A COMPARATIVE STUDY OF PHRAGMITES CONTROL MEASURES

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Phragmites australis
the Common Reed

-- invasive species
-- introduced from Europe
-- out-competes native salt marsh vegetation
Pickman Park Salt Marsh Study Site

SSU Central Campus

Salem Harbor

SSU South Campus

Pickman River

Forest River

Study Site
Aerial Photo c 1990’s
Pickman Park Marsh
two wall openings
1st trench
November 2002

June 2003
Pickman Park Marsh c 2005
three *Phragmites* stands
Reference Stand (R)
Treatments

• Cutting only
  – Weekly / biweekly during 3 growing seasons

• Cutting plus herbicide
  – Weekly / biweekly during 3 growing seasons

• Excavation to increase seawater inundation
  – Extend trench & reduce marsh elevation
    (2007)
Effectiveness of Treatment

• Comparison of mean height of 20 of the tallest stalks within a stand

  – 2006 -- baseline prior to study

  – 2011 -- 2 years after cutting / herbicide treatments ended in 2009
  -- 4 years after excavation in 2007
Phragmites Reference stand

2006

2010
*Phragmites* stand at S corner of Pickman Park Salt Marsh June 2006
Treatment = weekly / biweekly cutting to ground level

June 2007
Phragmites regrowth in S corner stand -- 2010
*Phragmites* stand at NW corner of Pickman Park Salt Marsh  
Treatment = cutting plus application of BurnOut II™
Burnout II Concentrate
Active Ingredients:
Citric Acid ..... 11%
Clove Oil ....... 6.5%
Sodium Laurel Sulfate ..... 3%
Other Ingredients:
Mineral oil, Water, Lecithin
Total Other ..... 79.5%

applied as 50:50 solution of BurnOut : vinegar (acetic acid)
*Phragmites* regrowth in NW corner stand -- 2010
*Phragmites* stand at NE corner of Pickman Park Salt Marsh June 2006
Treatment = excavation to increase salt water inundation
Excavation Equipment and Timber Mats Summer 2007
Excavation Work August 2007

September 2007
new trench
old 2002 trench
evacuated area

Pickman Park Salt Marsh 2008
*Phragmites* stand at NE corner of Pickman Park Salt Marsh

2006

2010
• Cutting only (during 3 growing seasons)
  – Ineffective
Conclusions

• Cutting only
  – Ineffective

• Cutting plus herbicide BurnOut II™ (during 3 growing seasons)
  – Ineffective
Conclusions

• Cutting only
  – Ineffective

• Cutting plus herbicide BurnOut II™
  – Ineffective

• Excavation to increase seawater inundation
  – Effective?
    (significant reduction in stalk height 4 years later)
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