**Last Update Progress Report: January 31, 2017**

The ‘replacement’ treatment was executed at five of the seven bioreactor sites. Four of these sites were sprayed with glyphosate twice, with the first application occurring in September/October and the second application occurring in October/early November. One site was sprayed with glyphosate only once, as the glyphosate effectively killed the existing vegetation with a single application.

The ‘augmentation’ treatment was executed at two of the seven bioreactor sites. The ‘augmentation’ treatment has changed slightly since the previous reporting period. We intended ‘augmentation’ to mean that a grass-selective herbicide was used as opposed to a glyphosate, a broad spectrum herbicide. What we discovered is that prairie plants typically senesce late in the fall while bromegrass and reed canary grass continue to actively grow. This lead to the conclusion that spraying glyphosate to control invasive cool season grasses in a prairie setting is a feasible option if the prairie plants have senesced. This is important to note as glyphosate provides more effective control of invasive grasses than does a grass-selective herbicide.

In light of this knowledge, we executed the following field operations at sites which had native prairie plants present. One augmentation site was sprayed with clethodim (a grass-selective herbicide) in mid-October since prairie plants had not yet senesced. The same site was sprayed with glyphosate in early November after prairie plants had senesced. The second augmentation site was sprayed once with glyphosate in mid-October after prairie plants had senesced.

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| **2016 Herbicide Spray Dates** | | | | | |
| **Plot ID** | **Location** | **1st Spray** | **Product** | **2nd Spray** | **Product** |
| har1 | Haren | 10/19/2016 | glyphosate | - | - |
| nie1 | Nielsen | 9/28/2016 | glyphosate | 10/19/2016 | glyphosate |
| van1 | Van Diest1 | 10/19/2016 | clethodim | 11/9/2016 | glyphosate |
| van2 | Van Diest2 | 9/9/2016 | glyphosate | 10/7/2016 | glyphosate |
| fis1 | Fisher | 10/19/2016 | glyphosate | 11/9/2016 | glyphosate |
| vos1 | Voss | 9/6/2016 | glyphosate | 10/19/2016 | glyphosate |
| jon1 | Jones | 10/19/2016 | glyphosate | - | - |

All seven bioreactors were planted on either the 6th or 9th of December. Sites were planted with a six-foot Truax no-till prairie drill. The same seed mix was planted at all sites.