



Web interactive disease mapping using SVG

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Why? - The Problem

- We collected an immense volume of BTB data for England and Wales
- Maps were created in GIS using this data
- In order to deliver the data back to the field vets it was initially envisioned to create a paper atlas
- Following advances in Internet technology it was decided to explore alternative routes

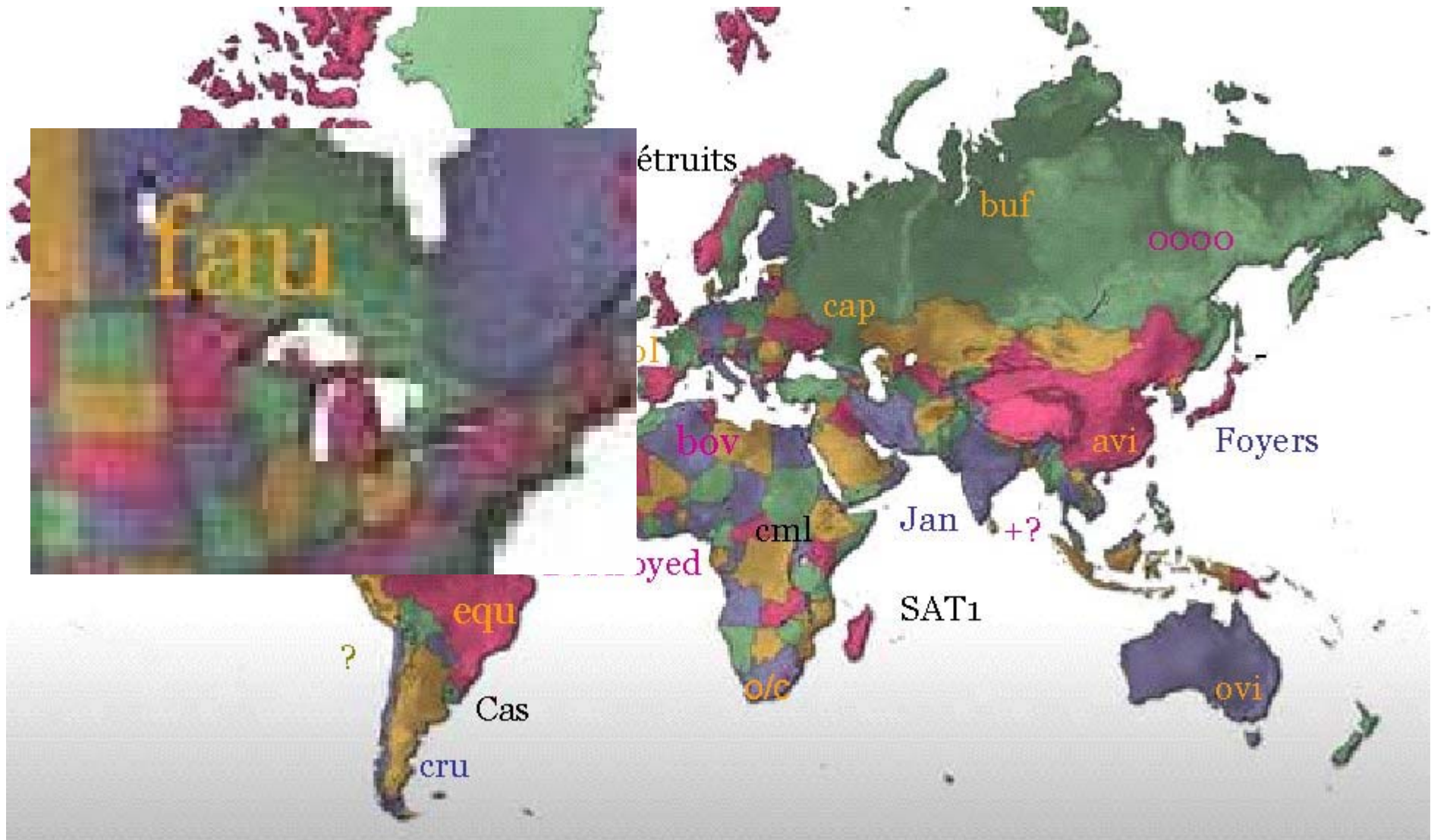


How? - Technical Options

- Raster embeds
 - Often large download time
 - Images must be recreated if the data changes
- 'Internet GIS'
 - Requires large initial capital expenditure
- SVG
 - Combines the best of both worlds
 - Potentially short load times and low cost



Raster embed





Internet GIS

The screenshot shows a web browser window displaying an Internet GIS application. The browser's address bar shows the URL: <http://arh.geop.ttu.edu/webotof/commbases/viewer.htm>. The application title is "Communicable Diseases in Texas".

The main map area is currently blank, with a "Refresh Map" button centered below it. A small inset map in the top-left corner shows the state of Texas with a red rectangular box highlighting a specific region. To the left of the main map is a vertical toolbar with various navigation icons.

On the right side, there is a "Layers" panel with a list of data layers, each with a checkbox. The layers listed are:

- Major Cities
- TTU-HSC Service Bound
- Interstate
- Rate Aids Cases / 100,000
- Number Aids Cases
- Rate Chlamydia Case / 100,000
- Number Chlamydia Cases
- Rate Gonorrhea Cases / 100,000
- Number Gonorrhea Cas
- Rate Hepatitis Cases / 100,000
- Number Hepatitis Ca
- Rate Syphilis Cases / 100,000
- Number Syphilis Cas
- Rate Tuberculosis Cases / 100,000
- Number Tuberculosis Cases
- Rate Varicella Cases / 100,000
- Number Varicella Cas
- TDIH All Data by Cou

Below the list of layers is a "Refresh Map" button. At the bottom of the browser window, the status bar shows: "Map: -97.63, 29.65 - Image: 602, 468 - ScaleFactor: 8.81715150094249E-14".



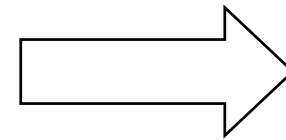
What? - SVG

DATA & TAG

BROWSER DISPLAY

HTML

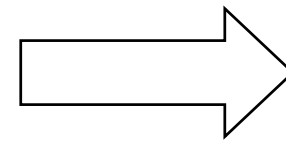
`<I>Tuberculosis</I>`



Tuberculosis

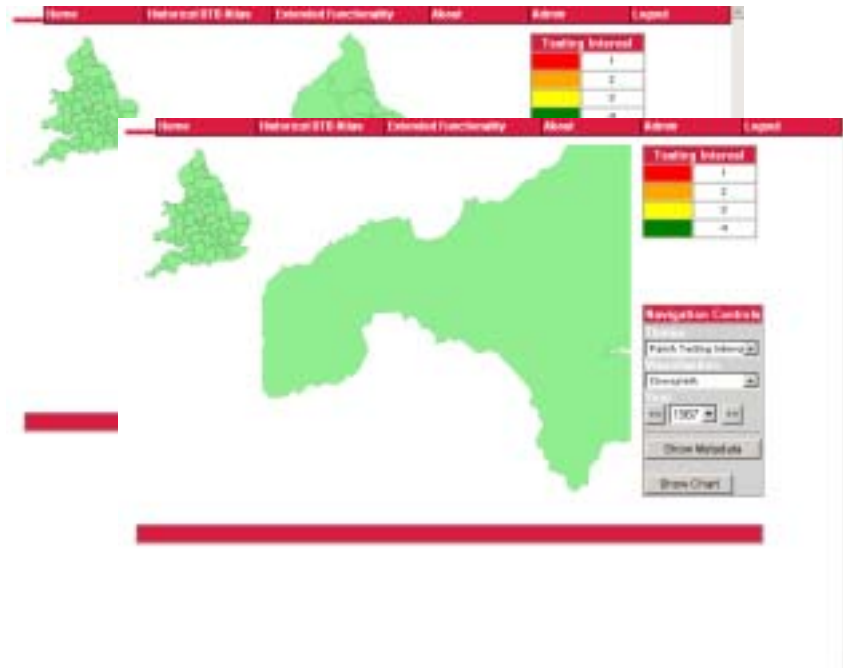
SVG

`<path d="M0,0...">`





What? - SVG



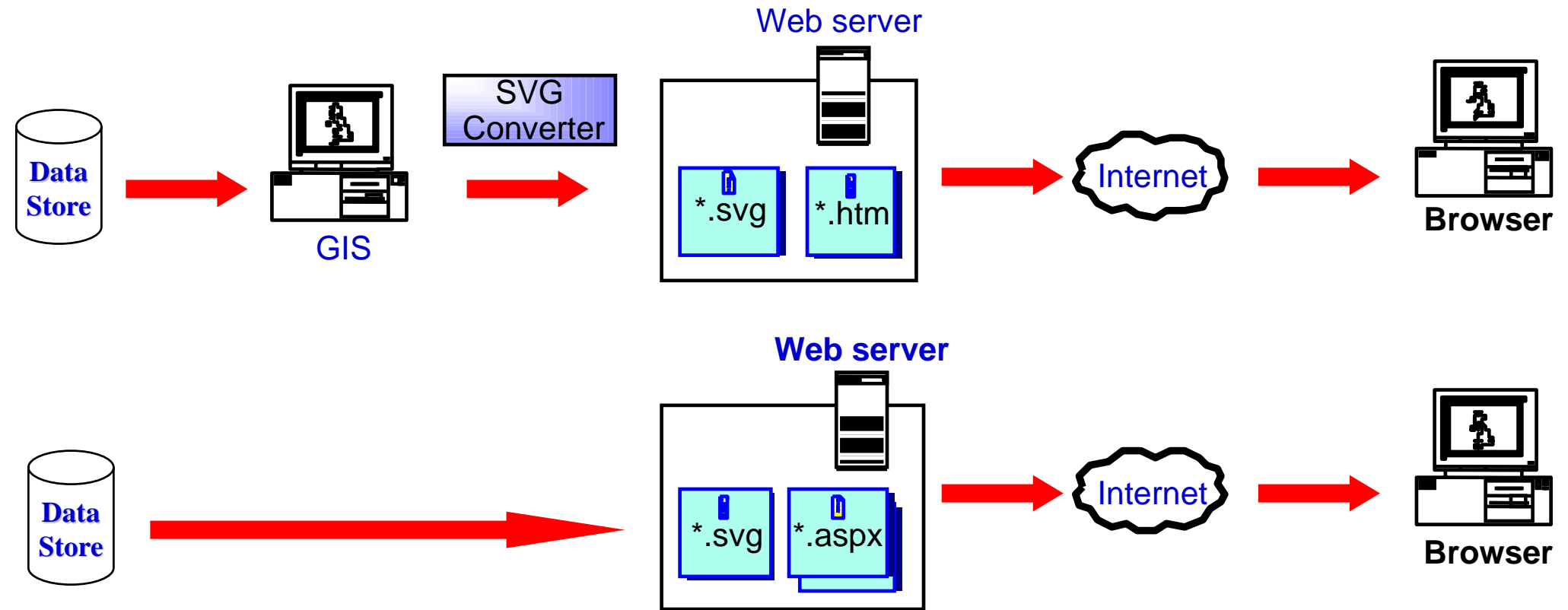
■ Scalable

■ Vector

■ Graphics



Implementation



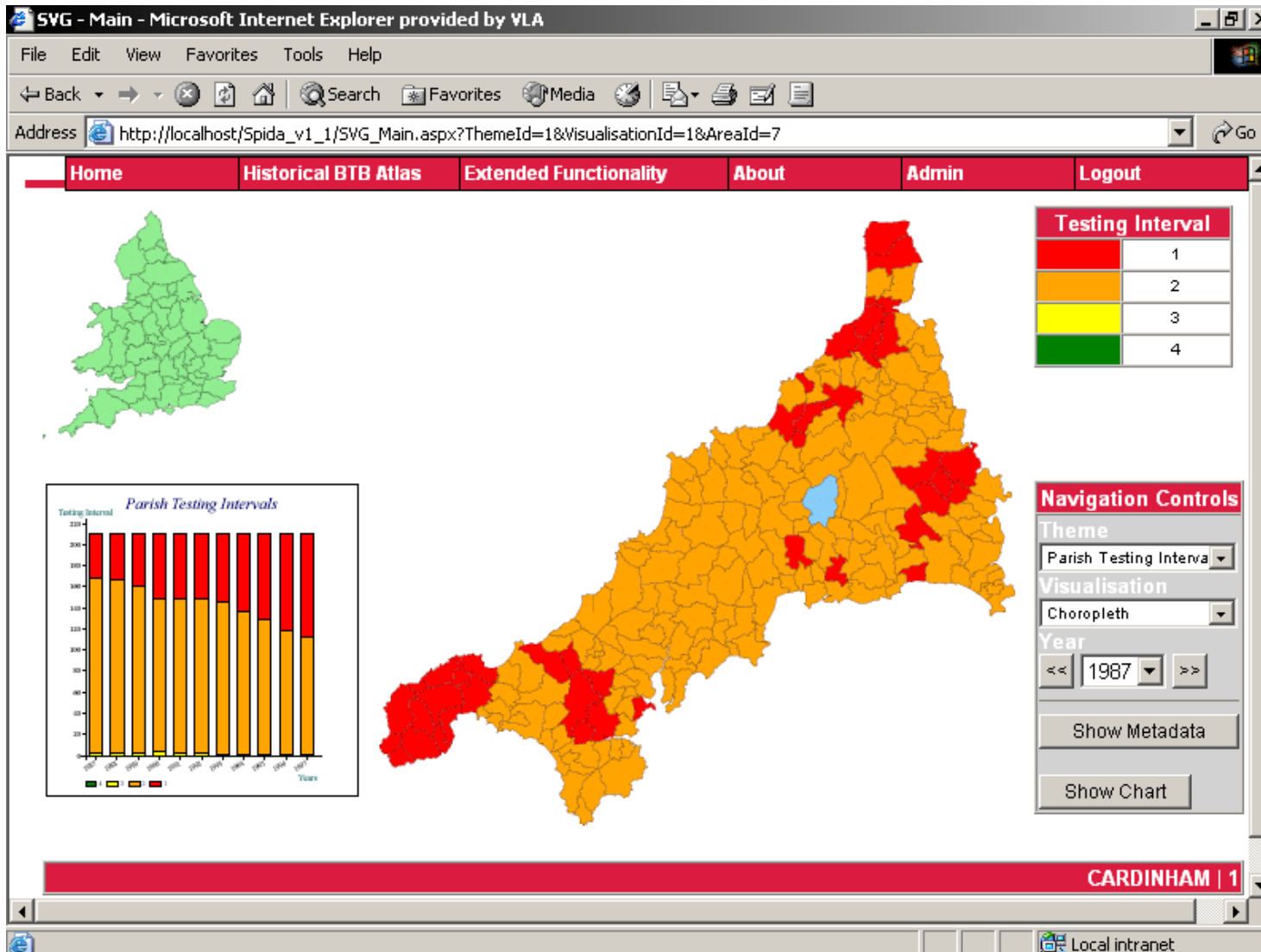


Examples

Images taken from S.P.I.D.A
(SVG Presented Interactive Disease Atlas)



Choropleth Map – Parish Testing Interval (Cornwall)





Proportional Symbol Map – Breakdown Types

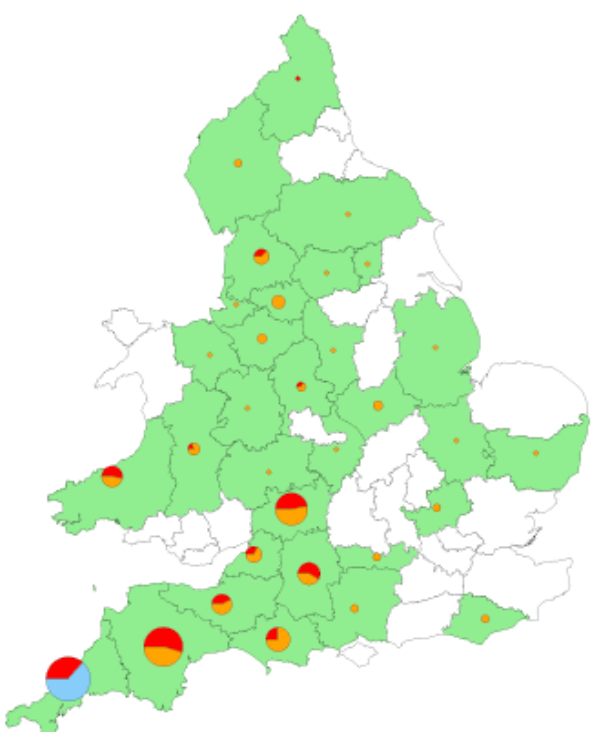
SVG - Main - Microsoft Internet Explorer provided by VLA

File Edit View Favorites Tools Help

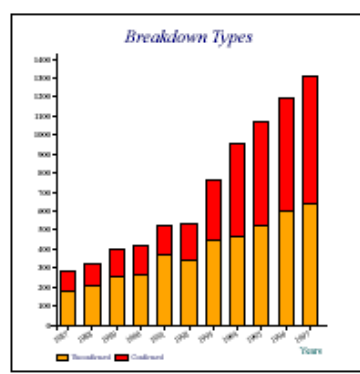
Back Forward Stop Home Search Favorites Media Print Mail

Address http://localhost/Spida_v1_1/SVG_Main.aspx?ThemeId=1&VisualisationId=1&AreaId=7 Go

Home Historical BTB Atlas Extended Functionality About Admin Logout



Confirmed
Unconfirmed



Breakdown Types

Navigation Controls

Theme
Breakdown Types

Year
<< 1987 >>

Show Metadata

Show Chart

Unconfirmed | 43/68

not well-formed: line 1021, column 6 Local intranet



Metadata

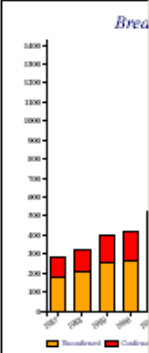

SVG - Main - Microsoft Internet Explorer provided by VLA

File Edit View Favorites Tools Help

Address http://

SVG - Metadata - Microsoft Internet Explorer provided by VLA

Home



Theme	Breakdown Type.
Description	The number of new and continuing herd breakdowns within a given year; these are sub-classified as being either subsequently confirmed or unconfirmed by culture or histo-pathological examination (HPE).
Base Map	County boundaries extracted from 1974 parish map with GB National Grid projection.
Source Data	<p>From 1992 to the present, the date of initiation of a breakdown was recorded onto the VETNET system against the CPHH; between 1986-1992, this information was recorded onto the TbiC System, but only for counties in the southwest?? For counties outside the southwest, pre-1992 breakdown data was retrospectively added to VETNET.</p> <p>All tissue culture (and HPE) was undertaken at CVL and results recorded onto the TB50 Database.</p> <p>Total number of breakdowns, subdivided into confirmed and unconfirmed, were given in the CVO Annual Reports 1987-1992; in 1993-1994 total number of breakdowns and new confirmed breakdowns were listed; from 1995 only partial</p>

Controls

types

>>

Metadata

art

not well-formed: line 1021, column 6

Local intranet



10km² Grid Map – Herd Density

SVG - Main - Microsoft Internet Explorer provided by VLA

File Edit View Favorites Tools Help

Address http://localhost/Spida_v1_1/SVG_Main.aspx?ThemeId=1&VisualisationId=1&AreaId=7

Home Historical BTB Atlas Extended Functionality About Admin Logout

0-91
92-182
183-273
274-364
365-455

Navigation Controls

Theme: Herd Distribution

Year: 1987

Show Metadata

Show Chart

not well-formed: line 7047, column 6

Local intranet



Conclusion

- Successfully implemented this new and exciting web mapping technology
- Presently only supports historical data
- Future version to report pseudo real-time data delivery
- Implementation of XML & XSLT