Development of Management Alternatives for LWD: An Interdisciplinary Approach to a Multifaceted Situation

Jeffery M. Coffey, Tarrant Regional Water District
Tina Hendon, Tarrant Regional Water District
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.

Bridgeport (1931)
Eagle Mountain (1932)
Cedar Creek (1964)
Richland-Chambers (1987)
Eagle Mountain Lake Watershed

Land Use

- Rangeland: 60%
- Forest: 18%
- Pasture: 9%
- Urban: 10%
- Cropland: 3%

Urban Riparian Symposium Feb15-17, 2017
Threats to Drinking Water Supplies

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

8.3% loss
Sediment Sources for Eagle Mountain Lake

Sediment Sources

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

Channel erosion estimation, SWAT report

Urban Riparian Symposium Feb 15-17, 2017
All LWD is not created equal...

LWD is a problem when:

- Urban Riparian Symposium Feb 15-17, 2017
What is tolerable?

Acceptable vs. Unacceptable LWD
TRWD LWD Project Objectives

Seeks to provide a framework within the organization that formalizes the awareness of LWD, notifies appropriate resources, identifies and implements the most appropriate response actions.

- Identify & Document Existence
- Assess LWD Type and Threat
- Notify Appropriate Personnel
- Characterize Current and Future Impact
- Conduct Remediation

Urban Riparian Symposium Feb15-17, 2017
Involving TRWD Stakeholders

* Water Supply
* Flooding
* Land Owners
* Environmental
* Recreational
TRWD LWD Project Study Area

West Fork Trinity River below Bridgeport Reservoir.
TRWD LWD Phase 1

- Conduct regular aerial surveys
- Document the locations of LWD
- Import LWD Locations into TRWD GIS
- Examine patterns
- Document changes in LWD locations and complexity with respect to rainfall/streamflow characteristics
50% complete input/review

Try to standardize collection of Photograph(s) of each location

Challenging to classify and prioritize each location of LWD observation for fieldwork

Conducting the flights during prescriptive stream flows, reservoir releases, or after flood events.

Urban Riparian Symposium Feb 15-17, 2017
Examining LWD Response

5th Observation – 12/10/2015


Urban Riparian Symposium Feb15-17, 2017
Why is LWD where it is?
Conclusions

* LWD is a multifaceted issue
* Awareness, Communication, Response
* Manage existing LWD by developing & implementing an “Appropriate” management strategy
* Address sources of LWD through targeted E&O and other programs to help landowners manage riparian areas.
Thank You

Questions?

For additional information please contact:
Jeff Coffey (817)720-4242
Jeff.Coffey@trwd.com
Tina Hendon (817)720-4447
Tina.Hendon@trwd.com