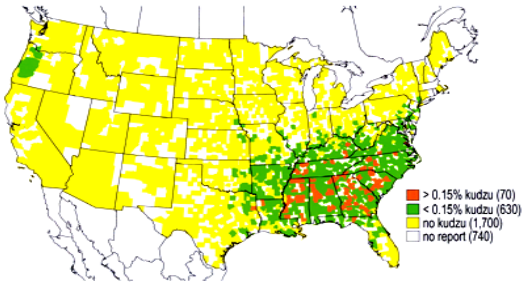
Kudzu Range D. Jewett



KUDZU STUDY

Funded in part with a USDA Grant administered by the Southeastern Tennessee Resource Conservation and Development Council

- Testing was done to validate a theory based on field observations of the growth patterns of kudzu on numerous infestation sites in Tennessee, Alabama, Georgia and North Carolina. The following slides are representative of what was observed.

- A common occurrence observed was that growing in the wild, kudzu would not climb a host with a diameter of about seven to eight inches
- This led to the desire to determine the limitations of the plant

- Study conducted Mar-Nov 2002
- The following are photos from camera points at various individual sites within the overall test site

- Each site tested a different shape/design
- The objective was to test the theory that kudzu has specific growth characteristics which could be utilized to stop the spread of the very aggressive vine

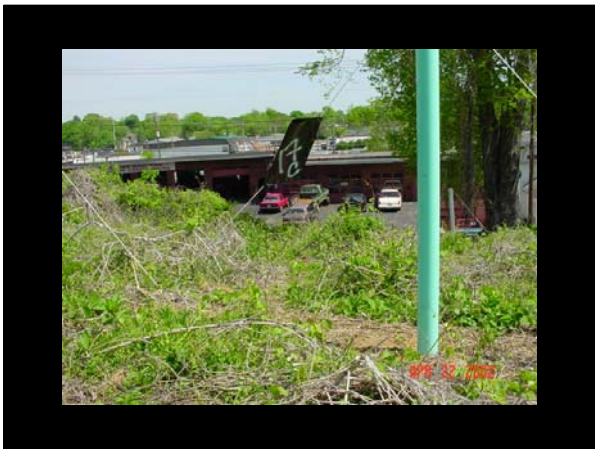
CONTROL SITES

- Two specific types of control sections were set up
- The first was a two inch diameter pipe with one of two guy-wires with no attempt to control the kudzu growth
- The second was a section of lawn adjacent to the infestation which was allowed to grow

- First control site…note the aggressive way the kudzu climbs and quickly overruns the test materials

SIX INCH ID PLASTIC PIPE

A test site to show the inability of kudzu to climb a smooth surfaced object with a diameter over 6 inches




JUN 2 2002


JUN 11 2002


JUN 29 2002


JUL 13 2002


JUL 21 2002


AUG 4 2002

- Testing included cylinders on simulated guy-wires, of various lengths and diameters


5
4
MAY 26 2002


5
4


5
4
JUN 8 2002


5
4
JUN 11 2002


5
4


5
4

- Based on observations of the growth characteristics of kudzu, and the results of several different shapes tested, the following design was developed, with the expected result
- The shape does not allow the kudzu to wrap around and develop its woody stem before gravity pulls it away


JUL 30 2002


JUL 30 2002


AUG 4 2002


AUG 10 2002


AUG 18 2002


AUG 20 2002


SEP 10 2002


SEP 22 2002


NOV 2 2002


NOV 21 2002


SEP 10 2002


OCT 21 2002

- Testing also included applying the design shape to a simulated horizontal guy-wire

- The second control section .. a section of yard adjacent to the kudzu infestation which was not maintained by mowing or other means

FENCE PROTECTION

36 INCH HIGH PICKET FENCE
With the infestation side treated with
a smooth surfaced material


JUL 29 2002


AUG 8 2002


AUG 20 2002


OCT 21 2002


NOV 21 2002


NOV 21 2002

- The fence was protected from being covered by the kudzu with only a minimum of vegetation removal on the kudzu infestation side….this was done with hedge clippers on two different occasions in late summer/early fall
- The site shows that kudzu can be prevented from spreading off site with minimum effort

- Based on the results of the various tests, it can be shown that the spread of kudzu can be controlled with certain predetermined shapes which exceed the growth limitations of the vine

- As a follow-up to the results learned in 2002, samples were installed in actual field conditions during 2003/2004 to further validate the reliability of the designs


MAY 25 2003


MAY 29 2003


JUN 14 2003


JUL 17 2003


SEP 29 2003


OCT 30 2003


DEC 19 2003


MAR 24 2003


MAR 24 2003


MAY 25 2003


MAY 29 2003


JUN 14 2003


JUL 17 2003


AUG 29 2003


SEP 29 2003


OCT 30 2003


DEC 10 2003


JAN 25 2004


OCT 27 2002


SEP 28 2003


MAR 25 2003


AUG 18 2004


JUN 23 2005
RC&D AND USD
OFFICIALS ON
MONITORING
REVIEW

NORRIS KUDZU TEST PROJECT

Conducted during Fall 03 through Fall 04

- Test was conducted through an agreement with TVA personnel at the Norris Dam Reservation and Callahan's Kudzu Management LLC

- The purpose of the test was to determine if removing vines from all large (diameter greater than 8 inches) trees and all stems smaller than 8 inches would stop the spread and climbing of kudzu in the mature stand of timber

- The test site is located above the overlook to the northwest of Norris Dam
- Most photos were taken from the parking lot or under the transmission lines

- Appearance of the kudzu infestation taken during a site visit in 2003

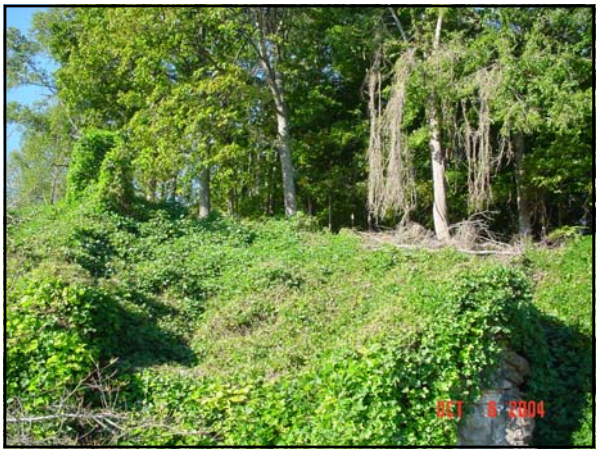
- Kudzu is not very shade tolerant……sunlight readings of less than approximately 90 foot-candles will not support kudzu growth

- The first step was to remove kudzu vines which were in large timber along the interface with the infestation

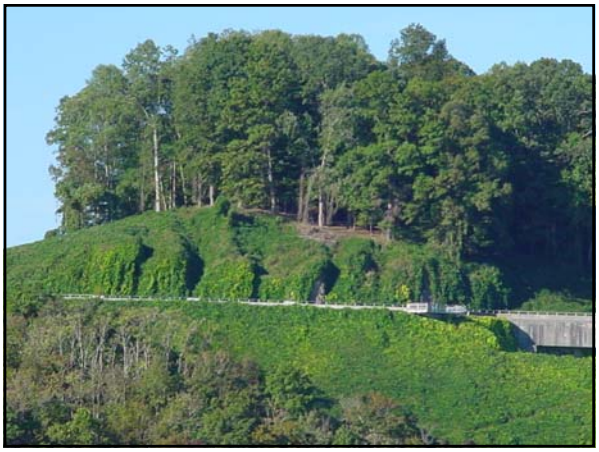
- Same tree showing the inability of kudzu to climb a large diameter stem…however all avenues for access must be removed, as Poison Ivy vines, which will provide access

- The next step was to remove all small diameter stems along the interface for a distance of about 30 feet back into the shaded area

- Final phase involved removing dead Kudzu vines from large trees. After two to three months, the dead vines are easily removed from the tree limbs. This step is necessary, because if not removed, the dead vines will over time hang down to the ground, providing an avenue for access by other growing Kudzu vines



- Time-lapse views from parking lot at test site



- View from under transmission line looking up at the western edge of the treated site

- To determine the effectiveness of the treatment, follow up visits will be made to record the effects on the kudzu and its spread. With the removal of shade at the perimeter, there will be some spread on the ground but as the shade increases some 20 to 30 feet inside the timber stand, the kudzu will be unable to grow.