



Large-Scale Composting System as a Means of Controlling Water Hyacinth

Water Body	Spring Lake, San Marcos River (Seg 1814)
Location	Hays County
River Basin	Guadalupe River (18)
Contractor	Texas State University-River Systems Institute (RSI)
Project Period	May 22, 2008 to December 31, 2010
Project Total	\$442,432 (Federal 60% and Local Match 40%)

Project Description

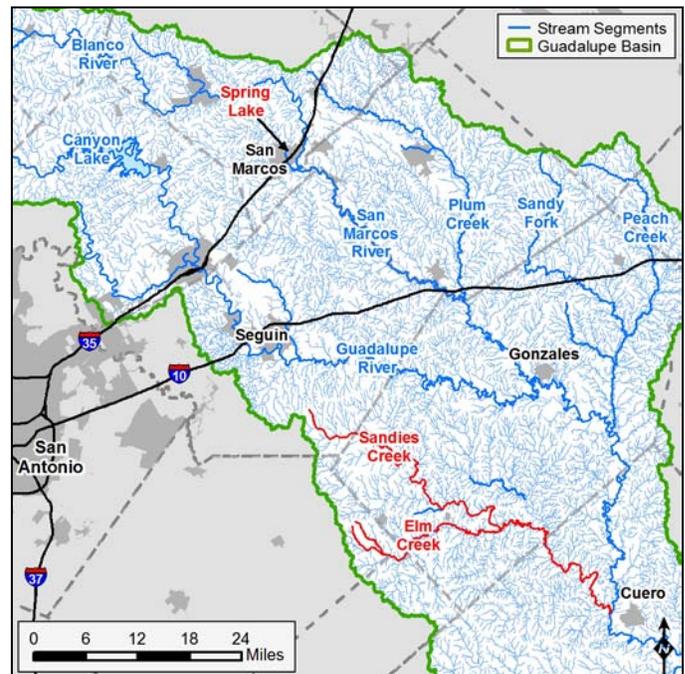
Eichhornia crassipes, water hyacinth, is a native of the Amazon River. It became a nationwide aquatic weed problem during the last century after its introduction to the United States in 1884 in New Orleans. The problems caused by water hyacinth include blocked waterways and lowered dissolved oxygen resulting in reduced available oxygen for animals and other plants. Biological and environmentally safe types of control and removal are important because water hyacinth normally grows in environmentally sensitive areas.

Spring Lake, at the headwaters of the San Marcos River, contains water hyacinth. Management is important because it may pose a threat to the unique ecosystem of the lake. The RSI and the Biology Department at Texas State University have been involved in an effort to preserve the river and its banks as a native habitat for animals and plants, including the control of invasive and introduced plant species.

For this project, the RSI developed a large-scale compost operation that utilized invasive water hyacinth harvested from Spring Lake. Poultry litter, removed from the bacteria-impaired watershed of Sandies Creek (Segment 1803C), and other feedstocks were combined with water hyacinth to produce compost that destroys the water hyacinth seed. Laboratory work was conducted to determine the best mixture of feedstocks to destroy the hyacinth seeds and to test the compost quality. The results of this project will be presented to interested parties and will serve as an example best management practice (BMP) for other water bodies with water hyacinth problems.

Final Results

The project was completed on December 31, 2010. A five-acre compost facility and a storm water collection pond were constructed. Scientific evidence showed that water hyacinth seeds and other propagules are destroyed when compost piles maintain temperatures of 135 degrees Fahrenheit or greater. Composting was



shown to be an effective way to manage water hyacinth. To read more about the study please visit the [RSI web-site](#).

For More Information

TCEQ Project Manager

Jack Higginbotham
512.239.6699; Jack.Higginbotham@tceq.texas.gov

Texas State University-RSI

Michael Abbott
512.245.6652; abbott@txstate.edu

Project Highlights

- 05/22/2008 – Signed contract for project initiation.
- 10/23/2008 – The quality assurance project plan (QAPP) was completed.
- 12/18/2009 – The Interim Report was completed.
- 01/22/2010 – The QAPP was amended.
- 04/07/2010 – The QAPP was amended.
- 03/02/2011 – The Final Report was completed.