TO: Governance Committee (GC)
FROM: Executive Director's Office (EDO)
SUBJECT: Grassland Management and the Migratory Bird Treaty Act
DATE: November 25, 2013

The Platte River Recovery Implementation Program (PRRIP) currently manages over 3,000 acres of wet meadow habitat along the Platte River between Lexington and Chapman, Nebraska. To date, the primary management objective for wet meadows has been maintenance of short vegetative structure on approximately one quarter of wet meadow acres during each spring and fall whooping crane migration period. The remainder of the area is managed to provide a range of grassland structure (height and density) for the benefit of other PRRIP species of concern. In addition to species considerations, PRRIP habitat guidelines indicate a preference for maintenance of diverse communities of native herbaceous vegetation in wet meadow areas.[1]

Management of wet meadow structure has been accomplished through livestock grazing, mechanical haying/mowing, and prescribed fire. Grazing and haying/mowing are implemented in cooperation with local agricultural producers via farm leases. Prescribed fire is implemented by a contractor that is selected annually through a competitive selection process. From an operational standpoint, the frequency and timing of these activities should largely be driven by grassland best management practices (BMPs) given that the desired vegetation stature is provided during the annual whooping crane migration windows. In the central Platte River valley, grassland best management practices employed by conservation owners typically include periodic late-spring (May – June) disturbance through mechanical cutting or prescribed fire to prevent the encroachment of exotic cool-season grass species and maintain plant community diversity.

Over the last century, a number of non-native cool-season species including smooth brome, Kentucky bluegrass, intermediate wheatgrass, and tall wheatgrass, have been introduced in this region. These species were introduced because they are adapted to and tolerant of the climatic, soil and site conditions in central Nebraska and are capable of producing high forage yields. However, these species can become aggressive in the absence of timely disturbance and can displace desirable native plant communities.[2] These species are adapted to cool temperatures and grow rapidly early in the spring, whereas native warm-season grasses begin growth later in the spring and or early summer. With aggressive growth starting earlier in the spring, introduced cool-season grasses have the ability to out-compete native cool and warm-season grasses by utilizing soil moisture before the native plants have started growth.

Mid to late spring burning and/or mechanical removal has been shown to reduce cool-season grass dominance while promoting native grass production.[3] Cool-season grasses begin growing in March and April with peak growth in mid-May. Introducing disturbance (fire or mechanical removal) during this period can suppress growth, reduce or eliminate seed production, and halt competition with warm season grasses as they begin to grow in mid-May and early June and peak growth in mid-July. As such, most conservation organizations managing native grasslands in the central Platte River valley periodically burn or hay during the late spring period in order to suppress exotic cool-season grasses and encourage the growth of native warm-season species.
The United States Fish and Wildlife Service (USFWS), through the land management plan development process, has indicated that they will not support any burning, cutting or mechanical removal of vegetation

[1] PRRIP Land Plan Table 1 Guidelines.
[2] Masters, R.A. and R. L. Sheley. 2001. Invited Synthesis Paper: Principles and practices for managing rangeland invasive plants. J. Range Manage 54:502-517
[3] Rice, P.M. 2005. Fire as a Tool for Controlling Nonnative Invasive Plants. Bozeman, MT: Montana State University Center for Invasive Plant Management.

on PRRIP lands between April 15 and July 15 due to the Migratory Bird Treaty Act (MBTA). As a result, the PRRIP currently implements prescribed fire prior to April 15th and haying/mowing is deferred until July 15th. The Executive Director's office (EDO) is becoming concerned that always timing grassland disturbance to avoid the MBTA window may result in species composition in PRRIP grasslands shifting from native warm-season to exotic cool-season dominated grasslands. Or, in the case of grasslands already dominated by cool-season exotics, make it more difficult to shift those communities back towards native vegetation.

The limited implementation of prescribed fire or haying during the MBTA period would likely have value in preventing or reversing grassland degradation. This disturbance would not need to occur on an annual basis and would be implemented in combination with moderate stocking rates and/or rest. Patch burning is an example of this type of management approach.[4,5] The objective of patch burning is to manipulate livestock grazing behavior through small burn patches rotated within a grassland over several years. The result is a grassland with a shifting mosaic of habitat types varying from tall, dense vegetation to short, sparse vegetation creating a heterogeneous landscape that provides the structure and composition benefitting a range of bird species.[6]

Given the concerns about cool-season exotic grass encroachment due to management restrictions, the EDO wishes to make it clear to the Governance Committee that the EDO (and other interested stakeholders) will be entering into a dialogue with the USFWS regarding grassland management during the MBTA period. The primary objective of this dialogue would be an exploration of potential management scenarios that would both improve grassland quality and provide high-quality nesting habitat for migratory bird species.

[4] Fuhlendorf, S. D. and D. M. Engle. 2001. Restoring heterogeneity on rangelands: Ecosystem management based on evolutionary grazing patterns. BioScience 51:625–632.
[5] Fuhlendorf, S. D. and D. M. Engle. 2004. Application of the fire-grazing interaction to restore a shifting mosaic on tallgrass prairie. Journal of Applied Ecology 41:604–614.
[6] Fuhlendorf, S. D., W. C. Harrell, D. M. Engle, R. G. Hamilton, C. A. Davis, and D. M. Leslie, Jr. 2006. Should heterogeneity be the basis for conservation? Grassland bird response to fire and grazing. Ecological Applications 16:1706–1716.