

GeoMedia Grid used to capture hazard and risk data used for a national initiative in New Zealand



NEW ZEALAND: A NATIONAL INITIATIVE

THE CHALLENGE

A National initiative implemented and managed by the New Zealand Fire Service, the wildfire threat analysis (WTA) is a systematic method of identifying the level of threat a particular area faces from fire. Councils around New Zealand, on behalf of the Rural Fire Authorities, are responsible for managing and mapping the data that measures the threat of wildfire and is subsequently used to achieve optimal fire management nation-wide.

WTA is a strategic planning tool for fire managers that looks at long-term seasonal impacts and has highlighted the value of geospatial technology in this field. Christchurch City Council and Southland District Council are leading the way with their response to the requirements of the WTA.

THE PROJECT OBJECTIVE

Motivated by needs to meet new national legislative requirements to inform fire managers, the objective for both the Christchurch City Council and Southland District Council was to produce and maintain an overall map displaying various wildfire threats to capture the data and present it in an intelligible format.

The information needed to be detailed, yet clear, for fire managers to review and assess the scale of the threat instantly and also use the information to educate residents and put appropriate fire prevention schemes in place.

THE SOLUTION

Councils and Fire Authorities around New Zealand were required to undertake a study in line with national guidelines set by the New Zealand Fire Service to accumulate the risk, hazard and value data and apply a 'score' to measure the threat in their area. The level of threat is generally related to a combination of ignition potential, potential fire behaviour and the intrinsic values of the area threatened.

Christchurch City Council and Southland District Council use GeoMedia Grid to fulfil these ongoing requirements. Data is measured in three categories: risk, hazard, value – the overall threat is a calculated combination of all three.

The overall threat is a measured by calculating data within the three categories:

- Risk: How likely is a fire to start here? – e.g. people access, power lines
- Hazard: Once alight, how quickly with fire burn? – e.g. vegetation
- Value: What is the impact of fire? e.g. loss of life, property in the area

CHRISTCHURCH CITY COUNCIL PROFILE:

Christchurch City Council is located on the east coast of New Zealand's South Island, has the second largest population of all New Zealand territorial authorities, and is the largest urban centre in the South Island. Known as the garden city due to its expansive parks and public gardens, Christchurch city has a land area of 45,240 hectares.

SOUTHLAND DISTRICT COUNCIL AND SOUTHERN RURAL FIRE AUTHORITY PROFILE:

Based in the city of Invercargill, the southern most city in New Zealand, the role of the Southern Rural Fire Authority (RFA) is to train fire crew and manage issues relating to fire in the area of the Southland District Council - an area of 30,753 km². The RFA forms branch of the Council that has jurisdiction over the largest (by land area) territorial local authority in New Zealand.

PRODUCTS USED

- GeoMedia Professional
- GeoMedia Grid

**"Users do clever things
with Intergraph"**

Shelley Sutcliffe
Senior Information Technician, GIS & Data
Christchurch City Council

"This measured points based system ensures that a fire manager who is not familiar with an area would be able to take one look at a map and identify the scale of the problem and instantly know the resources required for optimal fire management," said Shelley Sutcliffe, Senior Information Technician, GIS & Data with Christchurch City Council.

"The threat is calculated using the three layers of data – GeoMedia Grid is fantastic for this because you can just output layers and instantly calculate modifications to the data and how that effects the overall threat."

ORGANISING THE DATA

Southland District Council's Southern Rural Fire Authority is using GeoMedia Professional to put the base GIS layers together and then rastering from this into a format to use in GeoMedia Grid. The data has been sourced from private forestry companies, environment management organisations, department of conservation, power, railway and road departments and local authorities to name a few.

"The project is best done using GIS because of the complexity – there is so much information and data involved. We determined that GeoMedia Grid was suitable because of its ability to add up all the different layers of information," said Gerald Dysart, Wildfire Threat Analyst, Southern Rural Fire Authority.

"I was impressed by the way you can bring in a wide range of file formats without having to convert them to a native format, which was great for this project because I was dealing with a wide range of people and organisations using different software and data formats," he said.

BUSINESS BENEFITS

"The obvious benefit derived from this project is that the data is available for fire managers to use instantly for the benefit of the whole community - the benefit of the software, however is being able to work with live data," Mrs Sutcliffe continued.

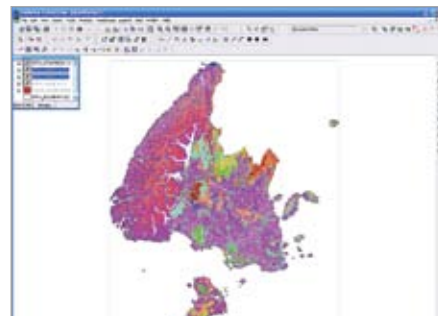
"GeoMedia has been built in such a way that users can re-run the process easily and treat it as a live document rather than a one-off report. GeoMedia Grid allows users to rasterise each layer and simply 'slip in' changed data. For example if a forest is logged, it completely changes the wildfire threat for that area – we just adjust the data and because our system is live and automated it adjusts the threat instantly."

"We can pull live data at anytime," she said. "The granularity is great as well because you can identify areas you need to zoom in on and re-process and GeoMedia Grid supports that."

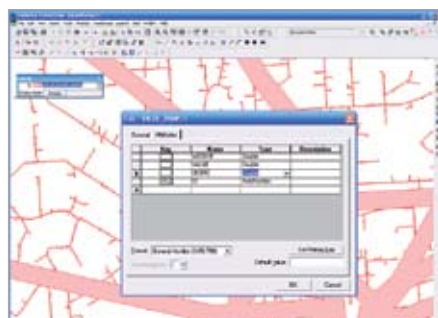
FUTURE DEVELOPMENTS

The WTA is an ongoing national initiative. Both the Christchurch City Council and Southland District Council will continue to revise the project according to new or changing data.

For more information, visit www.intergraph.com



GeoMedia Professional adding layers and displaying results



Taking power network data into GeoMedia Grid



Rasterise feature class using GeoMedia Grid

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