Feral Hogs in a Watershed Context

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Azle Library, Azle, Texas
Tarrant Regional Water District

Located in the Trinity River basin

Authorized in 1924 for
- Flood Protection
- Water Supply

Today...
- Eleven county service area
- > 2 million people
- > 30 wholesale customers
TRWD Reservoir Development

4 Major Reservoirs

Watersheds

>5,000 mi²

>5,500 stream mi.
Water Resource Challenges

Threats to Drinking Water Supplies

Sedimentation and water quality changes caused by stormwater runoff and erosion.

Figure 8: Eagle Mountain Sediment Thickness Map

Eagle Mountain Historic Volume Measurements

$y = -309.71x + 797307$

$R^2 = 0.5571$

8.3% loss

[Graph showing sediment thickness and volume changes over time]
Water Resource Challenges

Water Quality - Eutrophication

20 Yr Trend Study of Chlorophyl-a

<table>
<thead>
<tr>
<th>Lake</th>
<th>Median (μg/L)</th>
<th>Trend (%APR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlington</td>
<td>27.5</td>
<td>6.23</td>
</tr>
<tr>
<td>Cedar Crk</td>
<td>20.0</td>
<td>3.60</td>
</tr>
<tr>
<td><strong>Eagle Mtn</strong></td>
<td><strong>18.8</strong></td>
<td><strong>2.84</strong></td>
</tr>
<tr>
<td>Richland</td>
<td>11.4</td>
<td>2.70</td>
</tr>
<tr>
<td>Benbrook</td>
<td>16.7</td>
<td>2.48</td>
</tr>
<tr>
<td>Bridgeport</td>
<td>3.5</td>
<td>1.79</td>
</tr>
</tbody>
</table>
Protecting Water Quality
Watershed Protection Plans

**Stakeholder driven process**

Source and load modeling
- Landscape
- Instream
- Reservoir

BMPs and Education/Outreach

Economic Analysis

Implementation Plan
- Schedule
- Milestones

Acceptance of plan by State and EPA may open opportunities for future funding.
Factors Affecting Water Quality

Eagle Mountain Lake

Sources of loads to the lake:

**Sediment**
- Channel: 47%
- Crop: 31%
- Urban: 9%
- Forest: 1%
- Range: 11%
- Pasture: 1%
- WWTP: 0%

**Total Phosphorus**
- Channel: 25%
- Crop: 32%
- Range: 15%
- Pasture: 7%
- WWTP: 5%
- Urban: 16%
- Forest: 0%
Factors Affecting Water Quality
Eagle Mountain Lake

Load from uplands (tons/ha)
Relative loading from channel reaches
Factors Affecting Water Quality

Eagle Mountain Lake

Loading from uplands (kg/ha)
Factors Affecting Water Quality

Eagle Mountain Lake

SELECT Analysis
Density: 20 acres per animal
Estimated Population: 4,814

“Home Territory” Land Uses
- Mixed Forest
- Deciduous Forest
- Evergreen Forest

From 2012 SELECT Report
Factors Affecting Water Quality

Feral Hogs – Equal Opportunity Destroyers

Agricultural Land

Stream Channels

Urban Areas