Drainflow Risk Communication

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Cambridge Environmental Assessments

Introduction

- Background
  - Pathways to surface water
- Introduction to CRD Drainflow Risk Communication Project
  - Risk Decision Tree
  - Development of the tools and resources
- Online drainflow risk tool and resources
  - Website
  - Webtool

Background

- Range of possible surface water exposure pathways
  - Point Sources (filling/handling, etc)
  - Direct (spray drift)
  - Surface Runoff
  - Drainflow
- Autumn/winter leaching to drains a key exposure pathway for many compounds of WFD concern (e.g. PS2242)

Project Objective

PS2245 - Develop a package of drain flow risk communication tools to aid best practice and assist in minimisation of risk

- Proof of concept
- Complements Crop Protection Management Plans
- Complements individual product stewardship campaigns

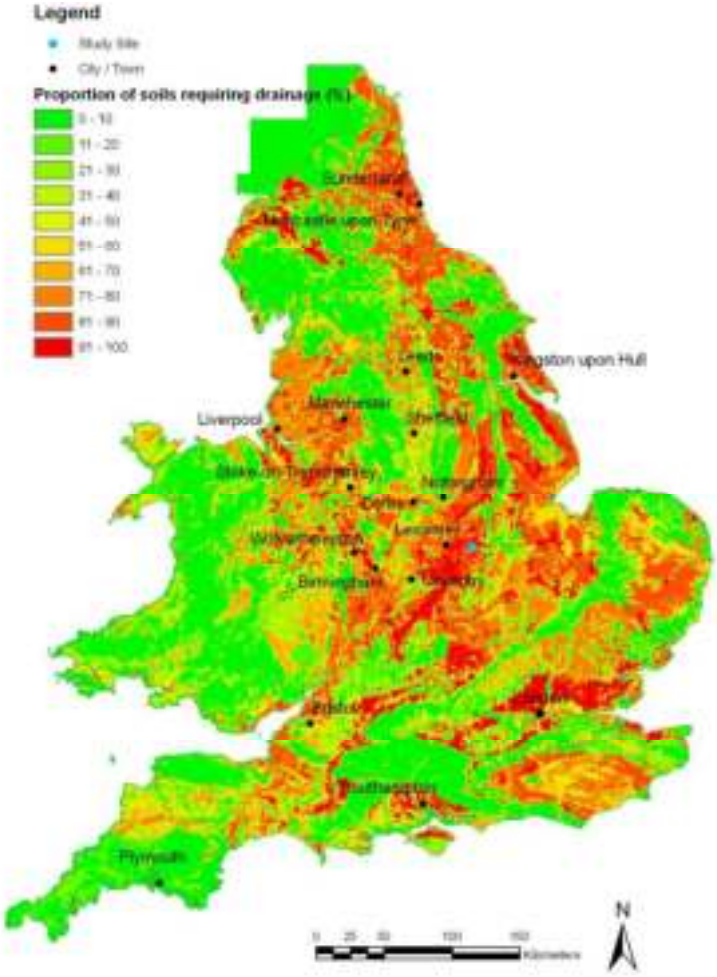
Aimed at planning phase of crop protection management

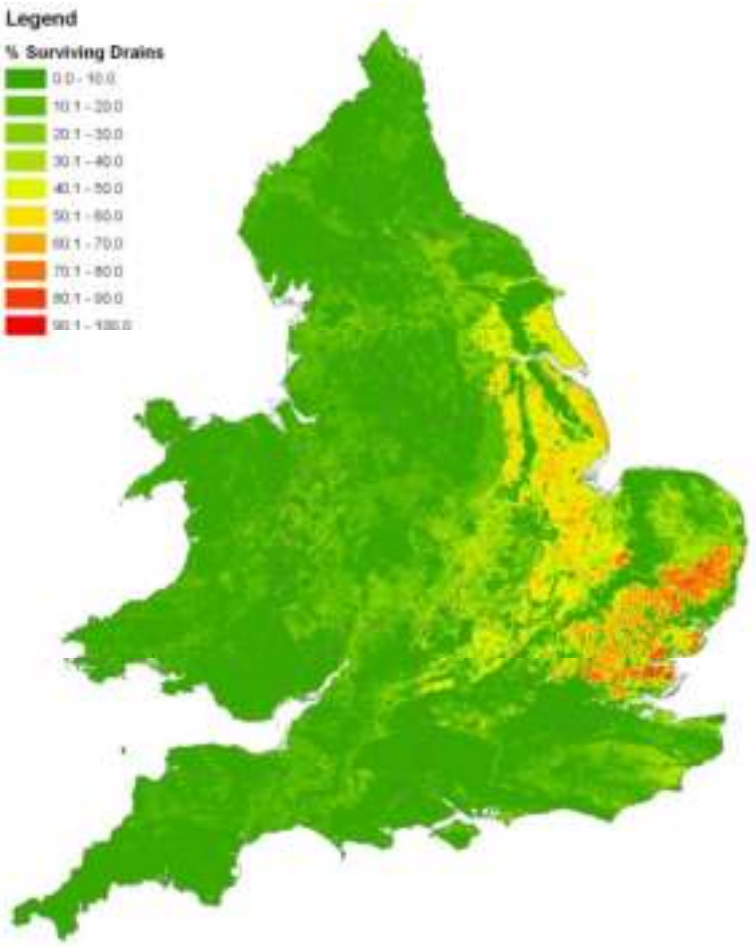
- Pre-season planning
- Agronomist recommendations

Risk Decision Tree

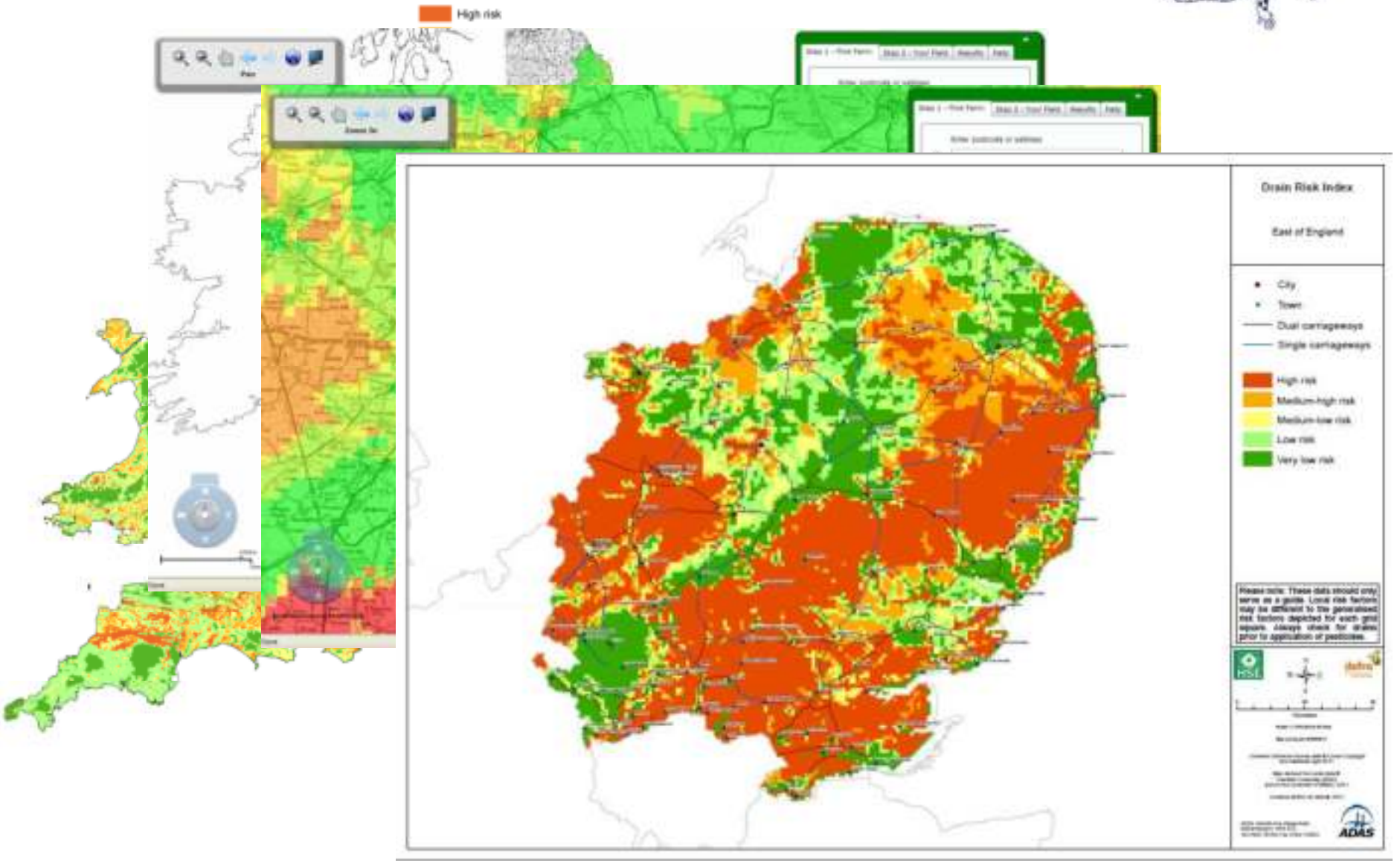
1. Spatial Risk Assessment
   - Am I in an inherently risky location?
2. Temporal Risk Assessment
   - Am I planning to apply at an inherently risky time?
3. Usage Risk Assessment
   - Am I planning to apply a potentially risky compound?
     - Compounds of WFD concern
   - Is my intended application regime potentially risky?

Spatial Risk Assessment





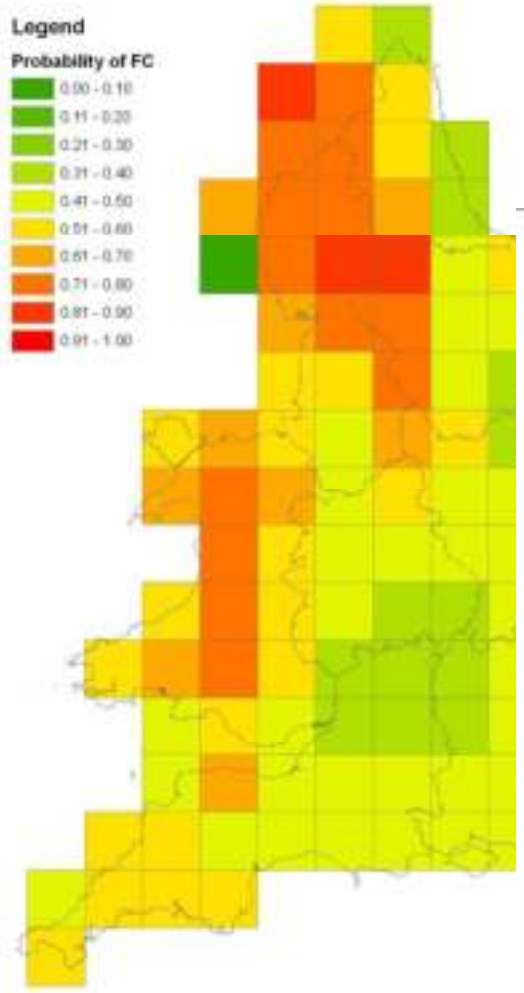
Spatial Risk Assessment

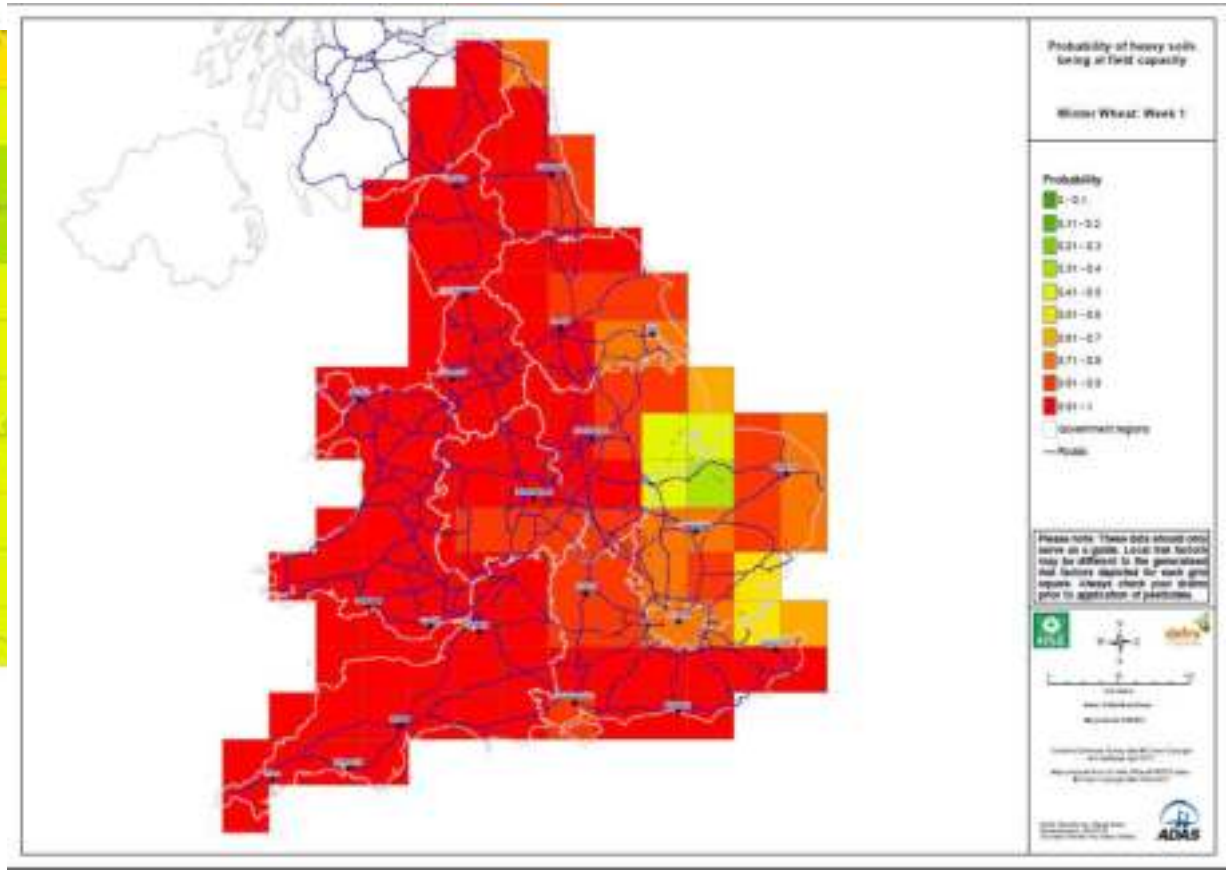


Temporal Risk Assessment

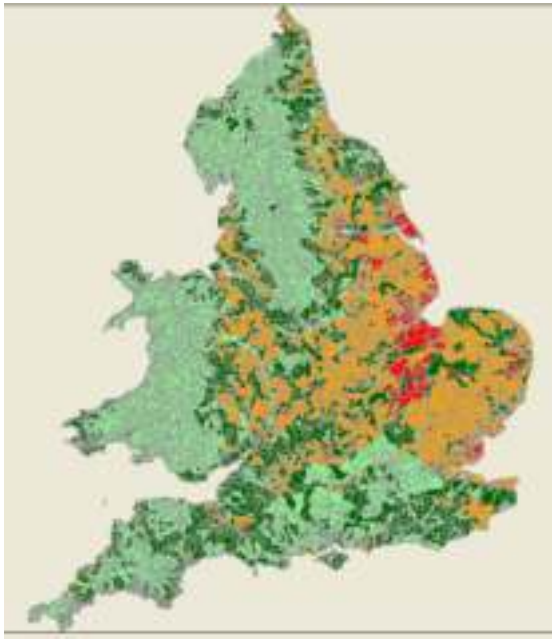
- MORECS analysis
- 50 Year Record (1961-2010)
- 2 Crops (WW, WOSR)
- For each week of the year
- Probability of soils being at field capacity

Temporal Risk Assessment





Usage Risk Assessment

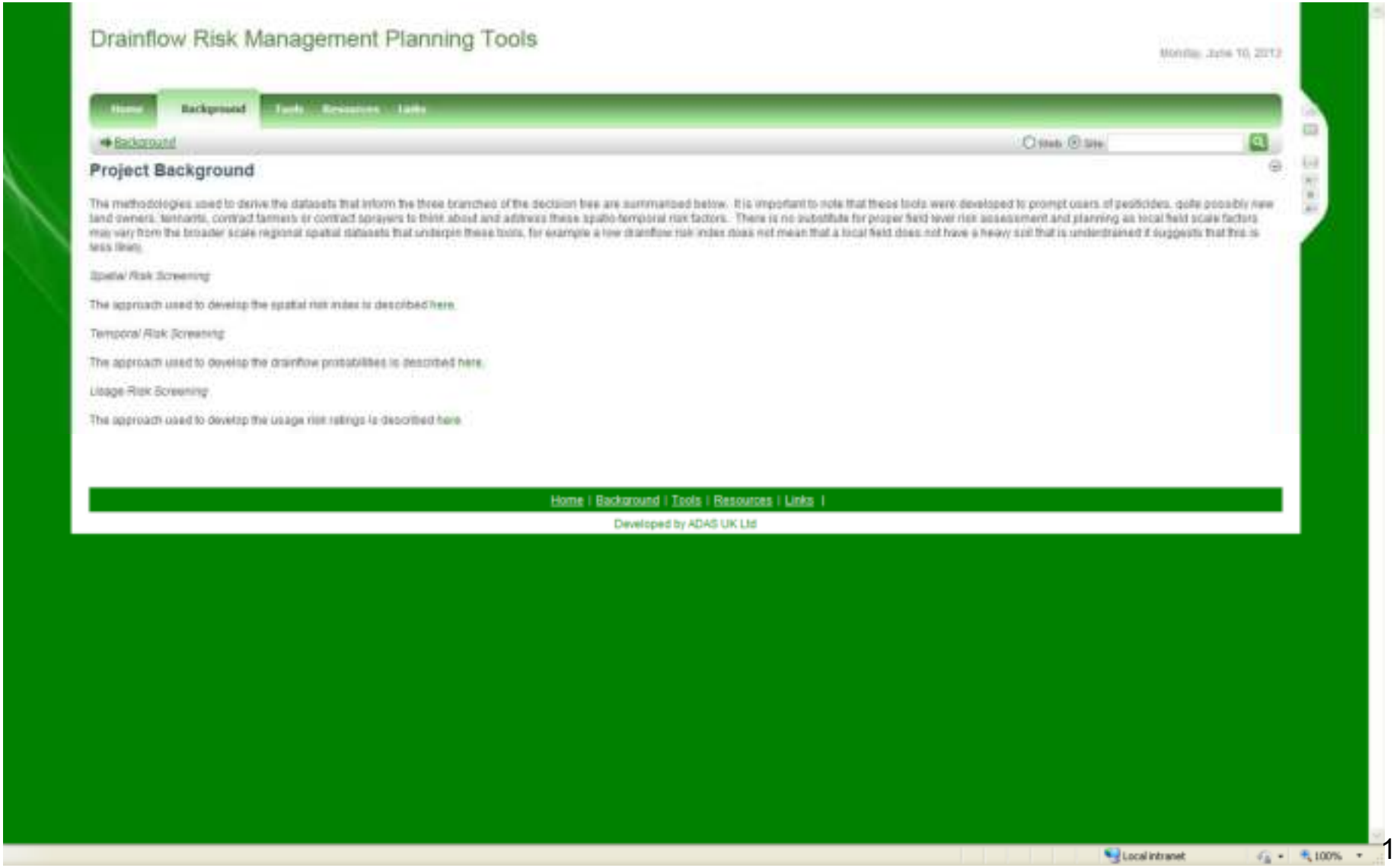


- MACRO Model
- 5 drained soil classes
- 6 climate regions
- 2 crops (winter cereals, WOSR)
- 15 compounds of WFD concern
- Compound props from EU Assessments
- PUS usage data for each region

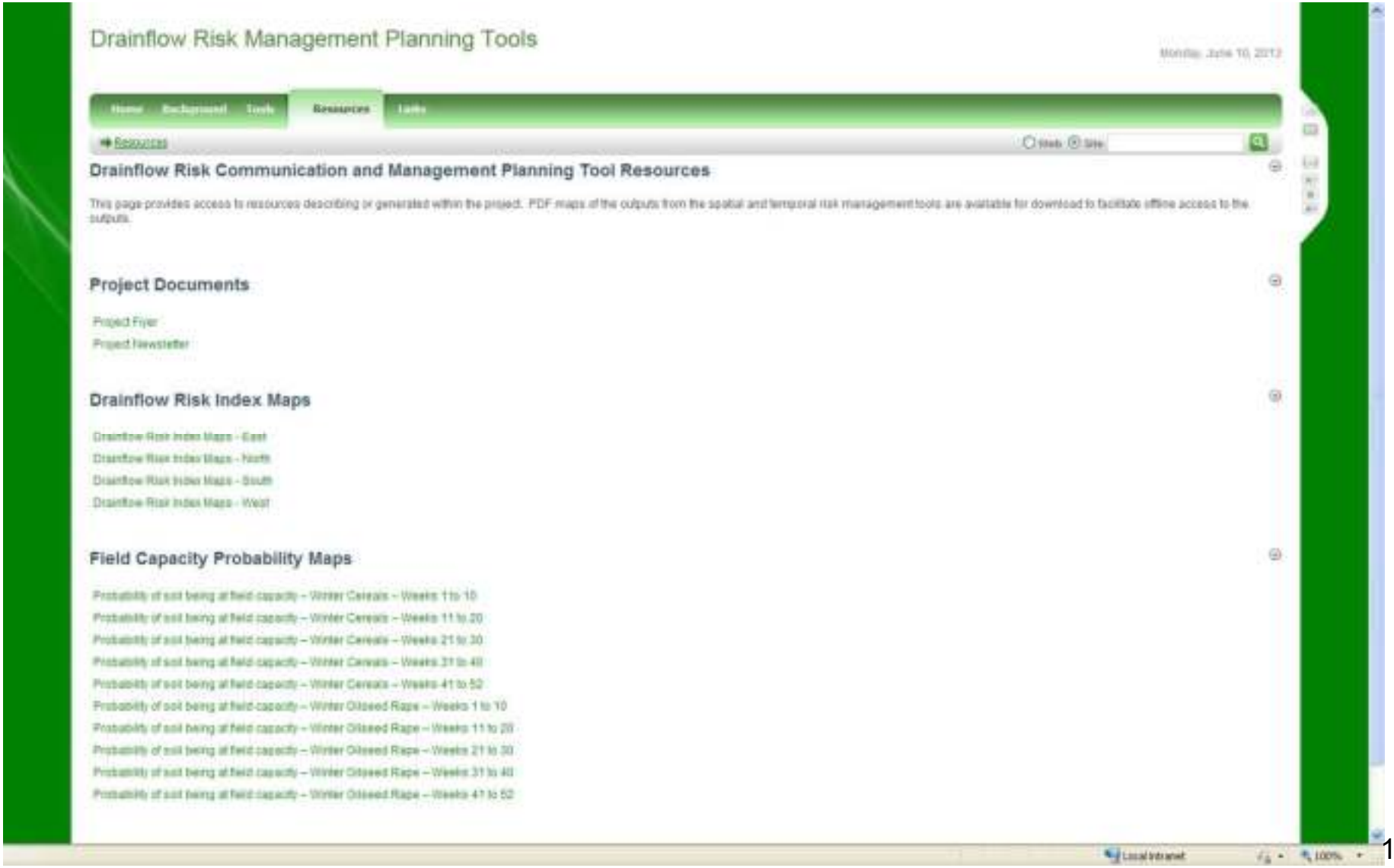
- Underpinned by CRD Minor Uses Screening Tool (See PS2238)
- Ditch PEC - Edge of field risk
- Catchment PEC - Catchment risk

Website - General

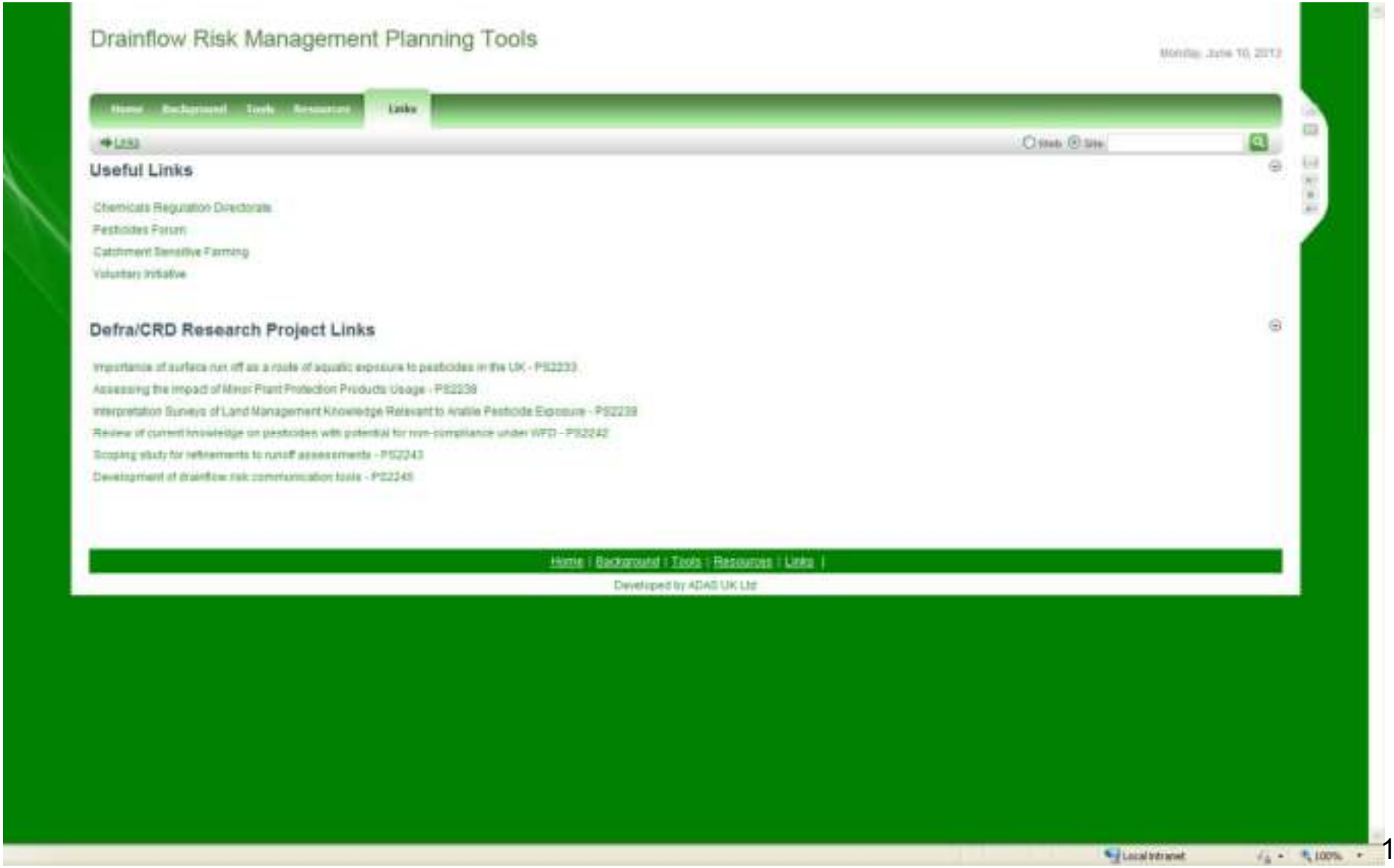
Website - Background



Website - Resources

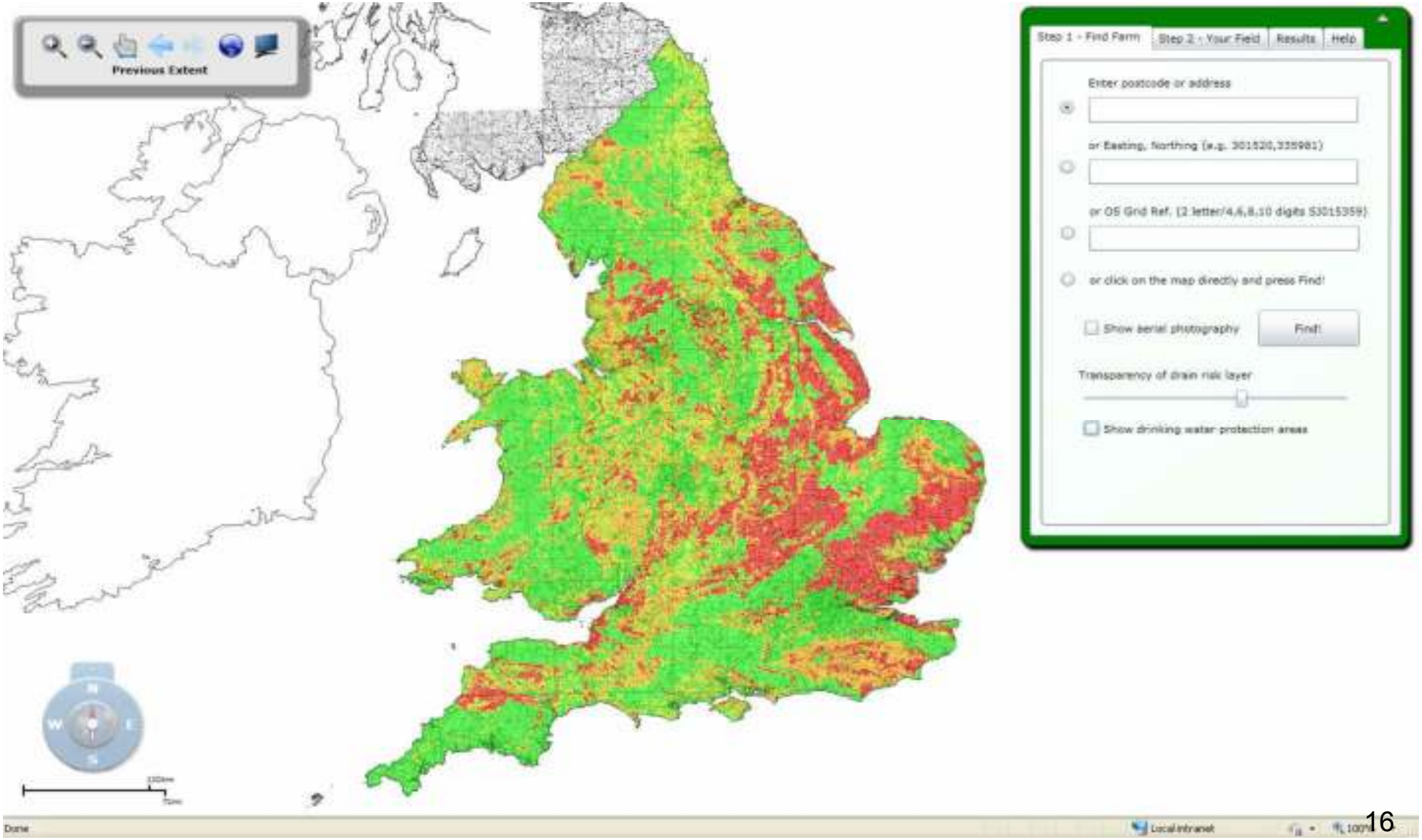


Website - Links

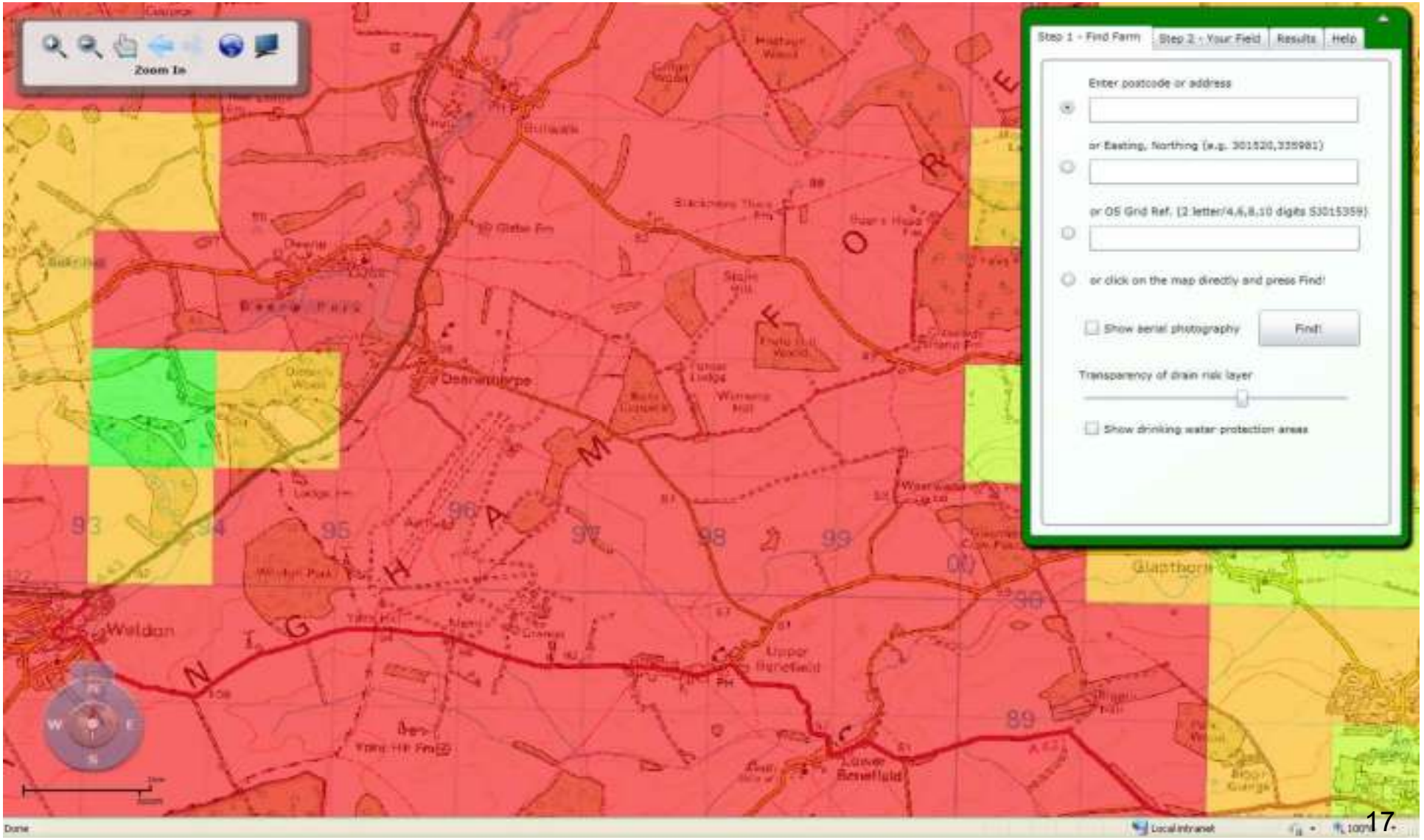


Website - Tools

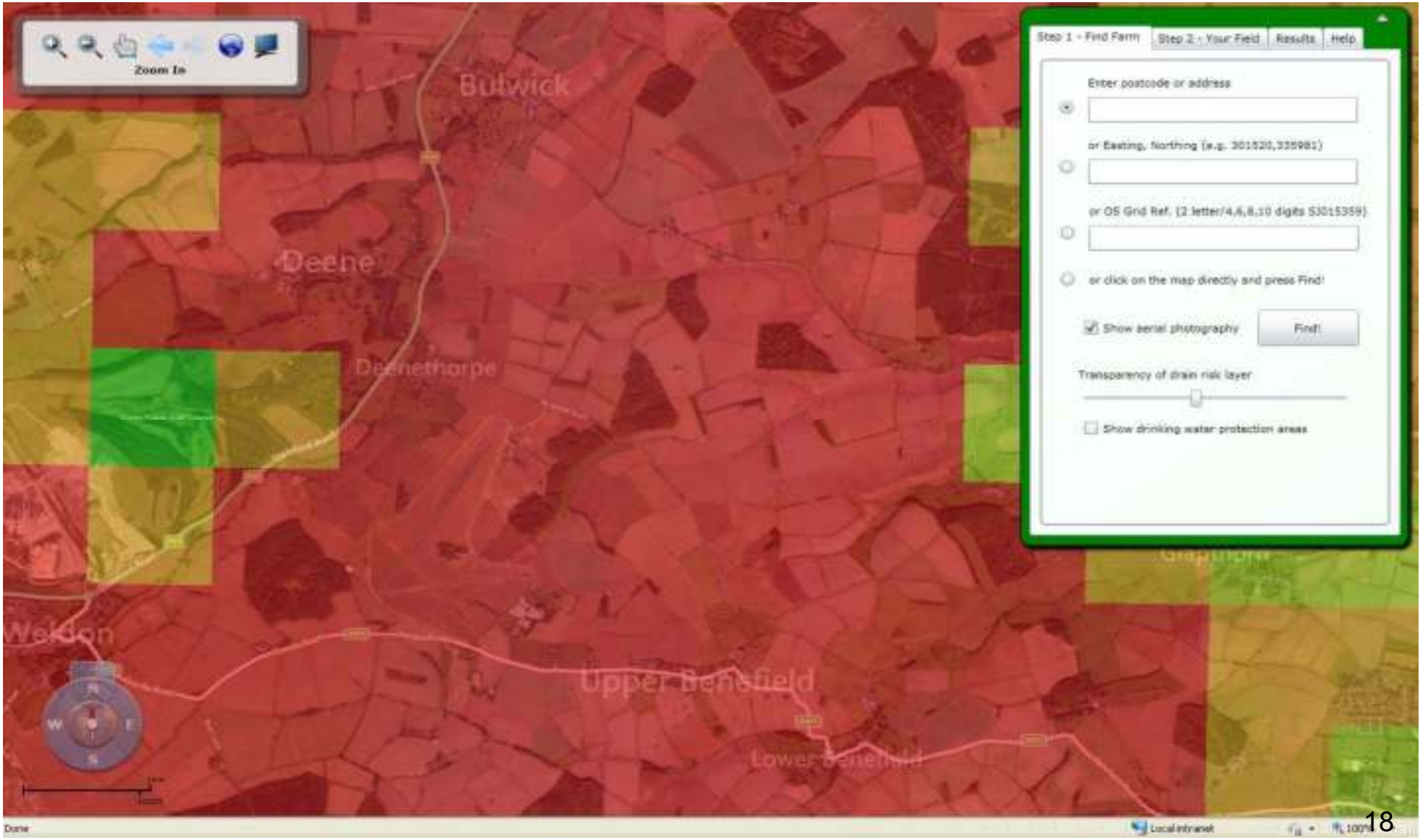
Webtool


Previous Extent
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Enter postcode or address
or Easting, Northing (e.g. 301520,335981)
or OS Grid Ref. (2 letter/4,6,8,10 digits SJ015359)
or click on the map directly and press Find!
Show aerial photography
Find!
Transparency of drain risk layer
Show drinking water protection areas
Done
Local intranet

Webtool


Zoom In
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Enter postcode or address
or Easting, Northing (e.g. 301520,335981)
or OS Grid Ref. (2 letter/4,6,8,10 digits S3015359)
or click on the map directly and press Find!
Show aerial photography
Find!
Transparency of drain risk layer
Show drinking water protection areas
Weldon
Done
Local intranet

Webtool


Zoom In
Bulwick
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Dennethorpe
Weldon
Upper Benefield
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Enter postcode or address
or Easting, Northing (e.g. 301520,335981)
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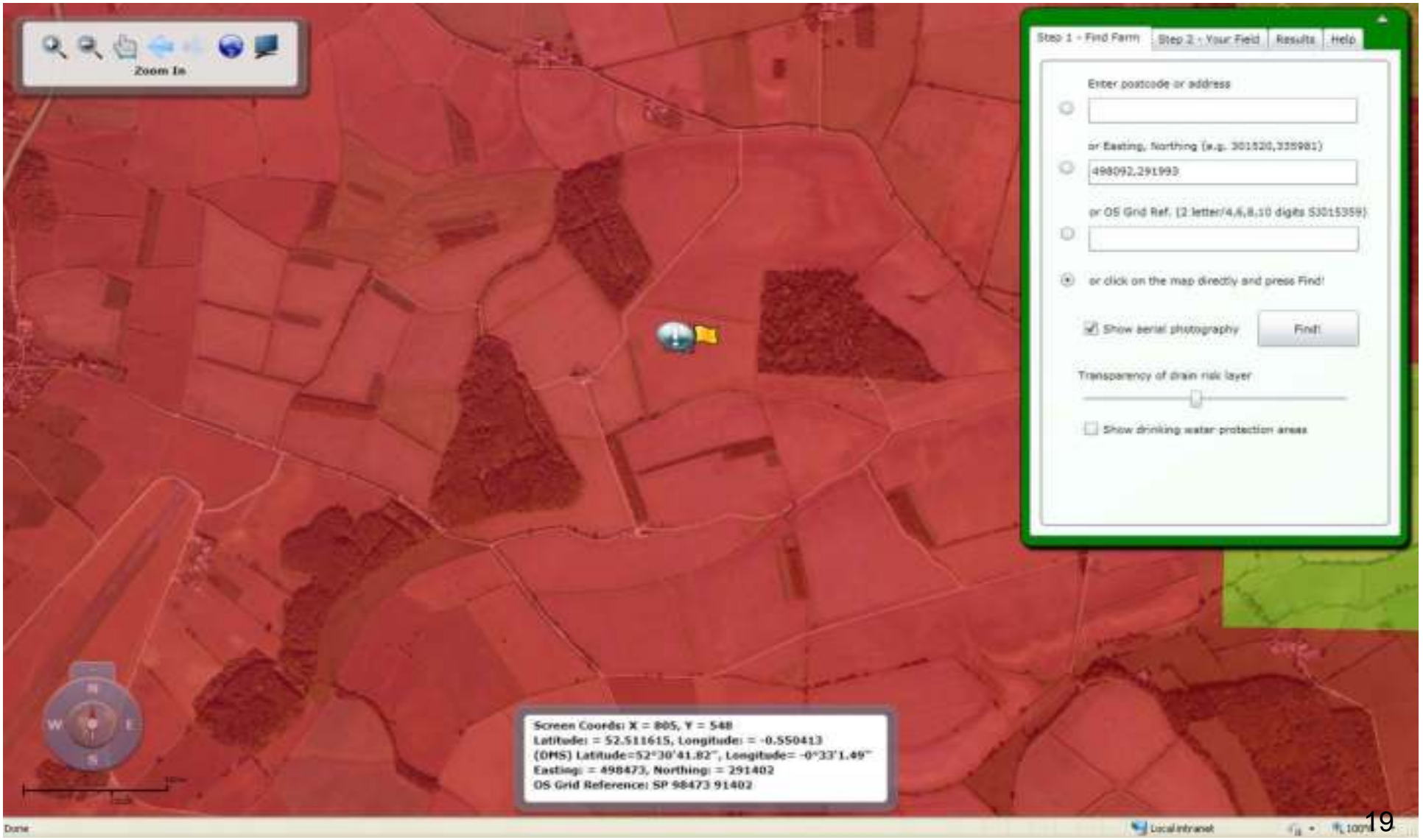
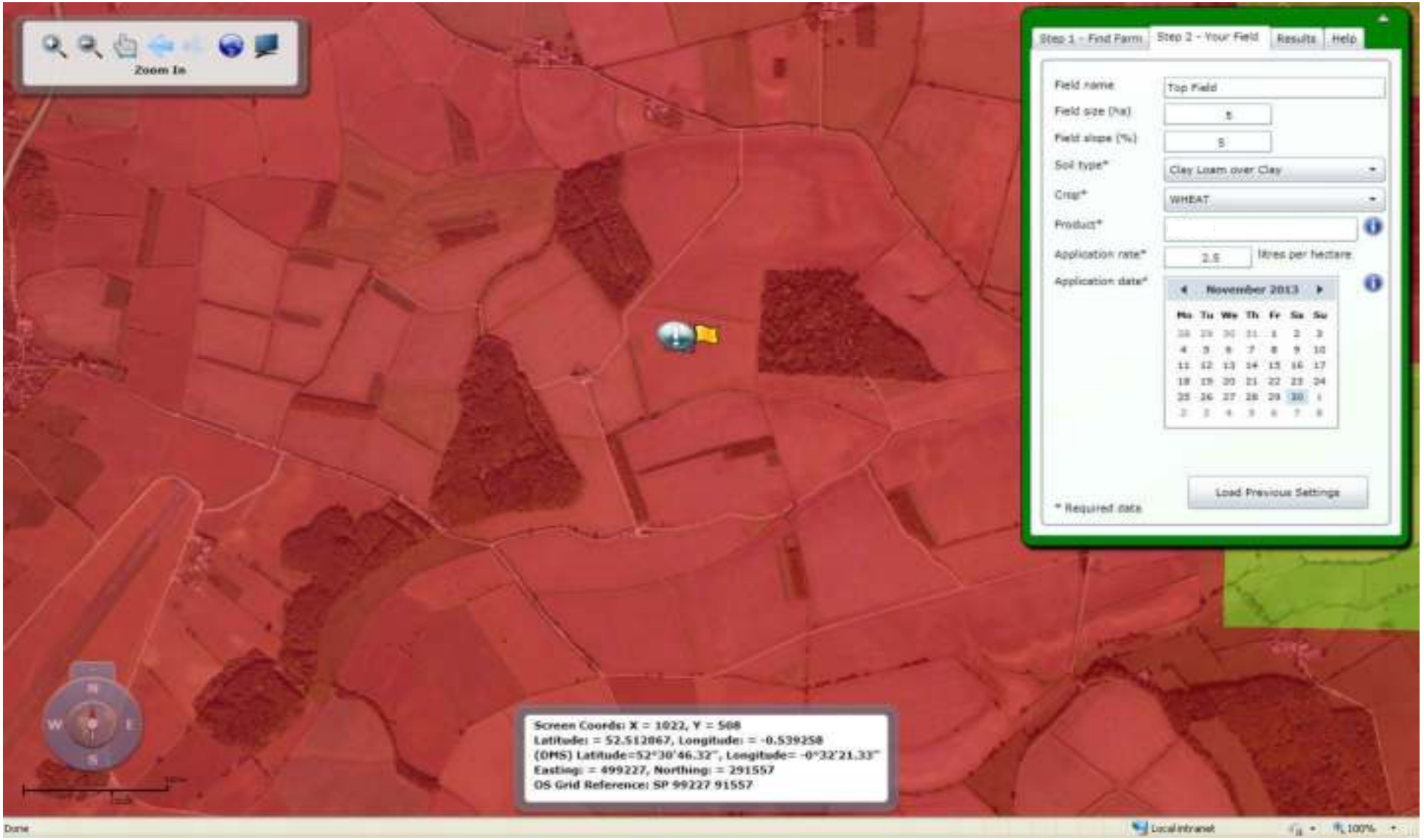
Transparency of drain risk layer
Show drinking water protection areas
Done
Local intranet

Webtool


Zoom In
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Enter postcode or address
or Easting, Northing (e.g. 301520,335981)
498092,291993
or OS Grid Ref. (2 letter/4,6,8,10 digits S3015359)
or click on the map directly and press Find!
Show aerial photography
Find!
Transparency of drain risk layer
Show drinking water protection areas
Screen Coords: X = 805, Y = 548
Latitude: = 52.511615, Longitude: = -0.550413
(OMS) Latitude=52°30'41.82", Longitude= -0°33'1.49"
Easting: = 498473, Northing: = 291402
OS Grid Reference: SP 98473 91402
Done
Local intranet

Webtool


Zoom In
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Field name
Top Field
Field size (ha)
5
Field slope (%)
5
Soil type*
Clay Loam over Clay
Crop*
WHEAT
Product*
Application rate*
2.5
litres per hectare
Application date*
November 2013
Load Previous Settings
* Required data
Screen Coords: X = 1022, Y = 508
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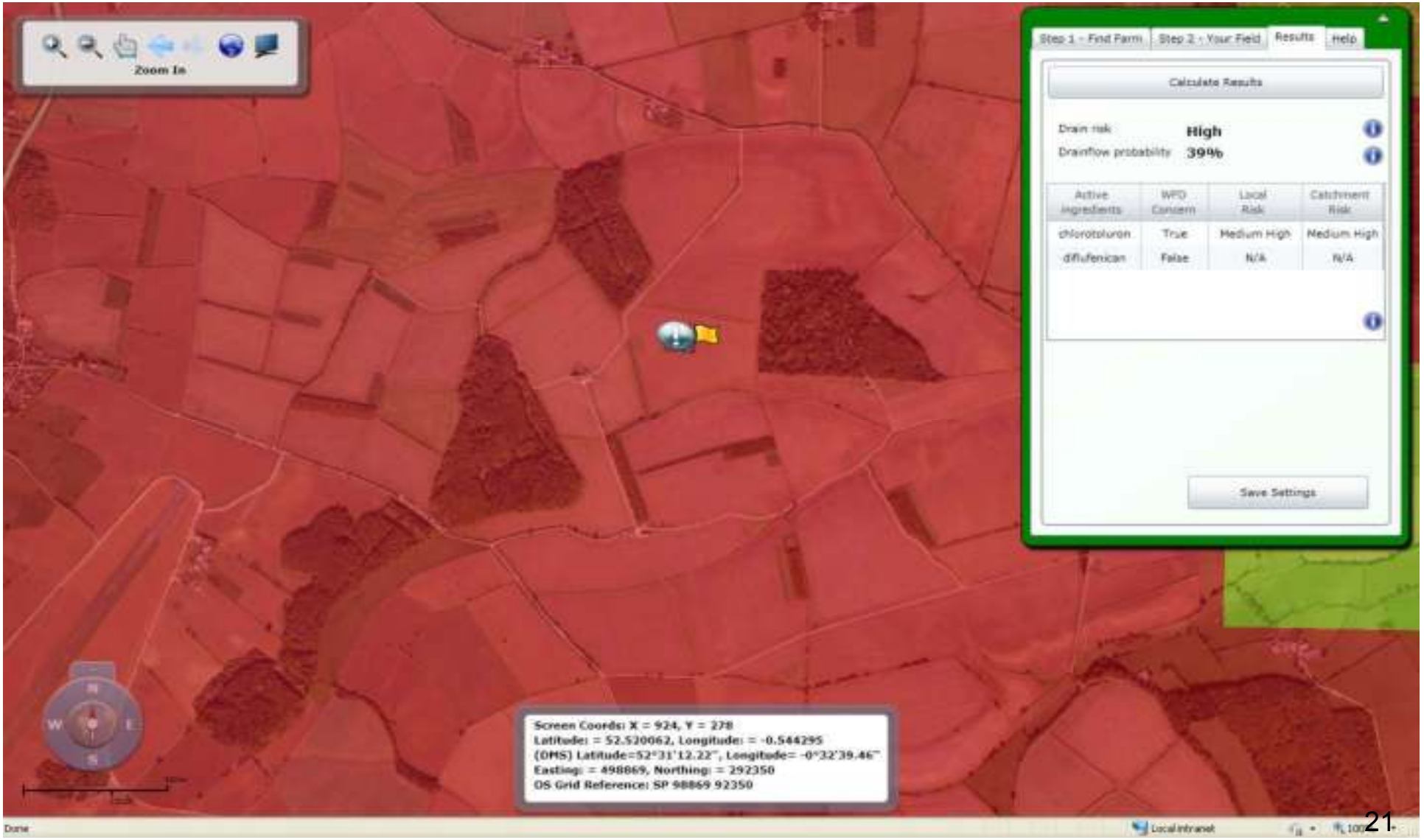
Webtool


Zoom In
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Calculate Results
Drain risk
High
Drainflow probability
39%
Active Ingredients
WFD Concern
Local Risk
Catchment Risk
chlorotoluron
True
Medium High
Medium High
diflufenican
False
N/A
N/A
Save Settings
Screen Coords: X = 924, Y = 278
Latitude: = 52.520062, Longitude: = -0.544295
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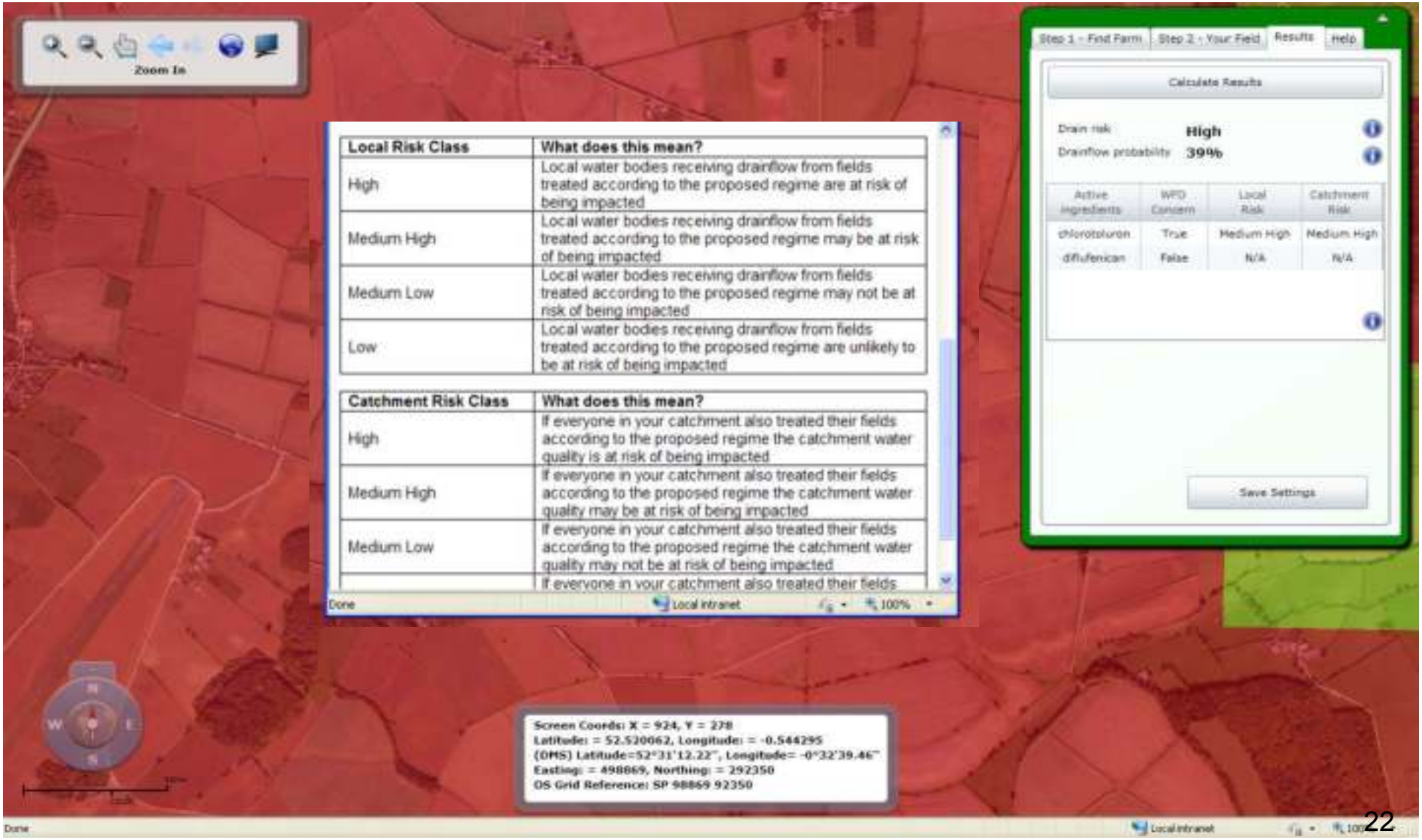
Done
Local intranet

Webtool


Zoom In
Local Risk Class
What does this mean?
High
Local water bodies receiving drainflow from fields treated according to the proposed regime are at risk of being impacted
Medium High
Local water bodies receiving drainflow from fields treated according to the proposed regime may be at risk of being impacted
Medium Low
Local water bodies receiving drainflow from fields treated according to the proposed regime may not be at risk of being impacted
Low
Local water bodies receiving drainflow from fields treated according to the proposed regime are unlikely to be at risk of being impacted
Catchment Risk Class
What does this mean?
High
If everyone in your catchment also treated their fields according to the proposed regime the catchment water quality is at risk of being impacted
Medium High
If everyone in your catchment also treated their fields according to the proposed regime the catchment water quality may be at risk of being impacted
Medium Low
If everyone in your catchment also treated their fields according to the proposed regime the catchment water quality may not be at risk of being impacted
Done
Local intranet
100%
Step 1 - Find Farm
Step 2 - Your Field
Results
Help
Calculate Results
Drain risk
High
Drainflow probability
39%
Active Ingredients
WFD Concern
Local Risk
Catchment Risk
chlorotoluron
True
Medium High
Medium High
diflufenican
False
N/A
N/A
Save Settings
Screen Coords: X = 924, Y = 278
Latitude: = 52.520062, Longitude: = -0.544295
(OMS) Latitude=52°31'12.22", Longitude= -0°32'39.46"
Easting: = 498869, Northing: = 292350
OS Grid Reference: SP 98869 92350
Done
Local intranet

Webtool

- Input from VI, NFU, AIC, CSF
- Presented to > 100 agronomists from range of organisations through 3 ADAS agronomist forums (Boxworth, Rosemaund, High Mowthorpe)
- Tested by ADAS and independent agronomists
- Presented to VI water sub-group
- Proposed inclusion within the VI suite of tools – link from VI website

Thank You

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