

# **GEOINFORMATION AS AN INTEGRAL COMPONENT OF THE NATIONAL HAZARD AND VULNERABILITY 'ATLAS'**

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# South African Achievements

- Efforts by South Africa to integrate disaster risk reduction into sustainable development processes.
- Requires adopting the risk reduction approach in disaster management
- Paradigm shift towards maximising prevention.

# South African Achievements

- South African **Disaster Management Act**, No. 57 of 2002, on 15 January 2003:
  - An integrated and coordinated disaster management policy.
  - Focusing on prevention and disaster risk reduction.
  - National, provincial and municipal Disaster Management Centres.
  - Horizontal DM information coordination between NDMC, SAWS, DWAF, DA, DH.

# South African Achievements

- South Africa has developed the National Disaster Hazard and Vulnerability Atlas.
- Atlas is a database-driven, web-enabled interactive "virtual book".
- Various "chapters", such as drought, flood, cyclones, storms, severe weather, fire.

# **Atlas is ...**

- Hazard, Vulnerability and Risk Information Management Tools.**
- Early Warning Tools.**
- Single Hazard, Vulnerability and Risk Information Entry Point / Portal.**

# **GIS Role in Atlas**

**Risk Monitoring**

**Mitigation**

**Response**

**Recovery**

# Atlas GIS Software

**ESRI family**

**ArcInfo**

**ArcView**

**ArcIMS**

**GRASS**

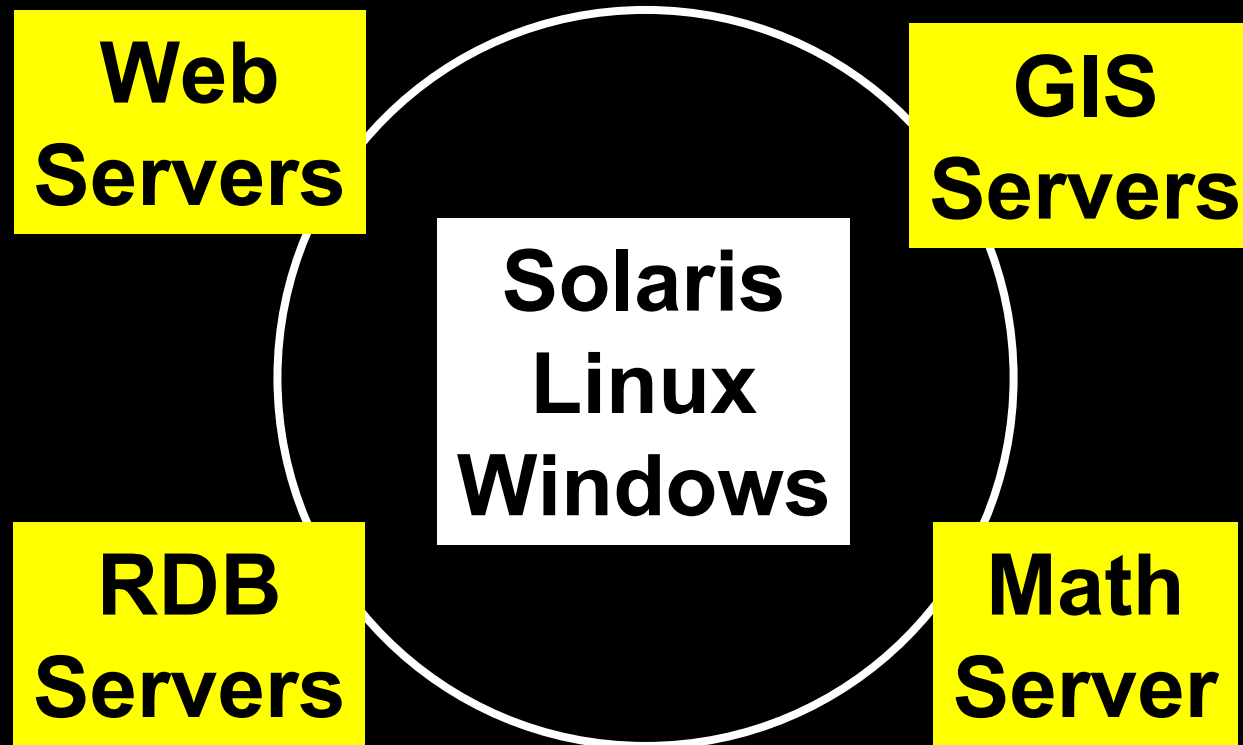
**Microimages**

**TNT**

**Univ. of Minnesota**

**Web Map Server**

# Hardware Configuration

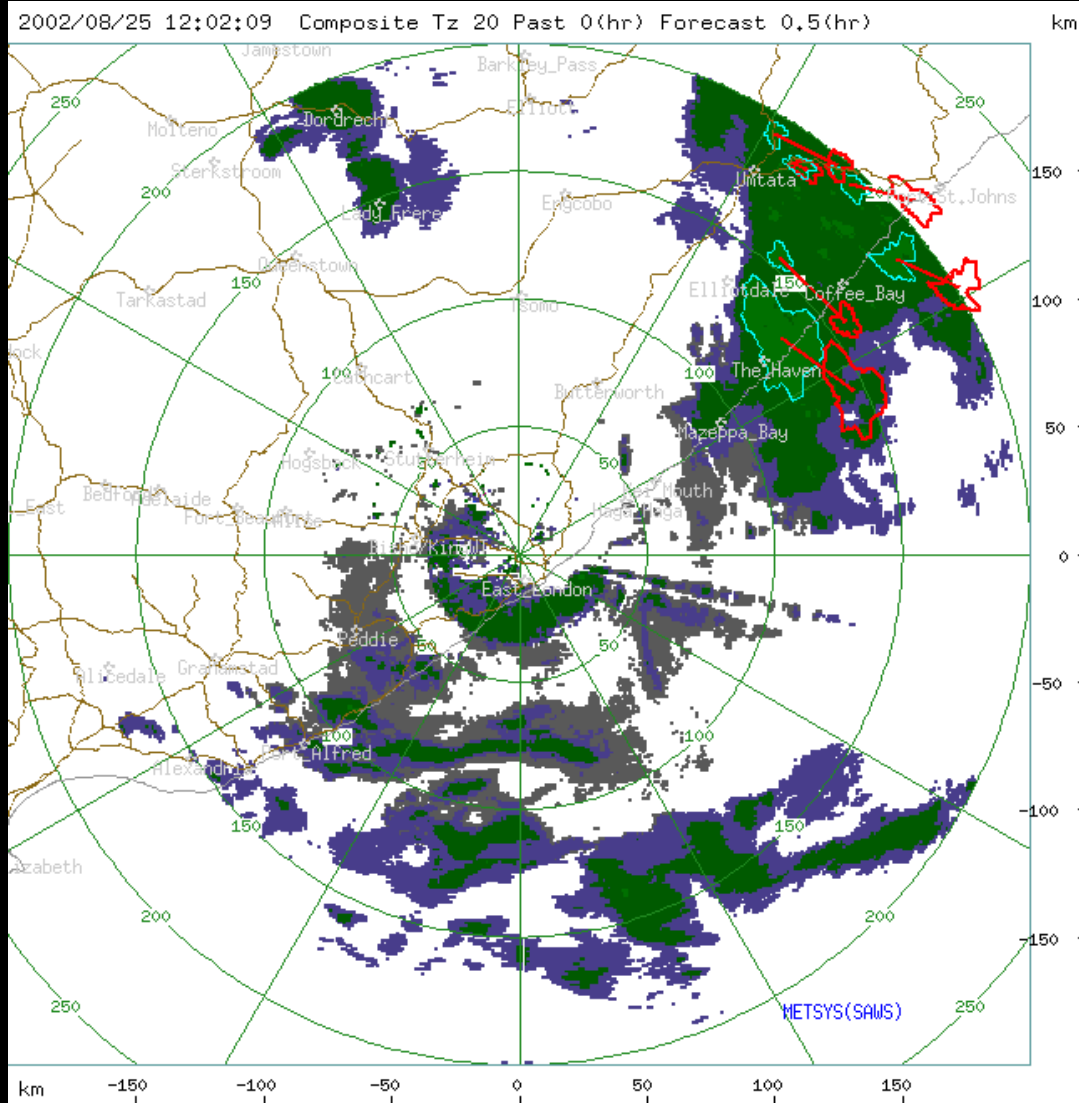




# Precipitation Dynamics – SAWS Ground Radars

H  
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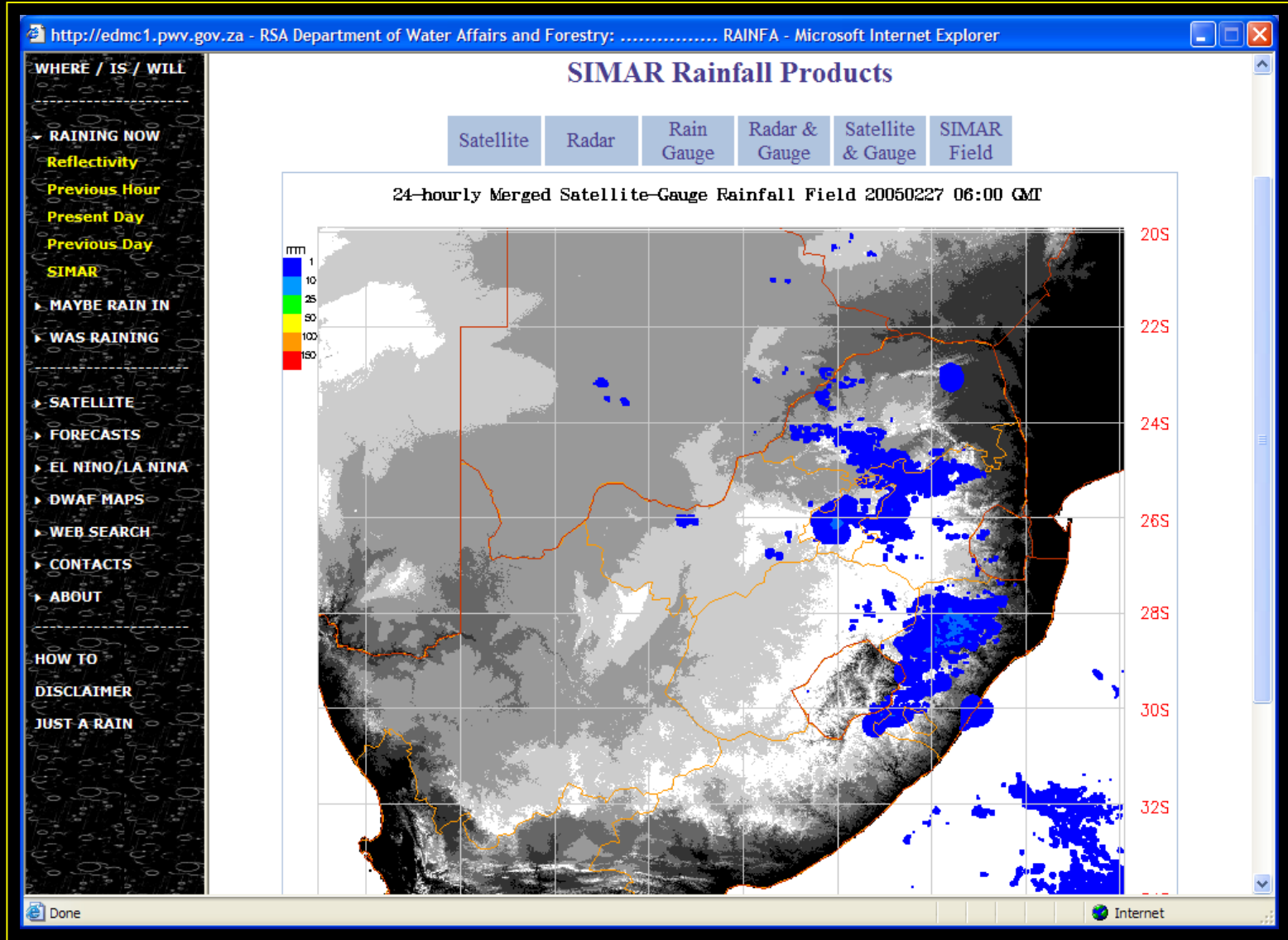
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# SAWS Spatial Rainfall Data Integration

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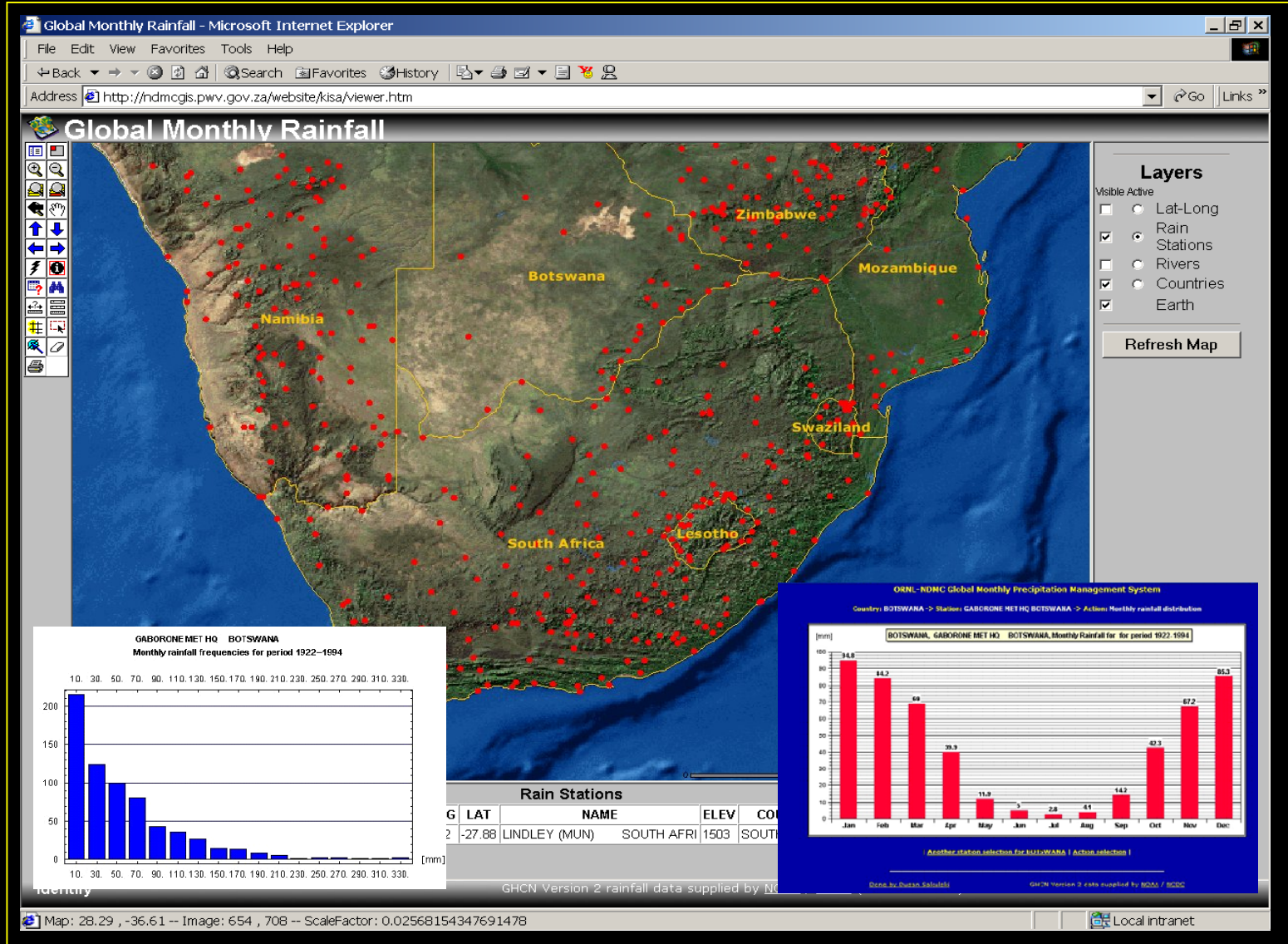
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# Precipitation Dynamics – Monthly Rainfall

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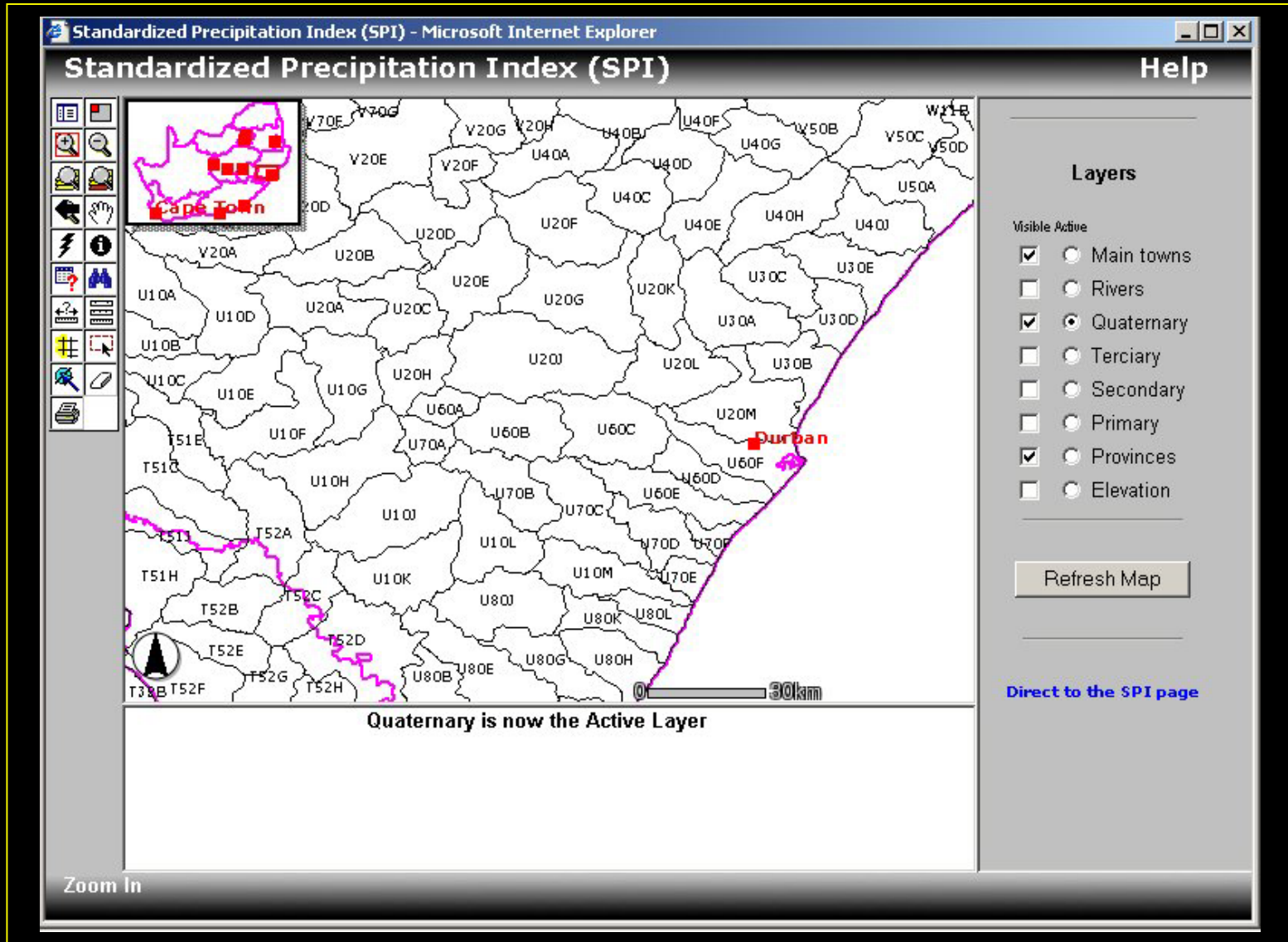
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# Drought – Standardized Precipitation Index (SPI)

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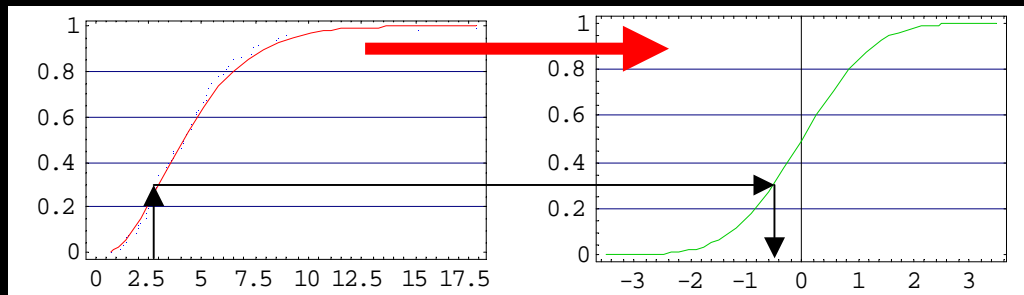
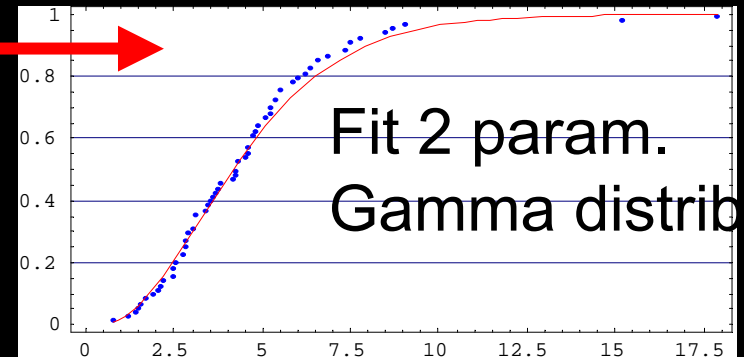
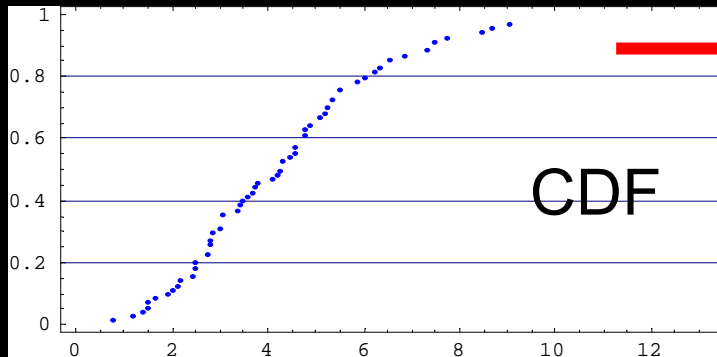


# Drought – Standardized Precipitation Index (SPI)

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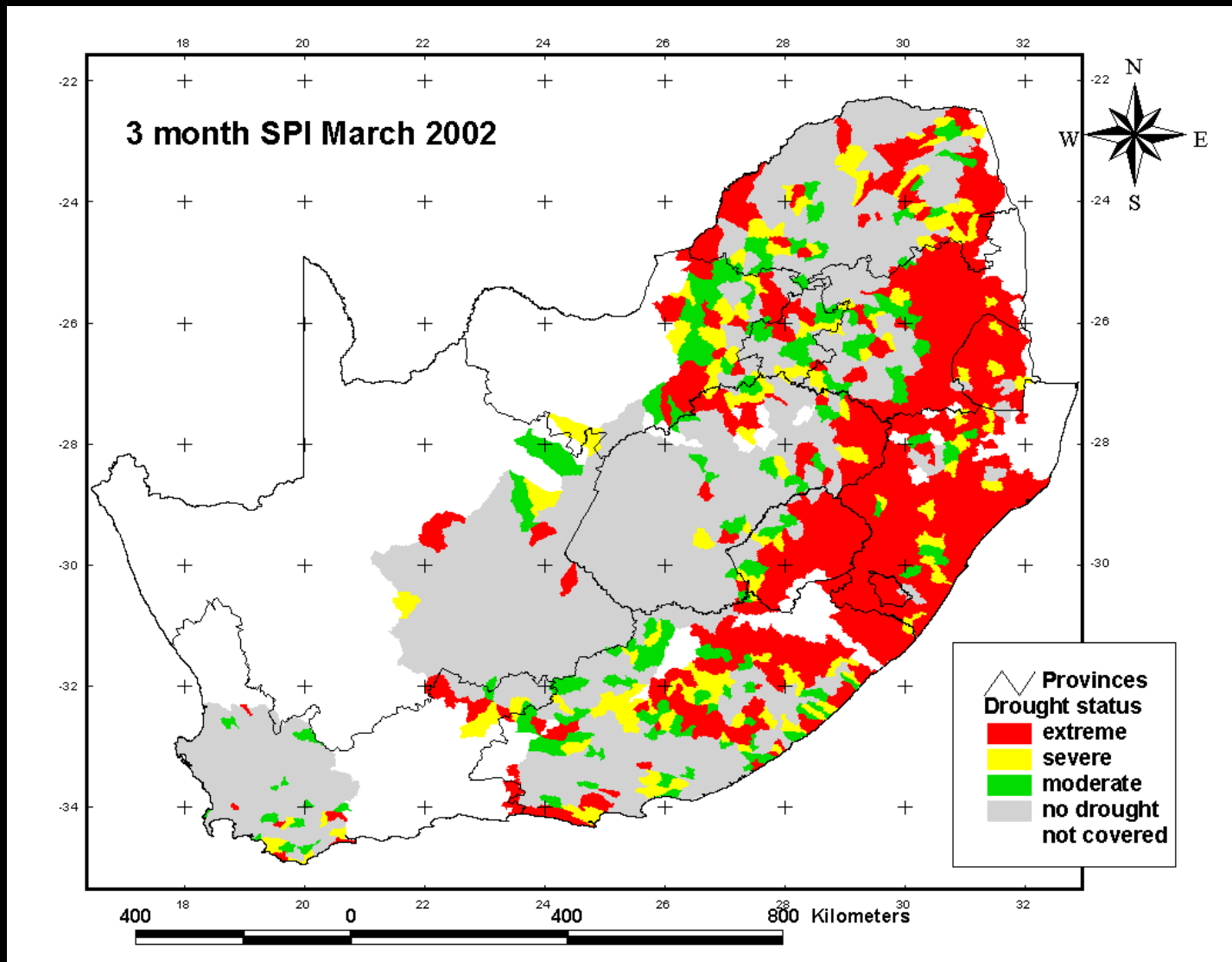
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## On-the-fly web SPI calculation



# Drought – Standardized Precipitation Index (SPI)

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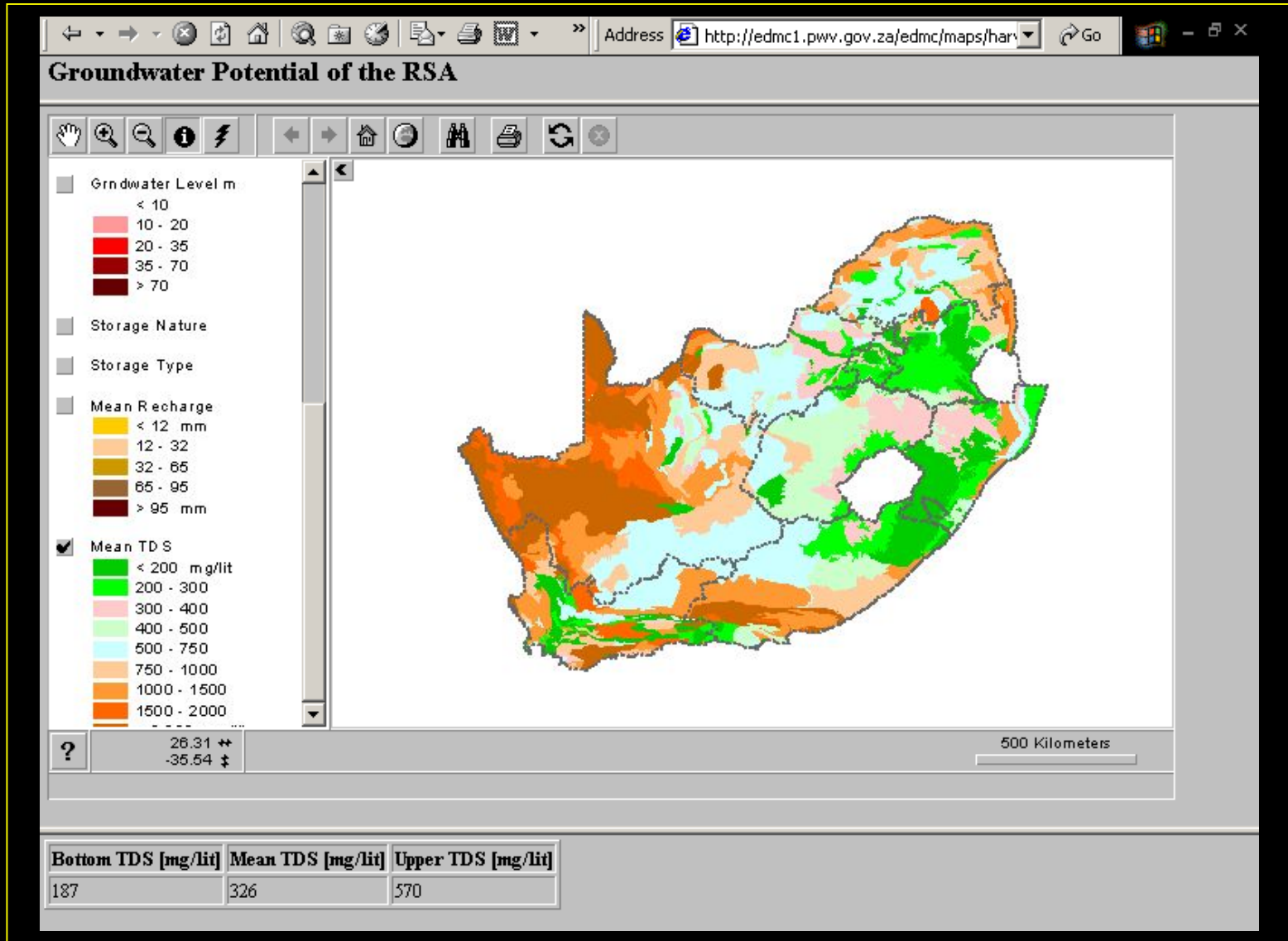


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A

# DWAF Groundwater Vulnerability

DISASTER MITIGATION

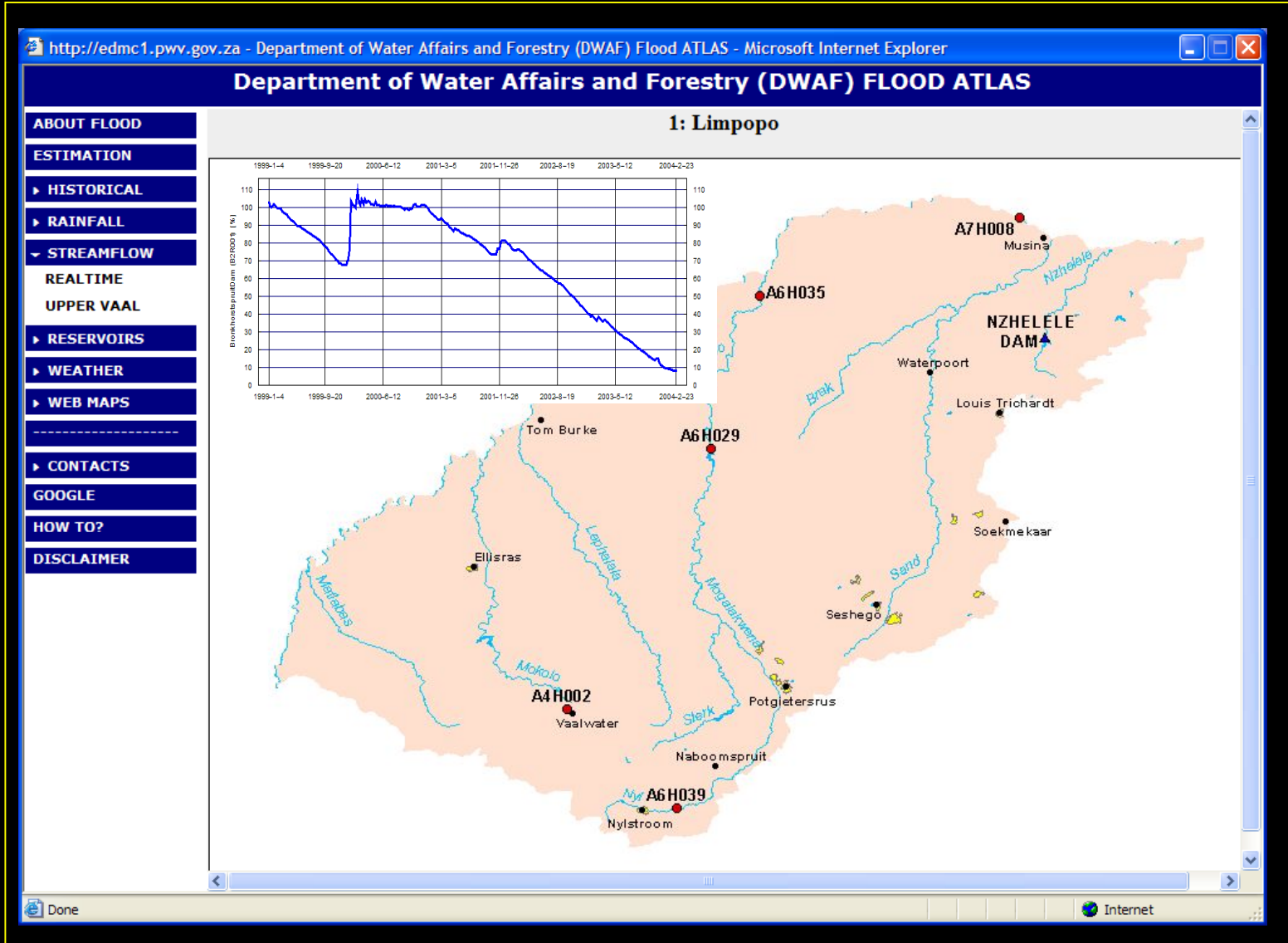
ARCVIEWS



# DWAF - Streamflow and Dam Level Monitoring

DISASTER MITIGATION

ARCS / WEB MAT

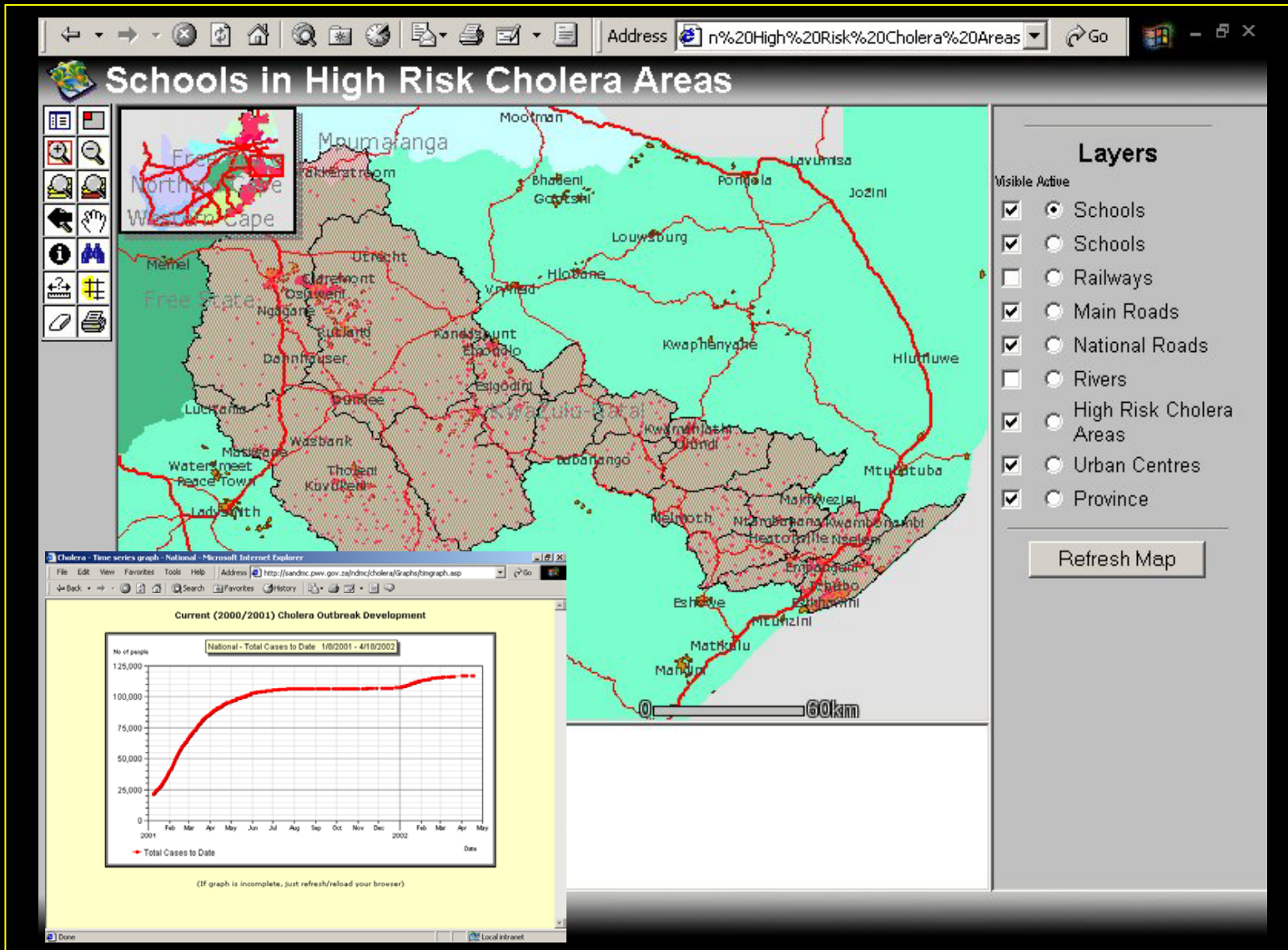




# DoH Cholera Outbreak

DISASTER MITIGATION

ARCS



# NDMC - 'Hot-Spot' Spatial Location

DISASTER MITIGATION

ARCVIEWS

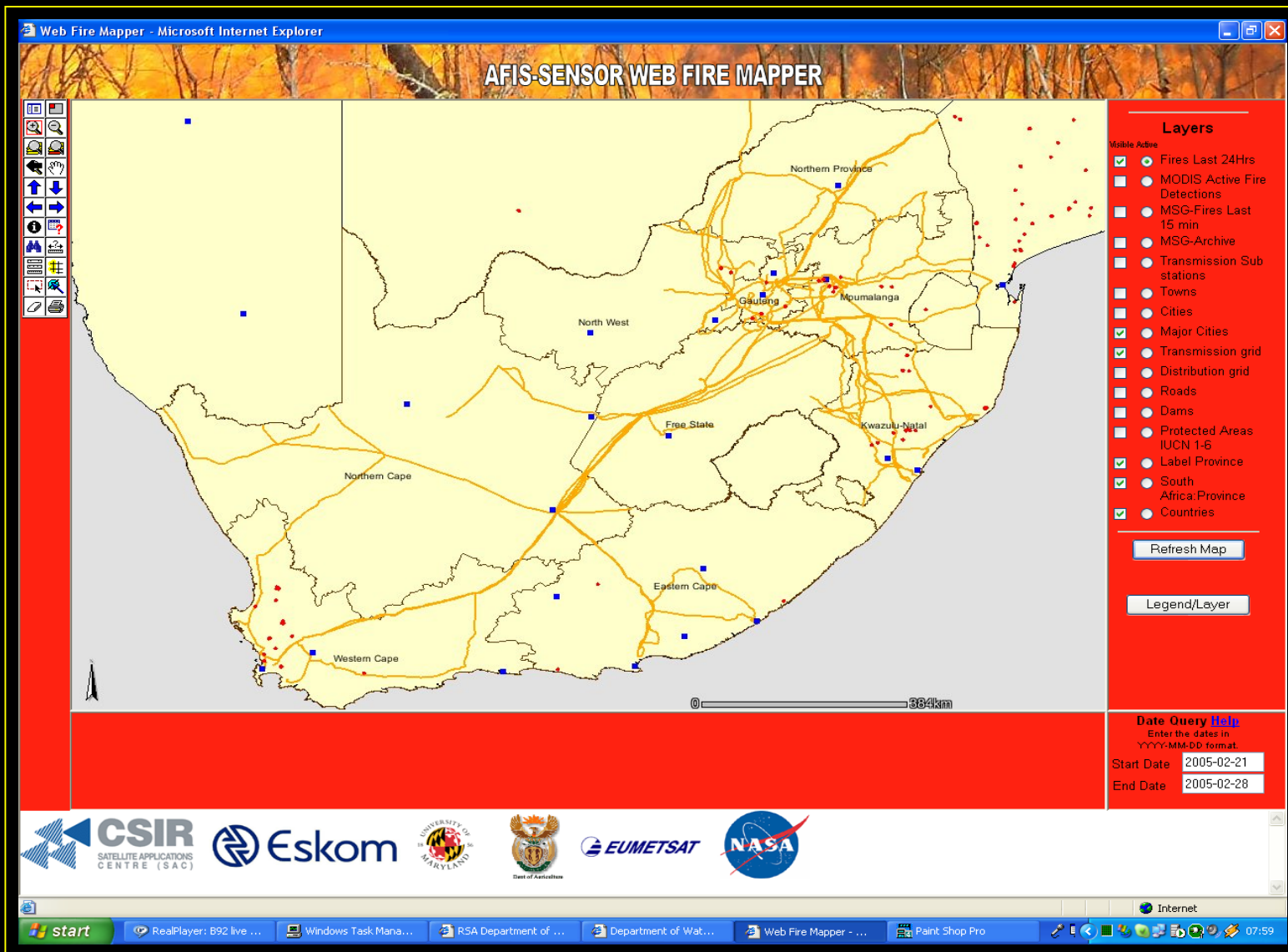
The screenshot displays the ArcView GIS interface. The main map area shows a spatial distribution of features including roads, rivers, and communities. A legend on the left lists layers such as EC Airports, EC Clinics, EC Schools, EC SAPS, EC Roads, EC Rails, Rivers, EC Communities, and EC TLC. The right-hand panel contains a 'Listing of all:' section with links for Local Authorities, Communities, Mag. Dist., Dist. Council, and Quads. Below this, there are three sections for selecting a community: 'per DC:' with a dropdown for 'AMATOLA', 'or per MD:' with a dropdown for 'ALEXANDRIA', and 'or per Council:' with a dropdown for 'ABERDEEN'. Each section includes 'Submit' and 'Reset' buttons. At the bottom of the interface, a data table is visible, showing details for a feature named 'Umtata'.

Name	Abbreviati	Elevation	Runway_1	Length_1_m	Surface_1	Runway_2	Length_2_m	Surface_2	Runway_3	Length_3_m	Surface_3
Umtata	FAUT	2400	14/32	2000	Tar	09/27	1500	Grass	No Data	No Data	No Data

# SAC – Bush Fire Monitoring

DISASTER MITIGATION

ARCSIMS



# Disaster Recovery

DISASTER RECOVERY

ARCVIEWS

The screenshot shows a web browser window titled "1:250 000 Maps - Microsoft Internet Explorer". The address bar contains the URL "http://ndmccgis.pwv.gov.za/website/s250k/viewer.htm". The main content area displays a map of South Africa at a scale of 1:250,000. The map is overlaid with a yellow grid. A red rectangular box highlights a specific area in the Northern Cape province. To the right of the map, there is a vertical list of image files, each with a checkbox: g2924.tif, g2926.tif, g2928.tif, g2930.tif, g3017.tif, g3018.tif, g3020.tif, g3022.tif, g3024.tif, g3026.tif, g3028.tif, g3030.tif, g3118.tif, g3120.tif, g3122.tif, g3124.tif, g3126.tif, g3128.tif, g3218.tif, g3220.tif, g3222.tif, g3224.tif, g3226.tif, g3228.tif, g3318.tif, g3319.tif, g3320.tif, g3322.tif, g3324.tif, g3326.tif, and g3420.tif. Below the list is a "Refresh Map" button. At the bottom of the map interface, there is a "Zoom In" button and a status bar showing "Map: 29.06, -27 -- Image: 728, 666 -- ScaleFactor: 0.003355752124072169".

# Disaster Recovery

DISASTER RECOVERY

ARCVIEWS

1:250 000 Maps - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Print Refresh

Address <http://ndmcgis.pww.gov.za/website/s250k/viewer.htm> Go Links

1:250 000 Maps

Layers

Visible	Active	Layer Name
<input checked="" type="checkbox"/>	<input type="radio"/>	50 000 Grid
<input checked="" type="checkbox"/>	<input type="radio"/>	Provinces
<input checked="" type="checkbox"/>	<input type="radio"/>	g2230.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2426.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2428.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2430.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2520.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2522.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2524.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2526.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2528.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2530.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2620.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2622.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2624.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2626.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2628.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2630.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2632.tif
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<input checked="" type="checkbox"/>	<input type="radio"/>	g2722.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2724.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2726.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2728.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2730.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2816.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2818.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2820.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2822.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2824.tif
<input checked="" type="checkbox"/>	<input type="radio"/>	g2826.tif

Zoom In

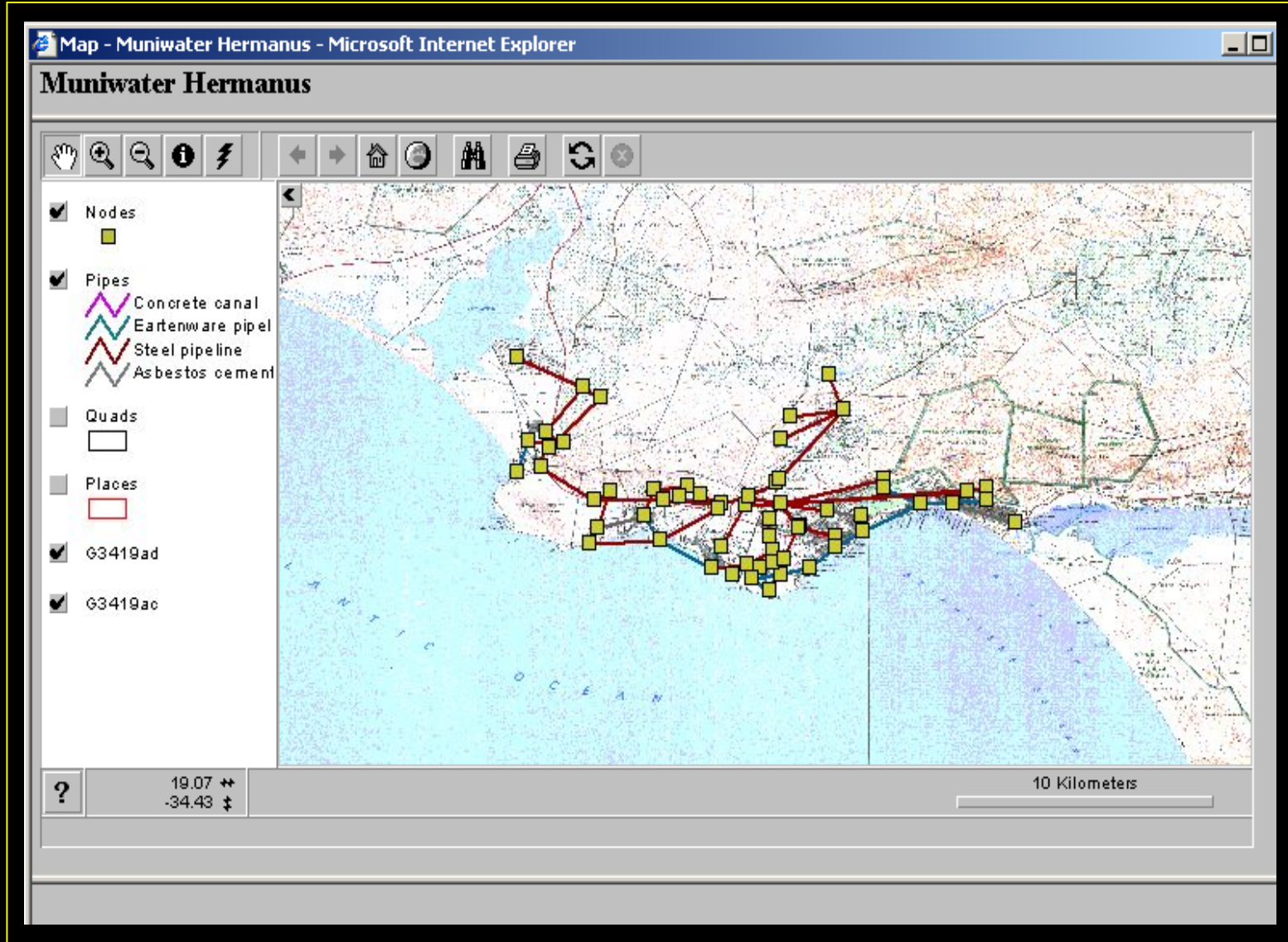
Map: 29.32, -25.47 -- Image: 454, 350 -- ScaleFactor: 0.0003426719651764865

Local intranet

# Disaster Recovery

DISASTER RECOVERY

ARCVIEWS



# Disaster Recovery

DISASTER RECOVERY

ARCVIEWS

Map - Muniwater Hermanus - Microsoft Internet Explorer

### Muniwater Hermanus

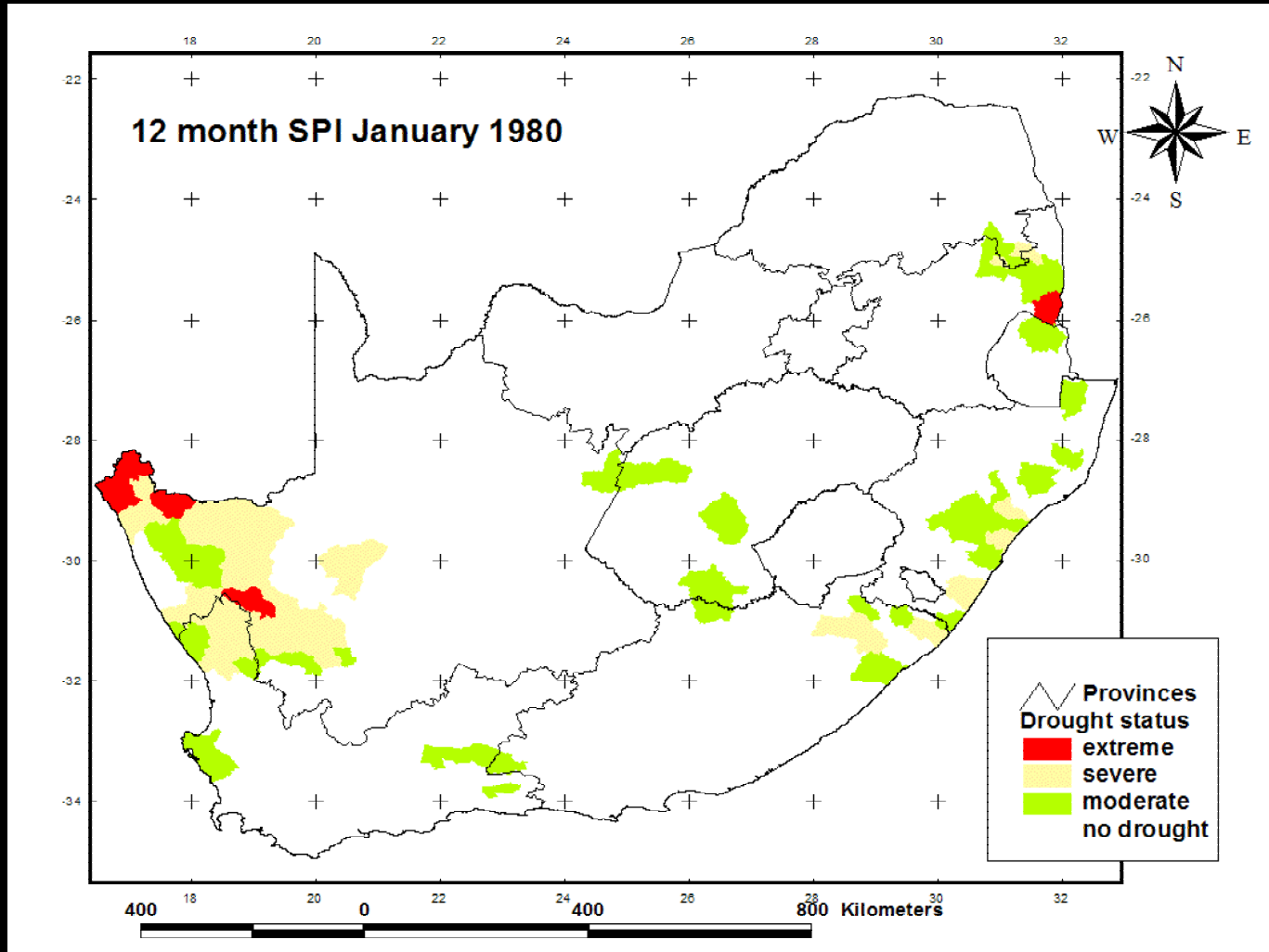
Legend:

- Nodes
- Pipes
  - Concrete canal
  - Earthenware pipel
  - Steel pipeline
  - Asbestos cement
- Quads
- Places
- 63419ad
- 63419ac

Coordinates: 19.21 ++, -34.43 ‡

Organisati	Latitude	Longitude	Descriptio	Parent	Type	X	Y	Srx	Sry	Descriptio	Routeno	Icon	Det
10	34.413000	19.215000	Mt. Pleasant resvr	7	2	2401.875000	10702.443000	0.000000	0.000000	No Data	1100	reserv01.bmp	No Data

<http://edmc1.pwv.gov.za/dwaf>



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