Baja California Risk Atlas hosted in ArcGIS online

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Introduction

In a good example of collaboration between academy and decision makers, CICESE and the Baja California State Government have developed the State Risk Atlas.

We used ArcGIS-online base maps and the distribution of natural hazards to facilitate understanding of the close correlation between development and vulnerability to natural hazards in BC State.

Main user:
Coordination of State Civil Protection.
Outline

• Requirements
• Access to Risk Atlas
• Main hazards
• Some examples
  - Earthquakes
  - Landslides
  - Floods
  - Wildfires
  - Toxic materials
• E-library
• Main applications
Requirements

• ArcGIS for desktop 10.x.

• ArcGIS online license with excellent internet connection.
Access to Risk Atlas:

- Login ArcGIS Online: https://cicese1.maps.arcgis.com
Considered hazards

- Wildfires
- Landslides
- Seismic
- Flood
- Chemical
Earthquakes: Tectonic setup Baja California

Acosta Chang, 2014
Earthquakes: Seismic activity and main faults
Earthquakes: Seismic activity and main faults

Acosta Chang, 2014
Seismic: Scenario earthquake – Imperial fault

Acosta Chang, 2014
Earthquakes: MMI distribution for scenario earthquake – Mexicali

Acosta Chang, 2014
Lanslides: Landslide-prone areas in Tijuana
May 15, 2015 landslide in Tijuana
Flooded areas in Tijuana for a 50-year return period

Gamez E., 2014
Flooded areas in Tijuana for a 50-year return period
Wildfires – Associated with Santa Ana winds

Sepúlveda, 2014
Disaster Risk data & Information

• Datasets

Maps: Land use and vegetation, water erosion, wildfires
Owner: CONAFOR | Type: Base Data | Updated: October, 2011 | Region: North America | Country: Mexico

Contoured maps and isotherms
Owner: CONAGUA | Type: Satellite Image | Updated: October, 2011 | Region: North America | Country: Mexico

Geomorphological Map
Owner: CICESE | Type: Base Data | Updated: October, 2011 | Region: North America | Country: Mexico

Disaster Risk data & Information

• Datasets

Hazard Maps

Seismic Intensity Map of Mexicali, Baja California
Authors: Gómez Balmaceda Ena | Type: Intensity map | Scale: 1:100,000 | Region: North America | Country: Mexico

Municipal Atlas Risk of Tijuana
Authors: DMPC Tijuana | Type: Risk map | Scale: 1:100,000 | Region: North America | Country: Mexico

Flood hazard map of Ensenada
Authors: IMIP Ensenada | Type: Zoning map | Scale: 1:50,000 | Region: North America | Country: Mexico

Hazard atlas State of Baja California
Authors: DEPC | Type: Indicative map | Scale: 1:100,000 | Region: North America | Country: Mexico

Geologic Map Hazard
Authors: CICESE | Type: Indicative map | Scale: 1:200,000 | Region: North America | Country: Mexico

Hydrometeorological hazard Maps
Authors: CICESE | Type: Indicative map | Scale: 1:100,000 | Region: North America | Country: Mexico

Seismic microzoning maps of Mexicali
Authors: CICESE | Type: Zoning map | Scale: 1:100,000 | Region: North America | Country: Mexico

E-library: http://www.proteccioncivilbc.gob.mx/e-library.htm
Main applications
Coordination of State Civil Protection

• Preparation of guidelines for emergency response
• Delineation of realistic pre-disaster contingency plans
• Incorporation of Disaster Risk considerations in public decision making
• Continuous Update of Disaster Risk information in collaboration with academia
Thank you!
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