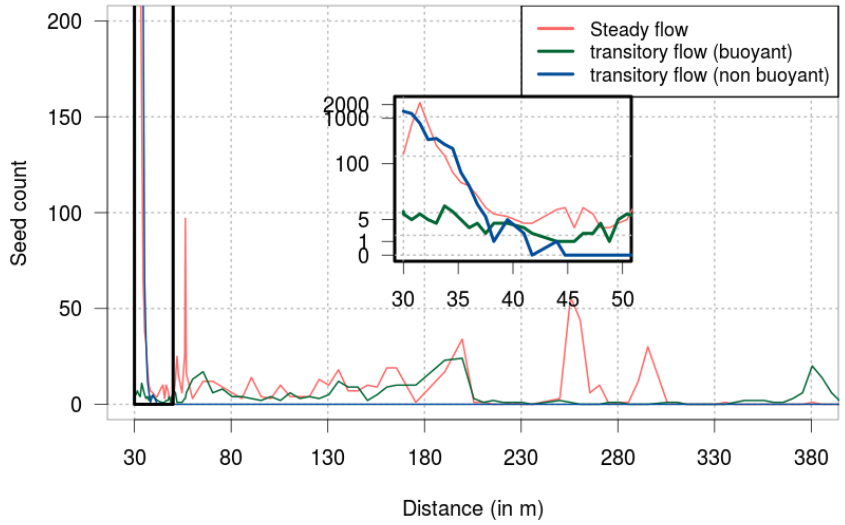
Linking the dispersal kernel to extrinsic factors

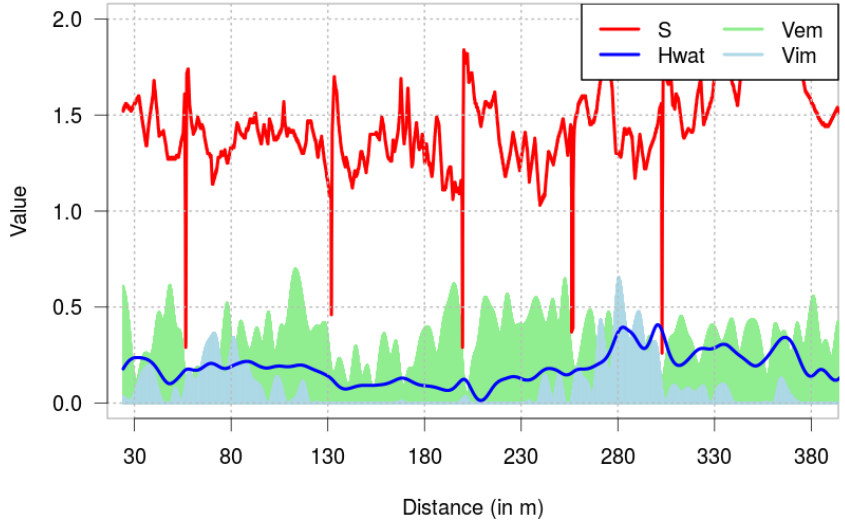
Specificities of the dispersal kernel

- Sharp peak and fat tail
- Different behavior according to immediate buoyancy

Variabilities of extrinsic factors

- Hydraulic factors
- Other elements : hydraulic structures and vegetation





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Rudi, G., Bailly, J.-S., Belaud, G., and Vinatier, F. (2018). Characterization of the long-distance dispersal of Johnsongrass (*Sorghum halepense*) in a vegetated irrigation channel. River Research and Applications, 34(9), 1219–1228. `https://doi.org/10.1002/rra.3356`