

BLUETONGUE VECTORS IN THE NETHERLANDS



Willem Takken
Wageningen University & Research Centre



SCOTTISH MIDGES

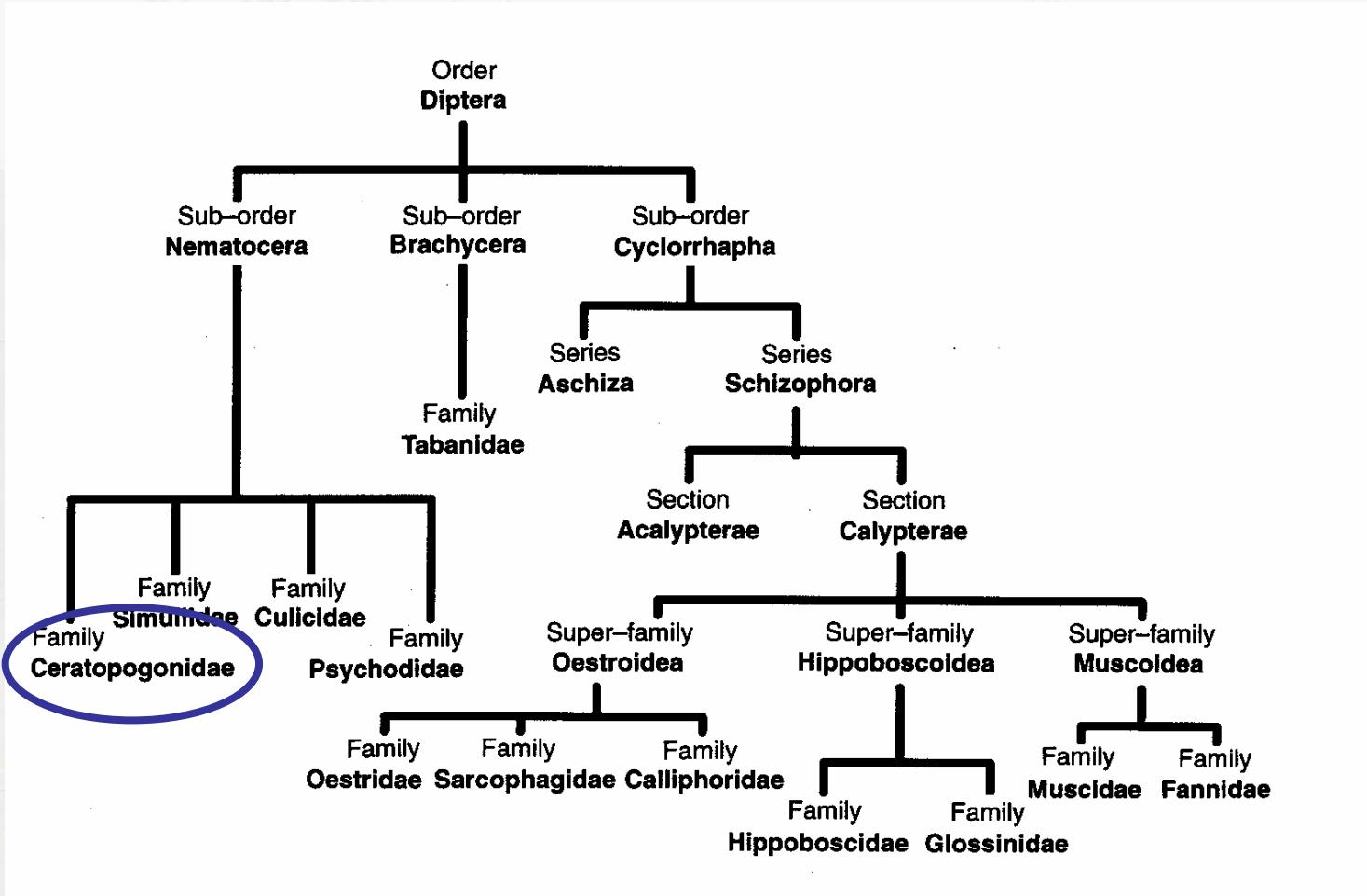
AT WORK



chris

POTENTIAL VECTOR-BORNE DISEASES IN THE NETHERLANDS

Disease	Vector species	Distribution	Occurrence in Europe	Control possible?
Leishmaniasis	Sandfly (<i>Phlebotomus</i> spp.)	Mediterranean countries	common	Treatment of infected hosts
Tick-borne encephalitis	<i>Ixodes ricinus</i>	Central and Northern Europe	common	Vaccination
Rickettsiosis	<i>Ixodes ricinus</i>	Western Europe	emerging	???
Lyme disease	<i>Ixodes ricinus</i>	Europe, N. Africa	common, emerging	Prevention of tick bites, anti-biotics
West Nile	<i>Culex pipiens</i> et al.	Southern/Eastern Europe	rare (1996, 1999, 2003, 2004)	No (vaccine development in progress)
Ockelbo disease	<i>Culicidae</i> spp.	Scandinavia, France	common	???
Blue tongue	<i>Culicoides imicola</i>	Mediterranean countries	emerging	???
African swine fever	<i>Culicoides</i> spp.	??? (Spain)	???	???
African horse fever	<i>Culicoides imicola</i>	North Africa	???	???
Babesiosis	<i>Amblyomma</i> spp.	Southern Europe, Africa	common	Anti-biotics for affected animals

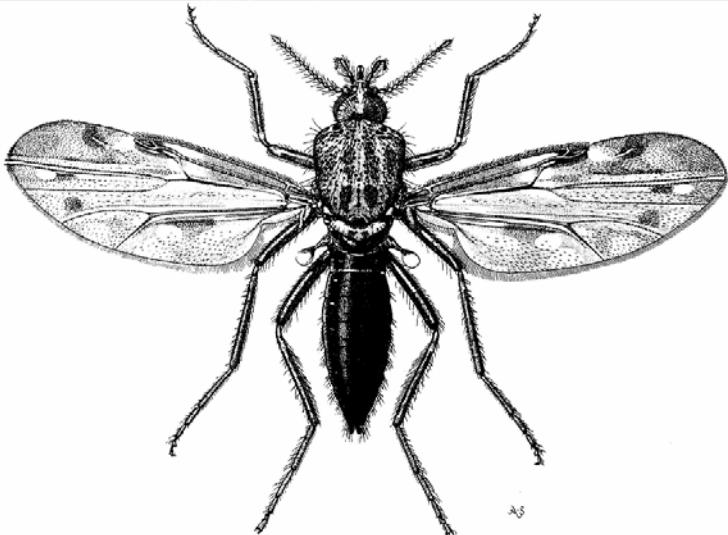


IMPORTANCE OF DIPTERA AS PESTS IN LIVESTOCK INDUSTRY



Ceratopogonidae

In Dutch: **Knutten**



Vectors of African Horse
Sickness, Blue tongue,
Bovine ephemeral fever

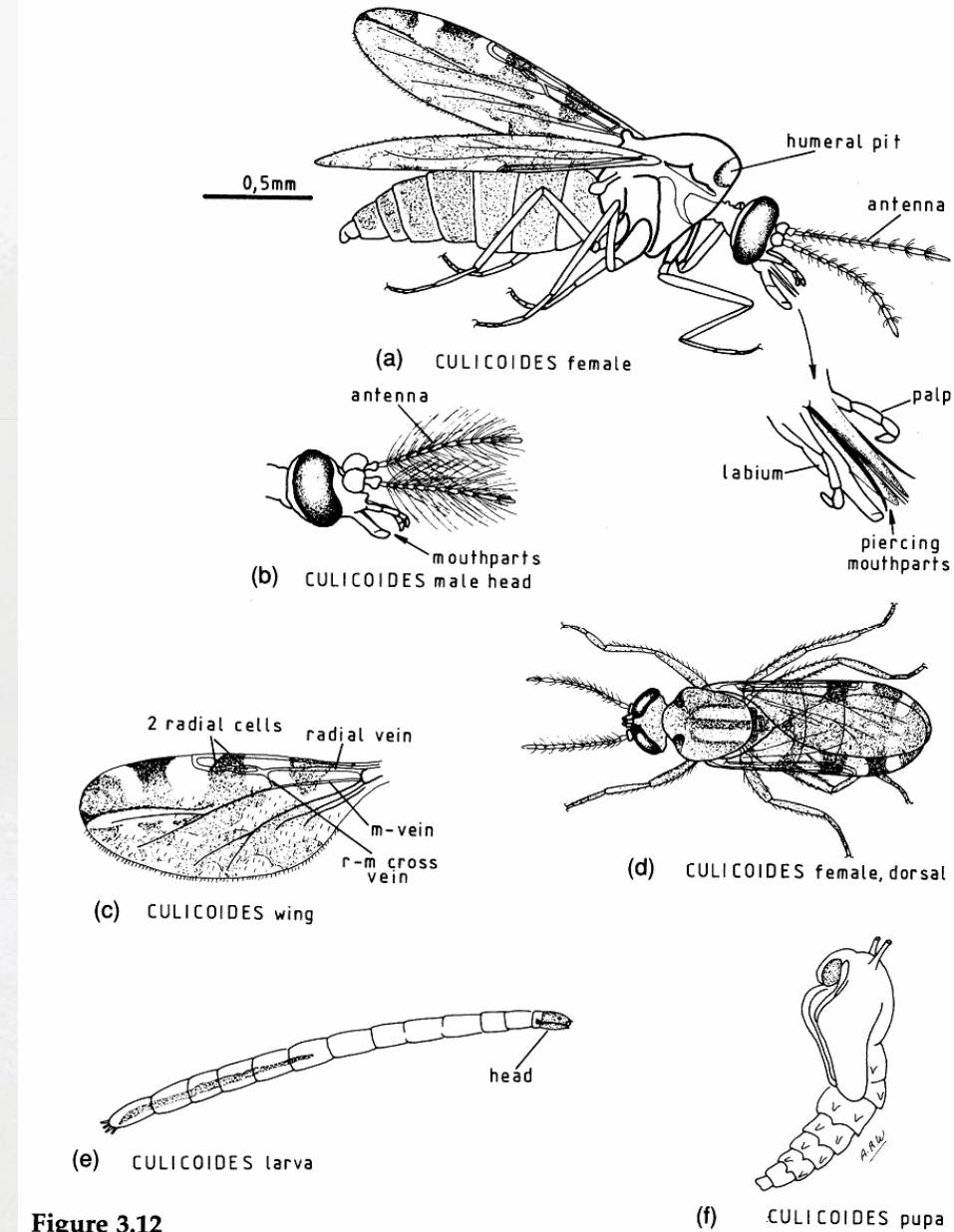
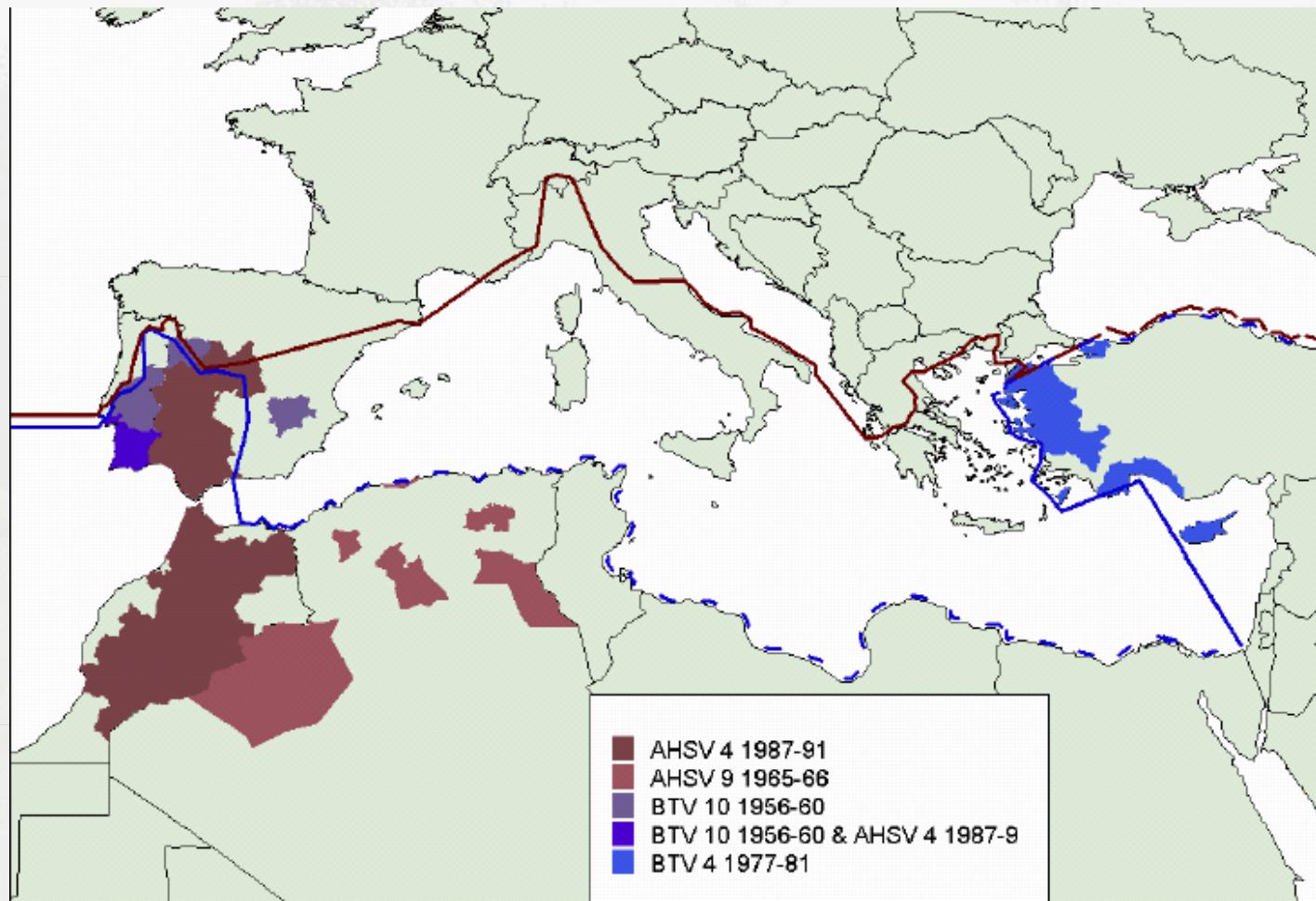


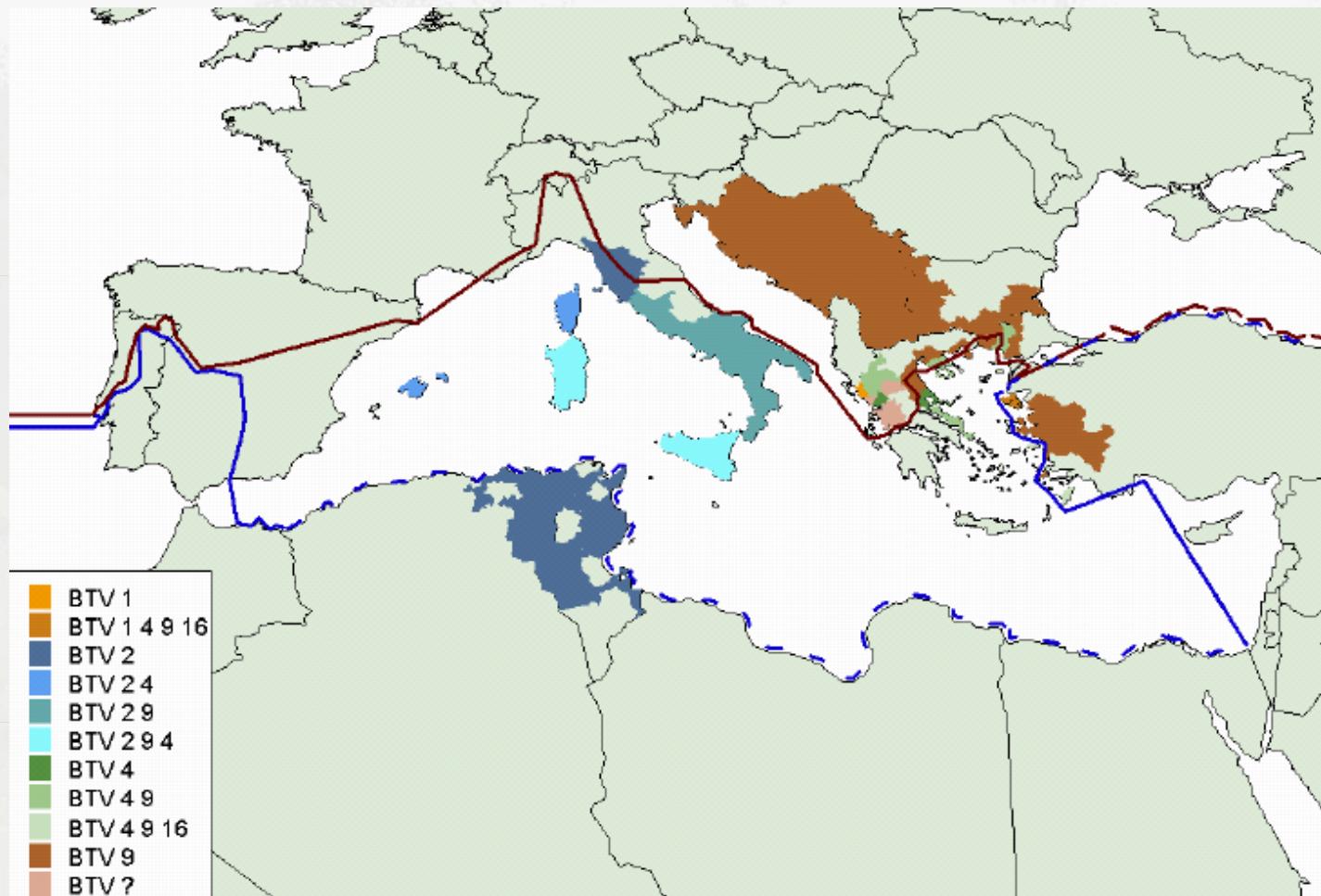
Figure 3.12





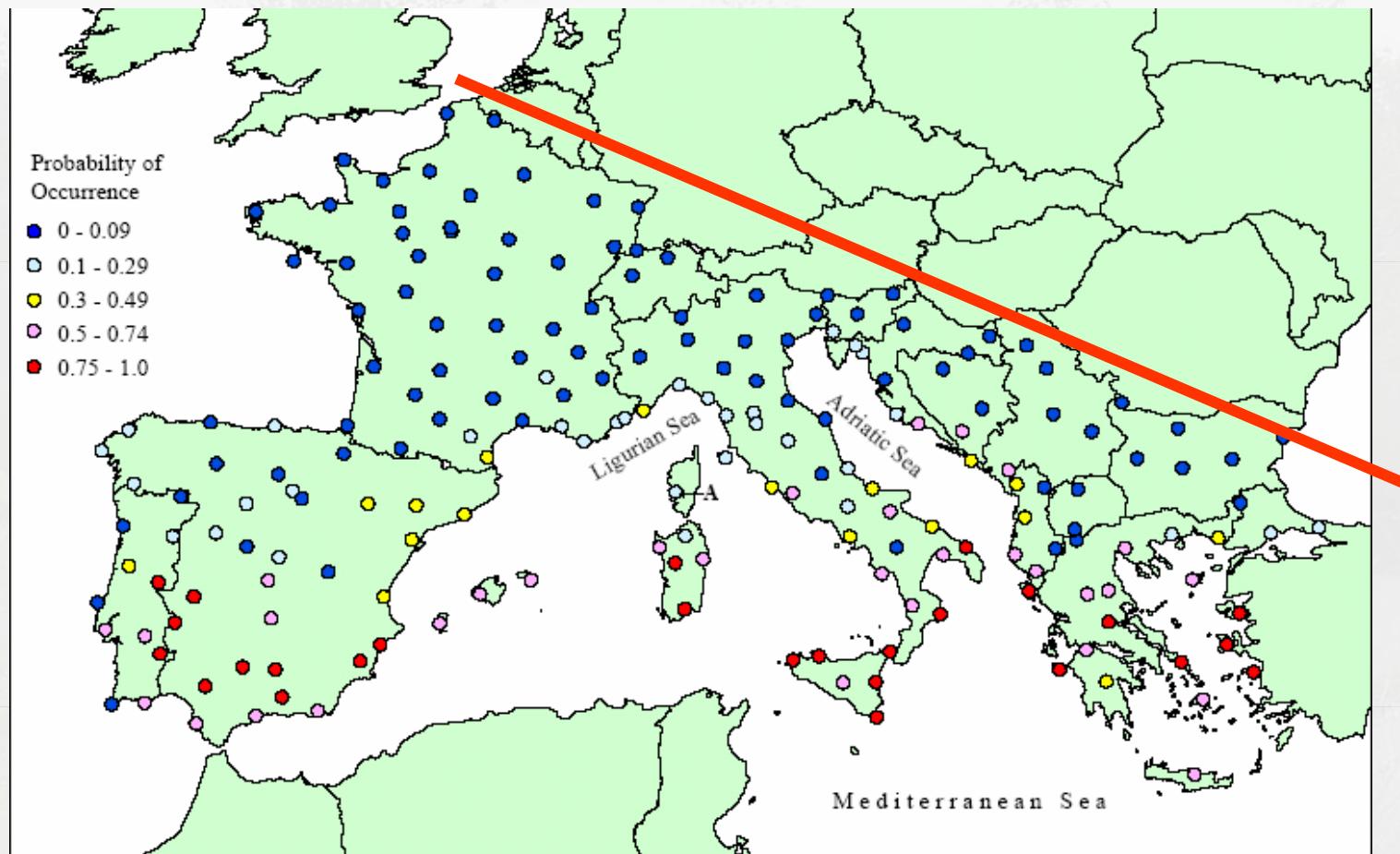
African Horse Sickness (AHSV) and Blue tongue virus (BTV) outbreaks
up to 1998





Provinces or regions affected by Blue tongue between 1998 and 2003.
Key: serotypes of the outbreak





Suitability of sites in Europe for *Culicoides imicola*



Studies in different habitats in the Netherlands:

- Wetland (1 area)
- Peatland (4 areas)
- Flood plain (3 areas)
- Biological farms (4 areas)



Oostvaardersplassen (Flevoland)



Peatland areas

Engbergsdijksevenen ZW(Overijssel)



Engbergsdijksevenen NO(Overijssel)



Korenburgerveen (Gelderland)



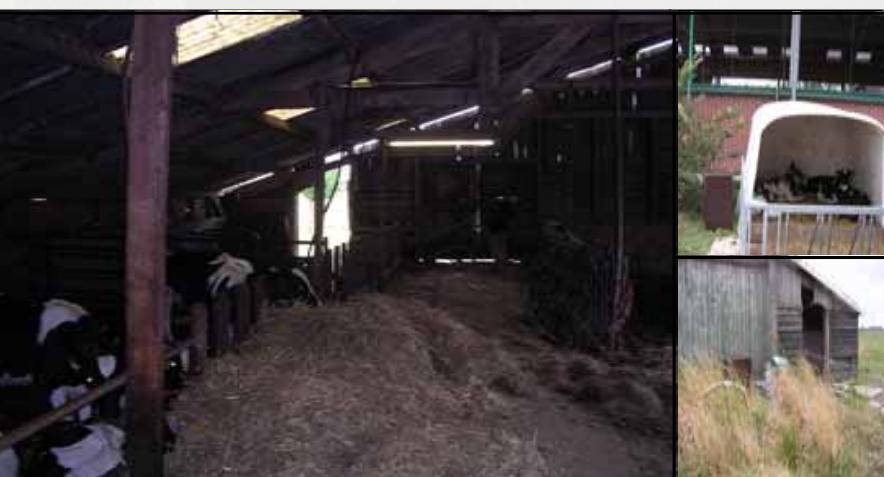
Grote Peel (N.Brabant/Limburg)



Engbertsdijksevenen



Farming systems with variety of production methods

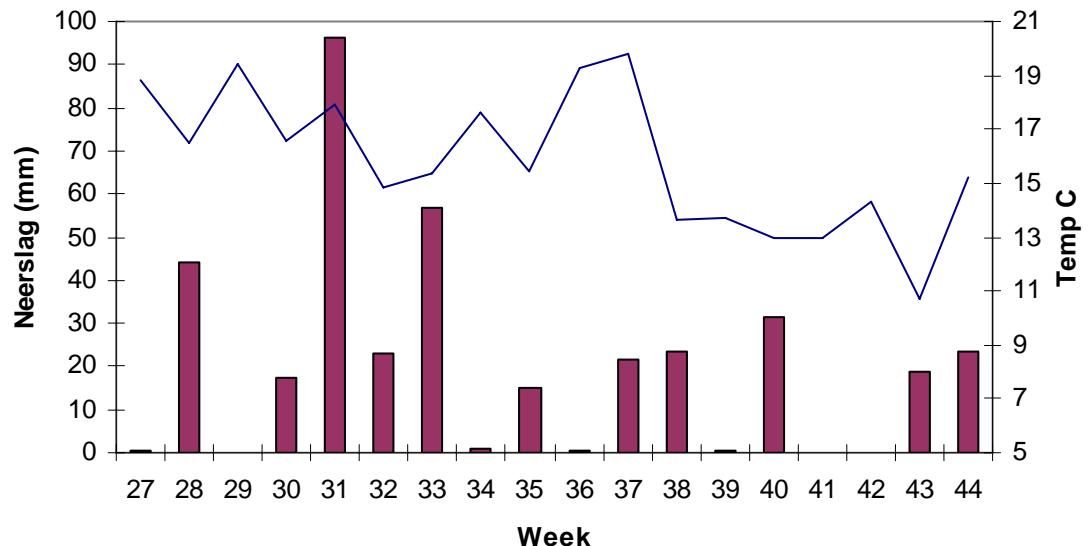






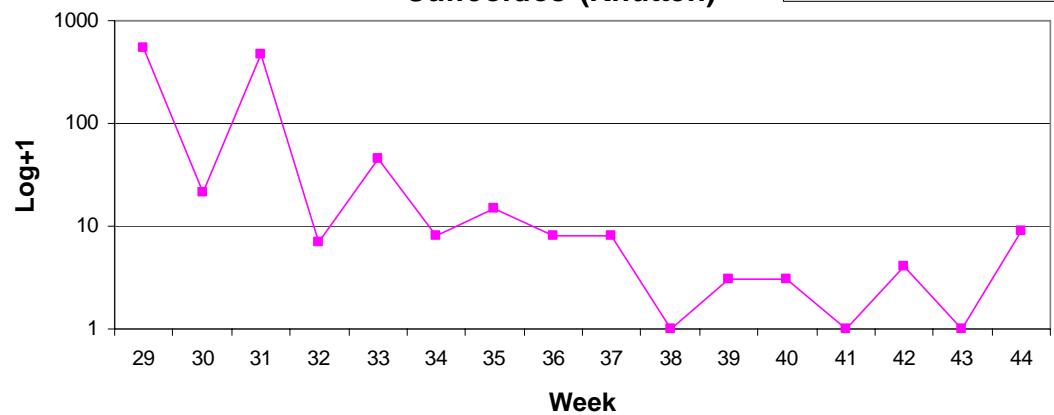
Weerdata De Bilt 2005

■ Neerslag
— TG



Wetland *Culicoides* (Knutten)

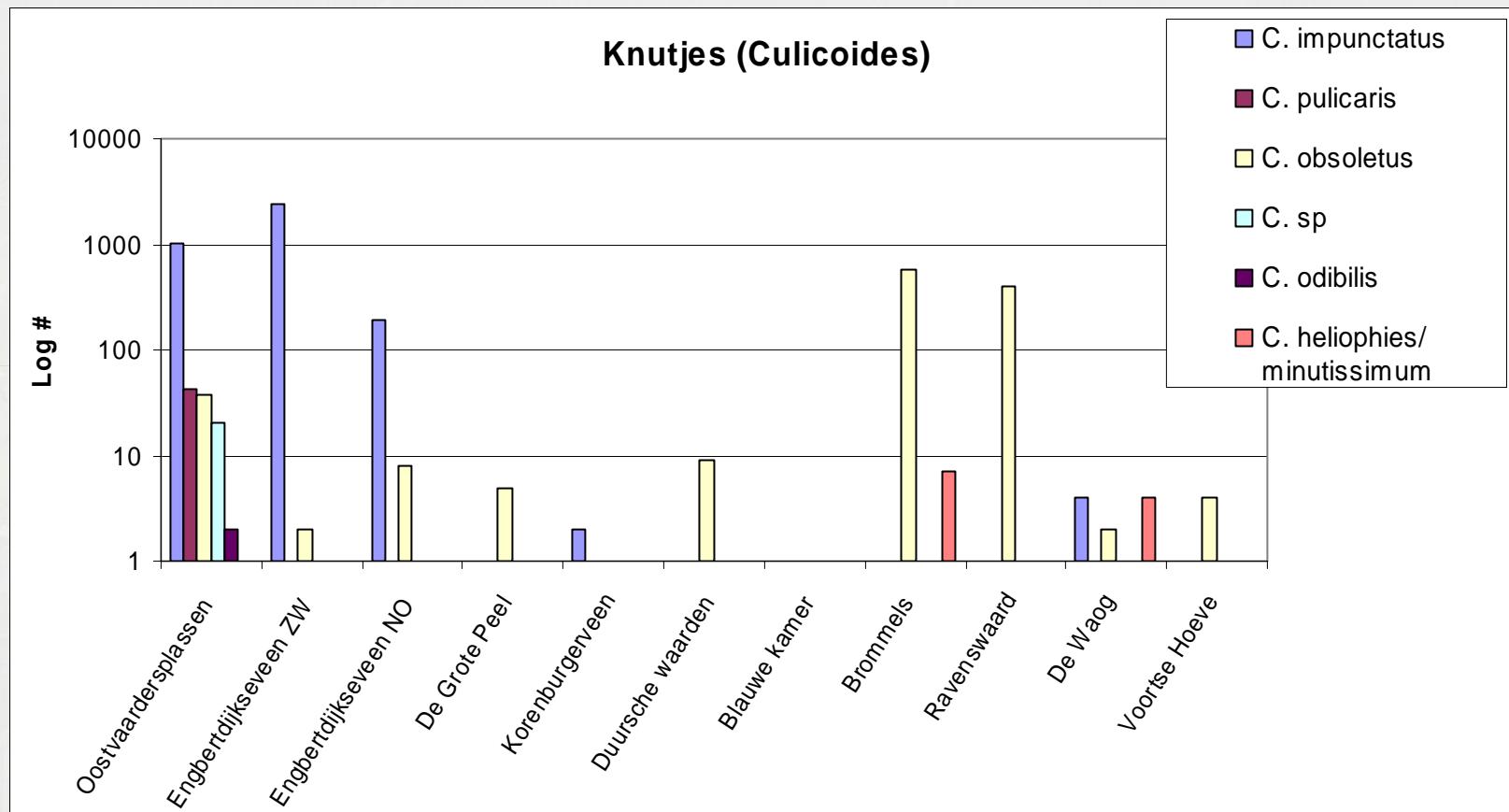
■ Oostvaardersplassen



Biting midges (*Culicoides*)

Total catch 2005

<i>C. impunctatus</i>	3640
<i>C. obsoletus</i>	1054
<i>C. pulicaris</i>	43
Unidentified <i>Culicoides</i>	20
<i>C. heliophies/</i> <i>minutissimum</i>	4
<i>C. odibilis</i>	2





Slenaken, Zuid Limburg - 20 August 2006