

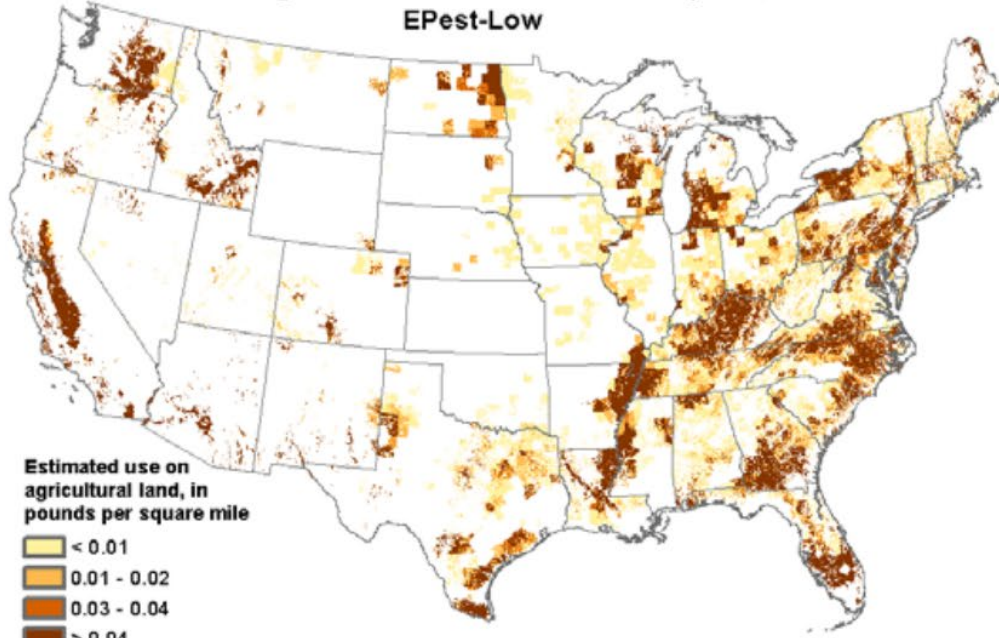


CONTAMINATION OF MINNESOTA'S WATER WITH NEONICOTINOID INSECTICIDES

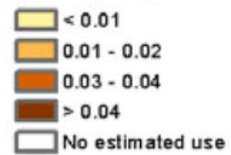
LUCAS RHOADS, NRDC ACTION FUND

Estimated Agricultural Use for Imidacloprid , 2003

EPEst-Low

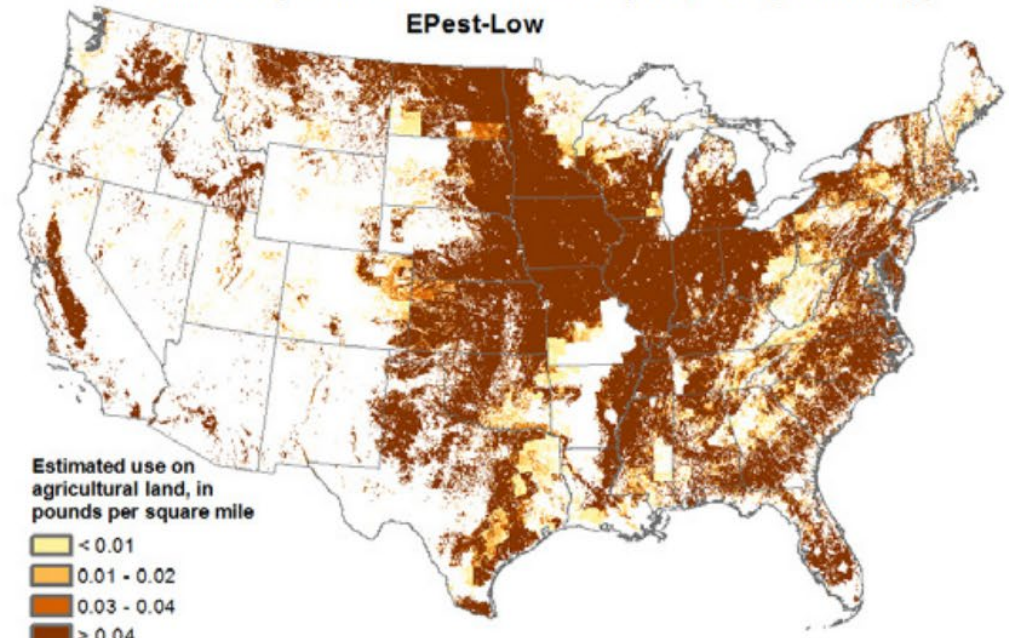


Estimated use on agricultural land, in pounds per square mile



Estimated Agricultural Use for Imidacloprid , 2014 (Preliminary)

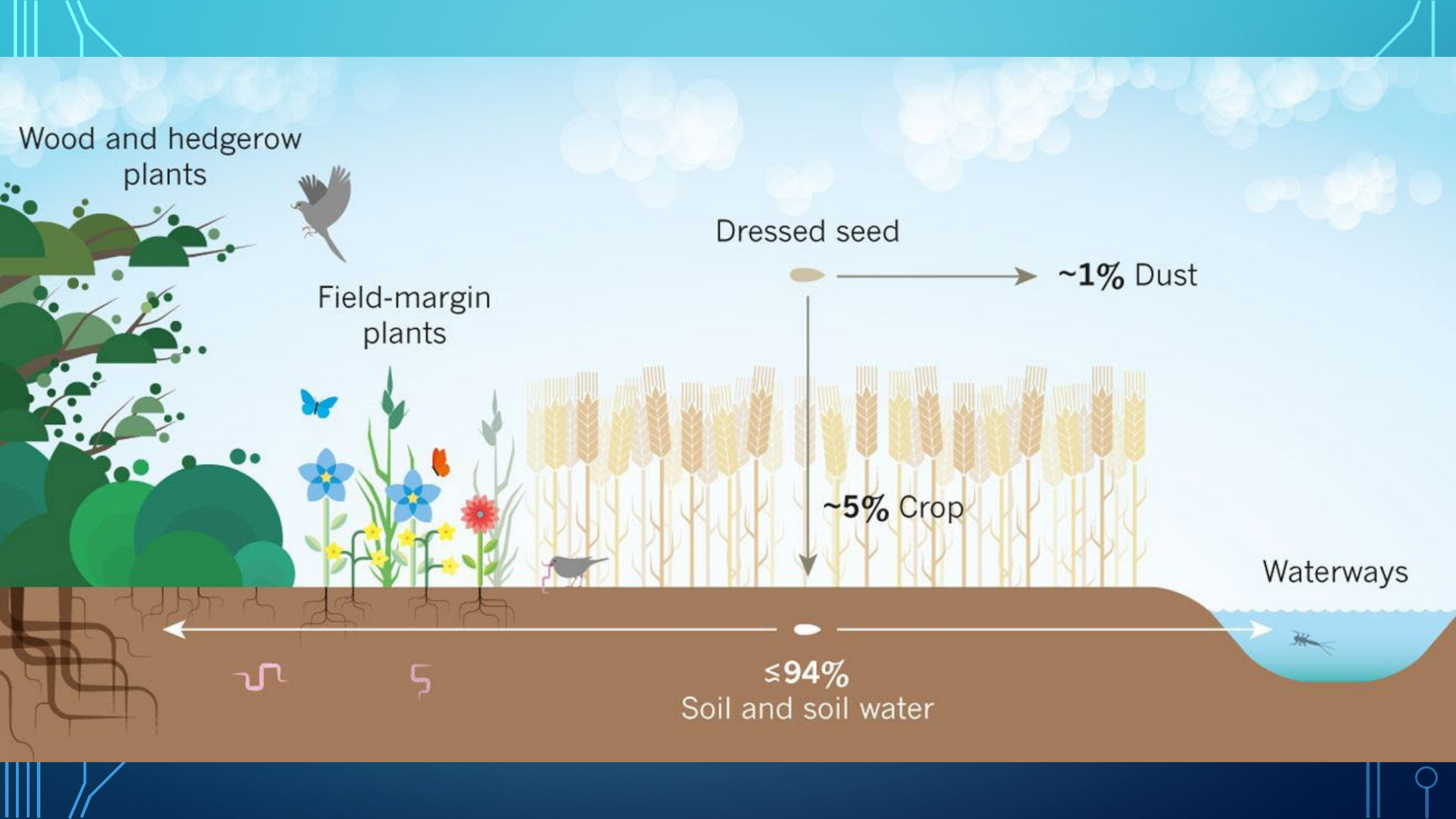
EPEst-Low



Estimated use on agricultural land, in pounds per square mile



U.S. Geological Survey (USGS), *Estimated Agricultural Use for Imidacloprid, 2003, 2014*, <https://on.doi.gov/2M7L1Dd>, <https://on.doi.gov/2ScRosN>.

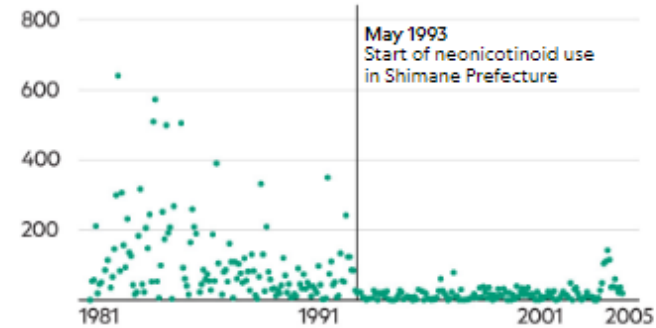


RISKS TO AQUATIC ECOSYSTEMS

- Highly toxic to aquatic invertebrates
- Commonly found above chronic benchmarks for harm
- Yamamuro et al., 2019

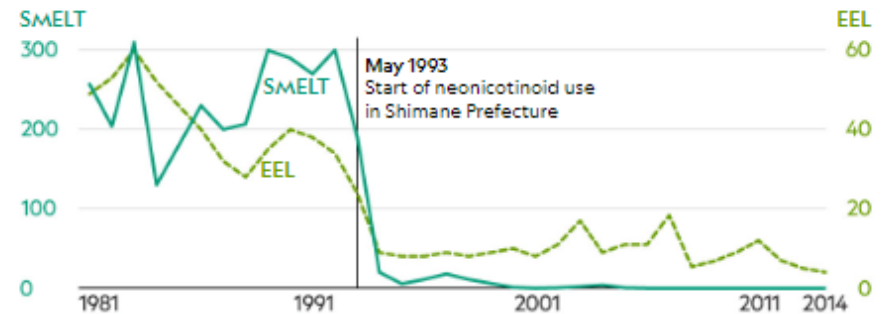
Runoff containing neonicotinoids from fields and paddies was linked to a dropoff of zooplankton biomass in Lake Shinji.

Monthly measurement of zooplankton in micrograms carbon per liter present in water from Lake Shinji



Populations of commercial smelt and eel in Lake Shinji, which were reliant on zooplankton and benthos as a source of food, began to collapse.

Tons of smelt and eel, caught annually in Lake Shinji



JOHN KAPPLER, NG STAFF.
SOURCE: MASUMI YAMAMURO ET AL., SCIENCE, 2019

RISKS TO HUMAN HEALTH

- **Found in over 95% of pregnant women's bodies nationwide**
 - Neurotoxic- Permanently Bind to nAChR receptor
 - Travel from pregnant mothers to fetus
 - Increased risk of tetralogy of Fallot, anencephaly, autism spectrum disorders





CONTAMINATION IN MINN.

- Contamination of white-tailed deer
 - 2019: 61%
 - 2021: 94%
- MDA Water Data: Worsening Contamination from 2010-2020
- Berens et al. 2021:
 - Rivers and Streams: 97% (n=61)
 - Groundwater: 74% (n=35)

TREATED SEEDS

- Over 14 million acres of farmland
- Not regulated as pesticides
- MDA recommended regulatory program in 2016




NON-AGRICULTURAL USES

- Lawns and Gardens
- Higher rates per-acre





LEGISLATIVE OPPORTUNITIES

- HF 2472 / SF 1718: Treated Seed Regulatory Program
 - HF 2805 / SF 1915: Non-Agricultural Neonic Use
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