Locating Scrap Tire Piles

A Case Study on the Mexico/Texas Border
Agenda

- Waste Tires: A Binational Concern
- Tires in the Texas/Mexico Border Region
- Locating Clandestine Waste Tire Sites
Quantifying the Problem

- **290 million waste tires generated per year in the U.S.**
  - 80% U.S. tires are recycled, up from 10% in early 1990s
- **25 million in Mexico**
  - 9% in Mexico are “disposed of properly”
- **Approx. 300 Million stockpiled in U.S.**

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1. Rubber Manufacturers Association (RMA)
2. Secretaria del Medio Ambiente
3. Rubber Manufacturers Association (RMA)
4. Secretaria del Medio Ambiente
5. Mary Tiemann
Nuevo Laredo: Pasivo: 380 mil
Matamoros: Pasivo: 600 mil
«Llanset»: Pasivo: 400 mil
«El Centinela»: Pasivo: 1'200 mil
Saneamiento 2004 – 2005: 420,000
「INNOR」: Pasivo: 300 mil
Tijuana: Pasivo: 40 mil llantas
Mexicali: Pasivo: 300 mil
Ciudad Juárez: Pasivo: 4'500 mil
Nuevo Laredo: Pasivo: 380 mil
Matamoros: Pasivo: 600 mil
Saneamiento 2004
40 mil llantas
Saneamiento 2004
119,910 llantas
Saneamiento 2005
42,690 llantas
Chihuahua: 1 sitio contaminado 4'500 mil
Baja California: 3 sitios contaminados:
- INNOR 300 mil
- Llanset 400 mil
- El Centinela 1'200 mil
Acciones de saneamiento:
- Tijuana (6 delegs) 40 mil
- INNOR 420 mil
- El Centinela 400 mil
- Total 860 mil
Source: Emily Pimentel, Scrap Tire Management Activities
Tire Sites (March 2005)
• Goal #3, Objective 3: Waste tires pose a risk to health and the environment, must be cleaned up and put to productive use
• Waste Tire Policy Forum, 2005
  ► Stockpiling is not an acceptable method of disposal
  ► Reduce existing stockpiles to minimize disease threats and prevent tire pile fires
  ► Pursue recycling options

The Risks of Scrap Tires

► Vector Borne Diseases

► Tire Fires
   - Air pollution
   - Soil contamination
   - Water contamination
## Major Texas Tire Fires Since 1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Site</th>
<th>City</th>
<th>Associated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>SPE Tire Disposal</td>
<td>Midlothian</td>
<td>$1,800,000</td>
</tr>
<tr>
<td>Sep-98</td>
<td>ERI</td>
<td>Stamford</td>
<td>$380,000</td>
</tr>
<tr>
<td>Oct-98</td>
<td>Madisonville Drum</td>
<td>Madisonville</td>
<td>$193,000</td>
</tr>
<tr>
<td>Aug-99</td>
<td>J.L. Elliot Landfill</td>
<td>Corpus Christi</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>Nov-99</td>
<td>Los Ebanos</td>
<td>McAllen</td>
<td>$16,000</td>
</tr>
<tr>
<td>Sep-00</td>
<td>Gibson Recycling 1</td>
<td>Atlanta</td>
<td>$123,000</td>
</tr>
<tr>
<td>NA</td>
<td>Gibson Recycling 2</td>
<td>Atlanta</td>
<td>$60,000</td>
</tr>
<tr>
<td>5-Feb</td>
<td>Old World Tire (Olmoto)</td>
<td>Brownsville</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: Allen Blackman and Alejandra Palma, updated by the authors.
# Tires in the Mexico/Texas Border Region

<table>
<thead>
<tr>
<th>City</th>
<th>Est. Number of Tires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cd. Juarez</td>
<td>5 million</td>
</tr>
<tr>
<td>Nuevo Laredo</td>
<td>30,000 (burned July 2005)</td>
</tr>
<tr>
<td>Acuna</td>
<td>120,000</td>
</tr>
<tr>
<td>Reynosa/Matamoros</td>
<td>1 million</td>
</tr>
</tbody>
</table>

Source: Chen-Luh Lin, Jan D. Miller and Jose R. Parga
Mapping & Quantifying Waste Tires

- BECC: qualitative survey
- UABC: calculus and surveying instruments
- Various: mapping based on local officials’ reports
- EPA Region 9: visual inspection of aerial photography
- UT/Austin and CIWMB: remote sensing software

U.S. Environmental Protection Agency
California Integrated Waste Management Board
Obtain aerial images and remote sensing software

Verify the existence of a known site in the area of interest

Use this base pile to determine pixels that are spectrally similar to the base pile
ERDAS Results and Concerns

- Possible to rapidly survey a region for clandestine waste tire sites
- Several potential tire sites located
- Shadows and dark water problematic
- High cost of attaining software and images
- Software Training Needed
- Remote sensing does not eliminate the need for on-the-ground verification


Bibliography


