

Native Grass Restoration, Planting Methodology, Management, and Economics

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INTRODUCTION

Currently across the state of Texas there is a growing interest in the establishment and management of native warm season grasses (NWSG's) on private properties. With this interest there is a need for Best Management Practices concerning the proper methods of planting and managing native grass stands. The success or lack of success of cooperating landowners in establishing NWSG's can leave either positive or negative impressions. It is important that we provide landowners with research driven methods so that success rates may be improved when establishing NWSG's. Additionally, the economics of establishing and maintaining NWSG's when compared with the management of 'improved grasses' is a growing issue with traditional land managers.

JUSTIFICATION

The 2010 Land and Water plan contains 4 very specific goals. Research concerning NWSG's would fall within goals one and three.

- Goal 1: Practice, encourage, and enable science based stewardship of natural and cultural resources. As a part of this goal, the Texas Parks and Wildlife Department (TPWD) is to publish, disseminate, and promote guidelines and protocols for habitat restoration and management. Additionally, TPWD will foster conservation of healthy ecosystems on private lands.
- Goal 3: Educate, inform, and engage Texas citizens in support of conservation and recreation. As a part of this goal, TPWD is to educate landowners on the economic benefits of conservation as well as promote watershed and range management practices that improve ground and surface water quality and quantity.

The 2005 Land and Water Resources Conservation and Recreation Plan list native prairies and grassland habitats as High Priority Habitats across the state.

OBJECTIVES

There will be 2 major objectives to the research; 1) improve Best Management Practices for establishing and maintaining native grass stands, and 2) provide economics on different types of establishment and management cost, as well as production values, so that producers can determine the advantages or disadvantages of native grasses compared to introduced 'improved' grasses.

Listed are a few of the areas of concern that need to be researched:

- The need for multiple herbicide applications on species such as Bermuda grass and Bahia and when best to apply.
- Organic content and soil friability of soil needed prior to planting and how this can be improved through use of cover crops, soil microbes, use of seed hay versus seed only.
- Planting times need to be researched to see if late fall plantings, winter plantings, or early spring plantings have different effects.
- Planting methods need to be researched more in depth, such as drilling seed into dead turf or broadcasting seed into a very well prepared disc soil followed by packing. Also using seed hay for planting compared with planting seed.
- Management of invasive grasses or problems with forbs taking control prior to native grass establishment. What is the best herbicide applications for control? Johnson grass is just one of the many grasses or forbs that pose problems.
- Various methods and research trials should be run across the state (to study effects of moisture and temperatures) as well as various soil types.
- How do we establish natives back into areas dominated by KR and other old world bluestems.
- Should we look more into higher proportions in seed mixes being early to mid succession species such as silver bluestem, wild rye, etc so that quick establishment may reduce problematic species from taking over. This method could allow the climax species to slowly establish.
- Most research should be conducted on rangelands where there is an issue with current grasses and forbs in the seed bank. Reestablishment of retired farmland with many years of weed management appears to not be as big of an issue for reestablishing native grasses.

EXPECTED MANAGEMENT IMPLICATIONS

Weather is obviously the most critical factor in determining the success or failure of establishing native grass stands. However, aside from weather there are many planting methods that have impacts on establishment success. This research would provide information to landowners on the various methods of native grass establishment and problems and solutions that they may encounter. Additionally, the economics of establishment and management of native grass will be a benefit to producers across the state.