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INTRODUCTION

Ditch-banks serve as important refuges for wetland plant species. Seeds of these species are usually highly buoyant. Therefore, ditches may act as dispersal corridors for hydrochorous (i.e. water dispersing) seeds and thereby connect fragmented habitat patches of wetland species.

METHODS

•Surface current, water velocity at mid-depth, wind speed and seed transport velocity of floating seeds of three wetland species (Fig. 1) in a ditch in the Vecht river plain (the Netherlands) were measured

We investigated to what extent ditches can act as dispersal corridors, and which factors determine seed transport in ditches.



- simultaneously.
- •1000 painted *C. pseudocyperus* seeds were released and retraced in 4 different ditches (12 experiments).



Fig. 1 Characteristics of the seeds of the three investigated wetland species (images: Cappers, R.T.J., Bekker, R.M. & Jans, J.E.A. (2006) Digitale Zadenatlas van Nederland (Digital Seed atlas of the Netherlands). Barkhuis Publishing & Groningen University Library, Groningen (www.seedatlas.nl).

RESULTS

1) Direction of hydrochorous seed

0.09 Carex pseudocyperus

Iris pseudacorus

Sparganium erectum

transport was always similar to wind direction. Seed transport was significantly correlated to wind speed (Fig. 2) and surface current, but not to water flow at mid-depth.

2) Seeds for which a large ratio of the volume protrudes from the water were most affected by wind (Fig.3, *P*<0.001).





Wind was the main factor driving hydrochorous seed transport in ditches. Effective transport distances were limited, due to trapping of seeds (mainly by water plants).

When deciding on conservation measures, it should be taken into account that seeds can move in any direction via water, but not farther than several hundreds of meters.

