**Management Practices for Invasive Plants on Construction Sites**

26 October 2006

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**INTRODUCTION**

- PERSPECTIVE FROM AN ENGINEERING/CONSTRUCTION BACKGROUND
- NOTHING SPECIFIC TO PLANT TYPES OR TARGETED SPECIES
- FOCUSES ON BUSINESS OR MANAGEMENT PRACTICES IN PREVENTION RATHER THAN ERADICATION OR REMOVAL
- LARGELY BASED ON A LOOSE CASE HISTORY IN A LARGE RURAL NATIONAL PARK IN THE LOWER 48 (YELLOWSTONE)
- A NATURAL AREA THAT HAD BEEN PROTECTED FOR 100 YEARS BUT HAD MULTIPLE MEANS OF INTRODUCING NON-NATIVES, A LARGE CONSTRUCTION PROGRAM, AND MULTIPLE POLITICAL ENTITIES AROUND THE PARK
MANAGEMENT PRACTICES UNTIL THE 1980’S

- Conservation of topsoil loosely enforced
- Mixing of soil layers during and after construction was common
- Reseeding from virtually any commercial source was the norm
- Quality control on imported seeds was basically non-existent
- Specified reseeding was often non-native but usually local to the geographic area
- Seed mixes seen in urban areas were often specified
- Up to 15 different seeds were sometimes specified
- In the late 1970’s the park went to a standard 50/50 mix of thick-spike and streambank wheatgrass
- Resultant vegetation was usually not monitored with sporadic growth of natives, non-natives, and exotics
EVOLUTION OF BUSINESS PRACTICES

- Park plant scientists and a new landscape architect became actively involved in prevention.
- Road corridors and disturbed areas were the most heavily impacted.
- Gravel for construction was from on and off-site sources.
- Ranchlands around the park saw increases in exotics.
- Adjacent states (particularly Montana), ag extensions, and counties became active in management of, particularly, knapweed.

RECENT MANAGEMENT PRACTICES

- For construction, focused on prevention.
- Specific requirements were inserted into contracts.
- Off-road equipment must be clean before they are allowed into the park.
- Costs are fairly low once it became a standard way of doing business.
- Imported fill material to be weed free.
- Material sources outside the park were certified with cooperation with the state/county and verified by the park.
- Economic encouragement for a pit owner to eradicate weeds to meet the requirements.
- Running large amounts of fill material through a dryer was done on large road projects.
- Washed material (washed rock) was also accepted.
CONSERVATION OF SOIL AND SEED BANKS

- TOPSOIL IS SEPARATED FROM OTHER SOIL TYPES
- TOPSOIL IS KEPT UNCOMPACTED
- STOCKPILED IN WINDROWS LESS THAN 1 METER HIGH
- NOT KEPT IN STOCKPILES OVER THE WINTER
- RESPREAD AND THEN REWINDROWED IF IT HAS TO WINTER
- MATERIAL IS PLACED ON THE FINISHED PROJECT WITHOUT COMPACT
- BARK MULCH USED
- NATIVE SEED BANK SET UP TO PROPAGATE SEEDS
- COSTS BUILT INTO THE PROJECT
- PRE AND POST MONITORING OF THE SITES ARE DONE
- CONTRACTOR DOES NOT HAVE THE COSTS OF SEED SO SOME DEDUCT IN COSTS ARE SEEN
- MONITOR THREE YEARS AFTER A PROJECT
SUMMARY

- NOT A “SILVER BULLET” – THIS IS ONLY ONE FRAMEWORK AND LOCAL CONDITIONS HAVE TO BE A PART OF THE SOLUTION
- COOPERATION AND COORDINATION WITH ADJACENT ENTITIES/LANDOWNERS HAS TO OCCUR. THIS ONE SLICE OF THE WORLD IS NOT AN ISLAND
- KEEPING EQUIPMENT CLEAN IS PROBABLY THE FIRST PLACE TO START AND THAT WILL TAKE EDUCATION
- THERE ARE VARIOUS VEHICLE CLEANING OPTIONS AVAILABLE. A GOOD PLACE TO START IS FROM THE FOREST SERVICE’S PUBLICATION ON VEHICLE CLEANING FOR WEEDS AND INVASIVE SPECIES
- AFTER A FEW YEARS, CONTACTOR’S BECAME AWARE, PITS SAW AN ECONOMIC ADVANTAGE IN BEING CERTIFIED WEED-FREE AND PUT PRESSURE ON OTHER PITS TO COMPETE
QUESTIONS

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