Building Science-Based Spatial Decision Support Tools to Promote Environmental Sustainability

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Outline
- Environmental advocacy and management in a digital age
- The Green Visions Plan for 21st Century Southern California
- Geographically explicit inventory and modeling studies
- Spatial decision support tools to support distributed, science-based management

Protecting / restoring natural resources in Los Angeles is challenging

Granting agencies must prioritize competing proposals

Regional comparisons are difficult

The Green Visions Plan provides information about entire region
The Green Visions Plan: online tools designed to support decisions

Green Visions Plan balances habitat, watershed, and open space goals

Protect and restore native biodiversity

Improve watershed health

Increase access to recreational open space

Leverage funds with multiple use projects
Completed description of hydrological assets

Assembled stream gauge histories

MIKE BASIN model runs

Implemented multiple species conservation approach

Developed maps and related datasets describing historical vegetation cover

Overlay of species ranges with protected lands shows gaps
Conducted extensive audit of recreational open space

First regional comparison of open space quality and quantity

Calculated mismatch between park supply and park need

- Park congestion – demand for parks assuming everyone uses nearest park at some uniform rate
- Park service areas – network variant of map equity approach adopted by Wolch et al. (2005)

Developed set of online tools for decision support
Tools assess need for recreation and public access

Park Analysis Results …

<table>
<thead>
<tr>
<th>Parks</th>
<th>People per park hectare</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Existing</td>
</tr>
<tr>
<td>New Park</td>
<td>2,000-7,000</td>
</tr>
<tr>
<td>Peck Rd County Park</td>
<td>213</td>
</tr>
<tr>
<td>Barnes Park</td>
<td>3,733</td>
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<tr>
<td>Roadside Park</td>
<td>6,606</td>
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<tr>
<td>Morgan Park</td>
<td>7,144</td>
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<tr>
<td>Santa Fe Dam Rec. Area</td>
<td>20</td>
</tr>
<tr>
<td>Lambert Park</td>
<td>15,250</td>
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<tr>
<td>Zamora Park</td>
<td>20,140</td>
</tr>
<tr>
<td>Bassett Lit. League Park</td>
<td>16,634</td>
</tr>
</tbody>
</table>

Tools show environmentally sensitive habitat areas

- Projects should reduce pollution in environmentally sensitive habitat areas
  - Tools map these areas based on modeled presence of target species (both terrestrial and aquatic)
Tools identify sites needing water quality improvements

- Region-wide predictive water quality model
  - Identifies those areas most in need of water quality improvements
  - Assesses need for storm water capture and management

Web Links / Questions ...

http://gislab.usc.edu
http://greenvisionsplan.net
http://gv-server.usc.edu/GVWebTools_public/imaps_test/app.asp