

Spread and impact of invasive weeds in Austria



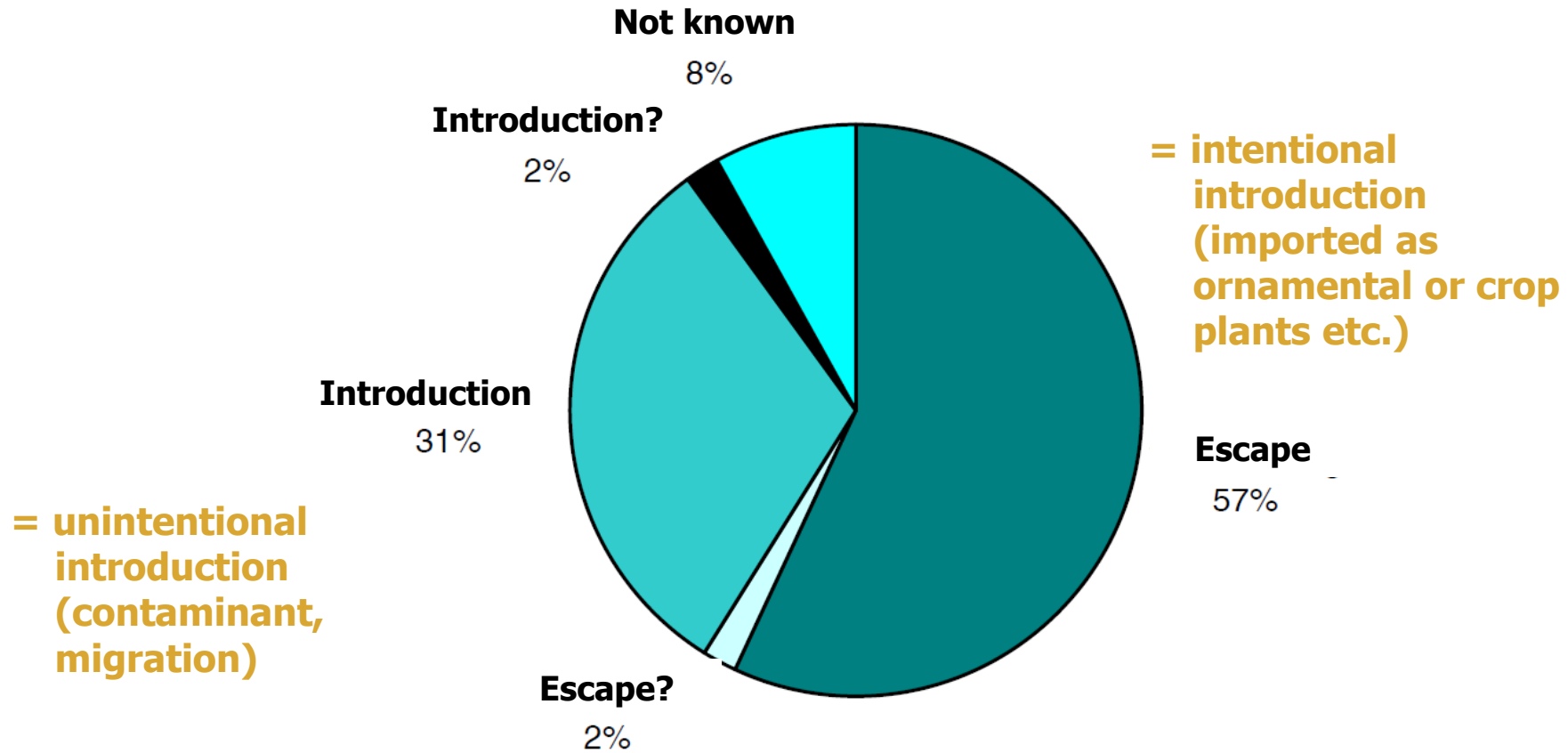
**EPPO Panel, Herbicides and Plant Growth Regulators
10. February 2016
Dr. Swen Follak**



Austria:

- **1.100 Neophytes**
- **27%** of the country's flora
- **35** are invasive /potentially invasive

How did they come to us?



Typical plant community in southern Styria

*Galinsoga
parviflora*

- ornamental plant/botanical gardens
- 1850 in Vienna
- >1950 in all federal states BL documented

*Datura
stramonium*

- > Since 1542 in Europe (ornamental plant)

*Nicandra
physalodes*

- ornamental plant
- first time in 2002 observed
- introduced with garden compost?

(Subjective) List of important invasive weeds in Austria



Scientific name	Common name
<i>Abutilon theophrasti</i>	Velvetleaf
<i>Amaranthus</i> spp.	Amaranth
<i>Ambrosia artemisiifolia</i>	Ragweed
<i>Asclepias syriaca</i>	Common milkweed
<i>Cynodon dactylon</i>	Bermudagrass
<i>Cyperus esculentus</i>	Yellow nutsedge
<i>Datura stramonium</i>	Jimsonweed
<i>Sicyos angulatus</i>	Bur cucumber
<i>Sorghum halepense</i>	Johnsongrass
<i>Solanum carolinense</i>	Horseweed

Criteria:

- high (potential) yield loss
 - biology (perennials, late emergence ...)
 - difficult to control (no efficient control options available ...)
- spreading

What we do

- Field monitoring of (selected) invasive weeds
- Analysis of their invasion history (pathways of entry)
- Compiling distribution data, mapping
- Spread dynamics, potential distribution (climate change)
- Recommendations for containment and control

Cyperus esculentus

- *Cyperaceae*, sedges
- **Typ: „indestructible“**
- Perennial C₄-herb, producing tubers and stolons, seeds
- High **competitive ability** in low-growing crops (soybean, oil-pumpkin, vegetables), also in maize (when it emerges together with the crop)
- Control options ↓
> **high densities** occur when control practices, in particular herbicide use, reduce competitive pressure from other weeds



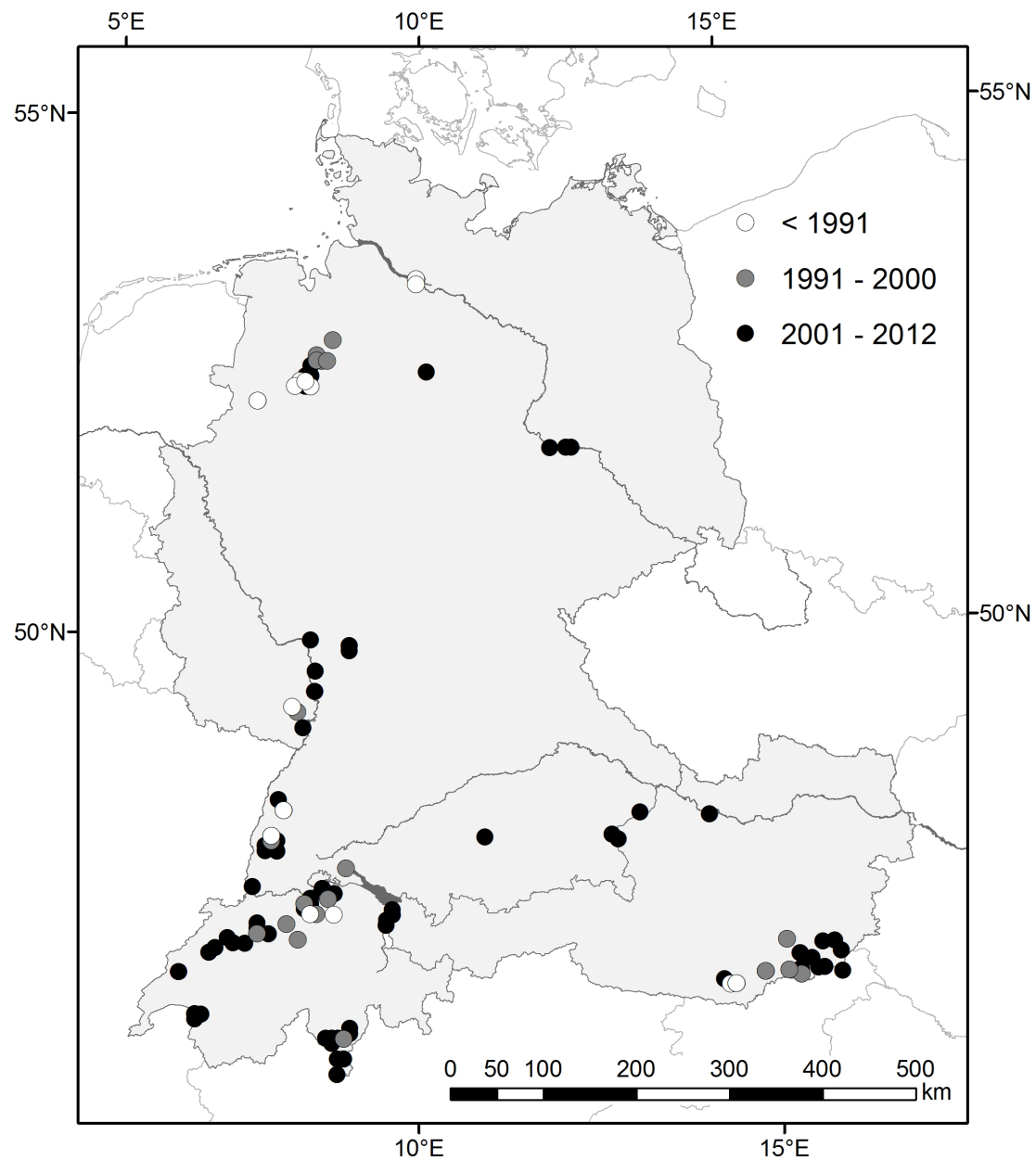




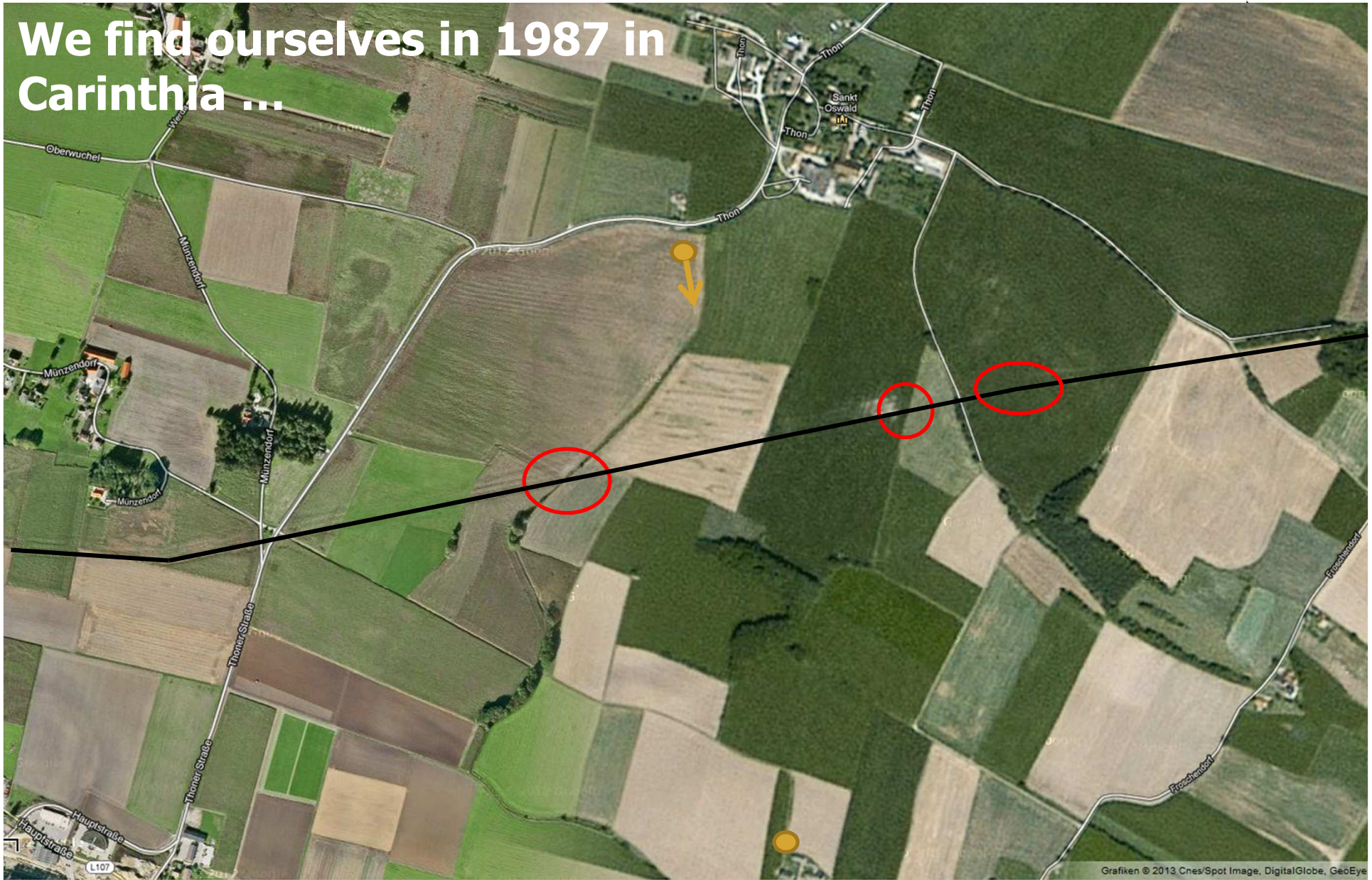
shade

light

Locally distributed, but expanding, not only in Austria



We find ourselves in 1987 in Carinthia ...



... and then in 2009

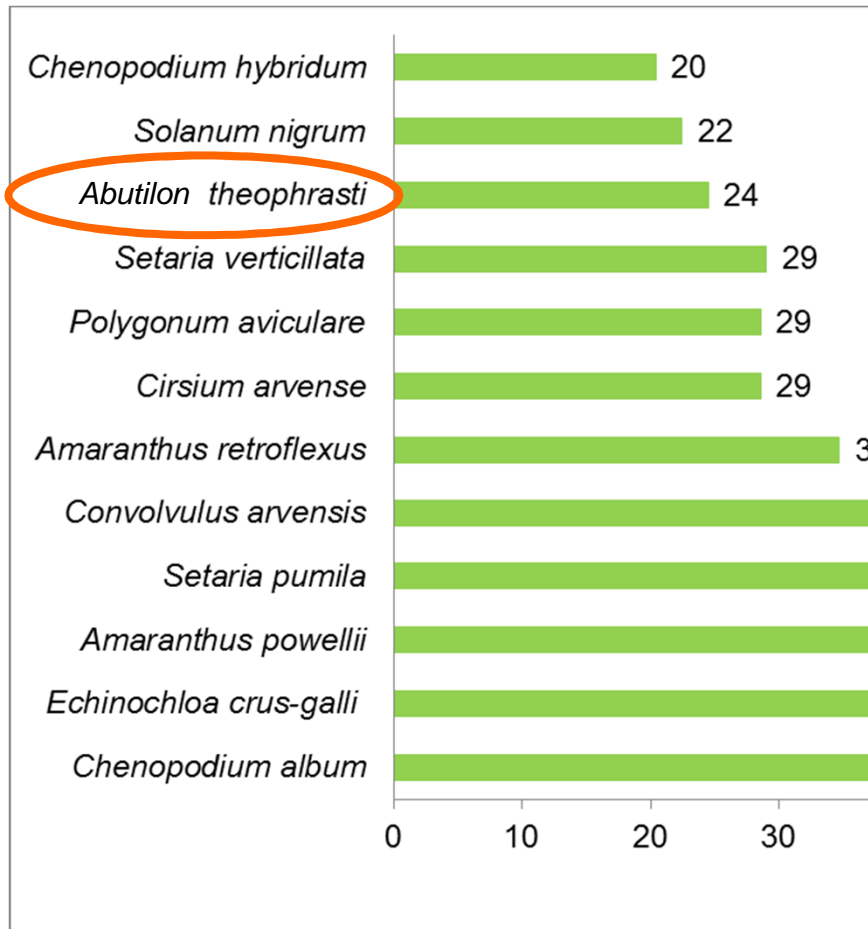


Abutilon theophrasti

- Annual C₃ species with large, heliotropic leaves and yellow-orange flowers and a rapid growth
- **Typ: „warmth loving giant“**
- First occurrence on arable land: 1973;
- Introductions by contaminated catch crop seeds [?!]
- High seed production & seed longevity, germination over a long period
- Frequently found in sugar beet and maize
- Surveillance of incipient infestations and subsequent uprooting of small populations



Main weeds in Burgenland (e Sugar beet



n = 49 sugar beet fields, 2012, after control



***Abutilon theophrasti* in maize**



Ambrosia artemisiifolia

- Annual herb and pioneer species
- **Typ: „warmth loving giant“**
- First occurrence in 1883
- Rapid spread (>1990), naturalized in large parts of the lowlands of Austria
- Arable land and along major roads
- Basically, **we know what to do ...**
- Still problematic in oil-pumpkin, soybean, sunflower



28.07.2012

Goritz bei Radkersburg / Styria



05.09.2012

Any news?

Goritz bei Radkersburg / Styria



1. More quickly, increasingly dense, further west, up and up

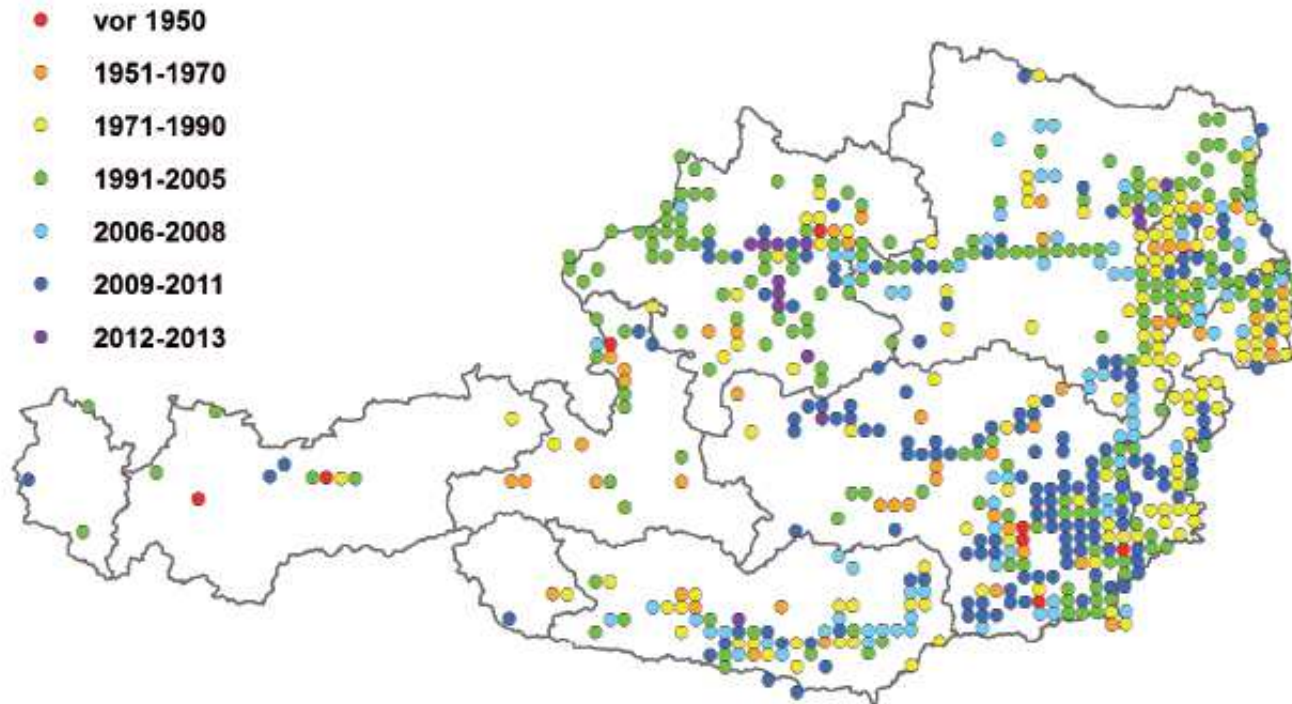


Abb. 2 Verbreitung von *Ambrosia artemisiifolia* in Österreich, dargestellt in den Rasterfeldern („Quadranten“, ca. 4 x 5 km) der floristischen Kartierung Mitteleuropas. Die Farbe indiziert unterschiedliche Zeiträume der Erstfunde in den jeweiligen Rasterfeldern.

2. The solution is just around the corner ... AGES

- Ragweed beetle: *Ophraella communa*
 - Introduced, origin: North America, biocontrol agen in China
 - 2013: Milano, Turin (IT), Ticino (CH)
 - 2014: spread to the east, occurrences already near Padua (IT)

