TO: PRRIP TECHNICAL ADVISORY COMMITTEE
FROM: PRRIP EXECUTIVE DIRECTOR'S OFFICE
SUBJECT: 2022 PHRAGMITES PILOT STUDY
DATE: 31 MARCH 2022

I. BACKGROUND

Management of non-native *Phragmites australis* (common reed; hereafter *Phragmites*) within the Associated Habitat Reach (AHR) of the Platte River primarily includes annual herbicide treatments and, in recent years, channel inundation flows. To date, the effectiveness of these control measures has not been quantified. The PRRIP Extension Science Plan identifies management of *Phragmites* as a key area of uncertainty needing further investigation.

Extension Big Question #2 is, *How effective is Program management of Phragmites for maintaining suitable whooping crane roosting habitat?*

Sub-questions:

- How effective have previous Program control efforts (flow, spraying, etc.) been?
- How much do growing season flows influence *Phragmites* expansion/control?

II. PHRAGMITES STUDY

To address this big question and sub-questions, the Executive Director's Office (EDO) will develop a multipronged study to examine the mechanisms driving *Phragmites* establishment, distribution, expansion/contraction, and persistence within the AHR, as well as its response to management (channel inundation flows with and without herbicide). This study will include an intensive field monitoring component to investigate *Phragmites* dynamics over multiple years, starting with a pilot effort in 2022. Herbicide treatments will need to be excluded from designated control sites for the duration of the study to help isolate and understand non-herbicide variables influencing *Phragmites*.

The EDO is requesting guidance from the TAC to select three Program properties where ≤0.5 mile herbicide exclusion areas will be established for study.

Phragmites response to multiple variables, including June channel inundation flows, will be closely monitored both within and outside of herbicide exclusion areas to examine responses to individual and combined management strategies. To capture a gradient of hydrologic and geomorphic conditions as well as differences in timing and frequency of herbicide application above and below the Kearney Canal, one study reach will be established within an upriver property (above the Kearney Canal), a second study reach will be established within a midriver property (just below the Kearney Canal), and a third study reach will be established within a downriver property (well below the Kearney Canal). Herbicide treatments will be excluded from designated "NO spray zones" within the three study reaches (not entire properties) for an estimated three to six years.

Table 1 lists suitable PRRIP properties where the EDO proposes establishing herbicide exclusion areas. Exact site boundaries will be determined based on field reconnaissance in 2022. We propose selecting one property within each upriver, midriver, and downriver segment (Figures 1-4).

Table 1. Proposed complexes for *Phragmites* herbicide exclusion areas ("NO spray zones").

	Upriver	**Midriver**	**Downriver**
First priority	Plum Creek Complex	Fort Kearney Complex	Chapman Complex
Second priority	Cottonwood Ranch Complex	Pawnee Complex	N/A

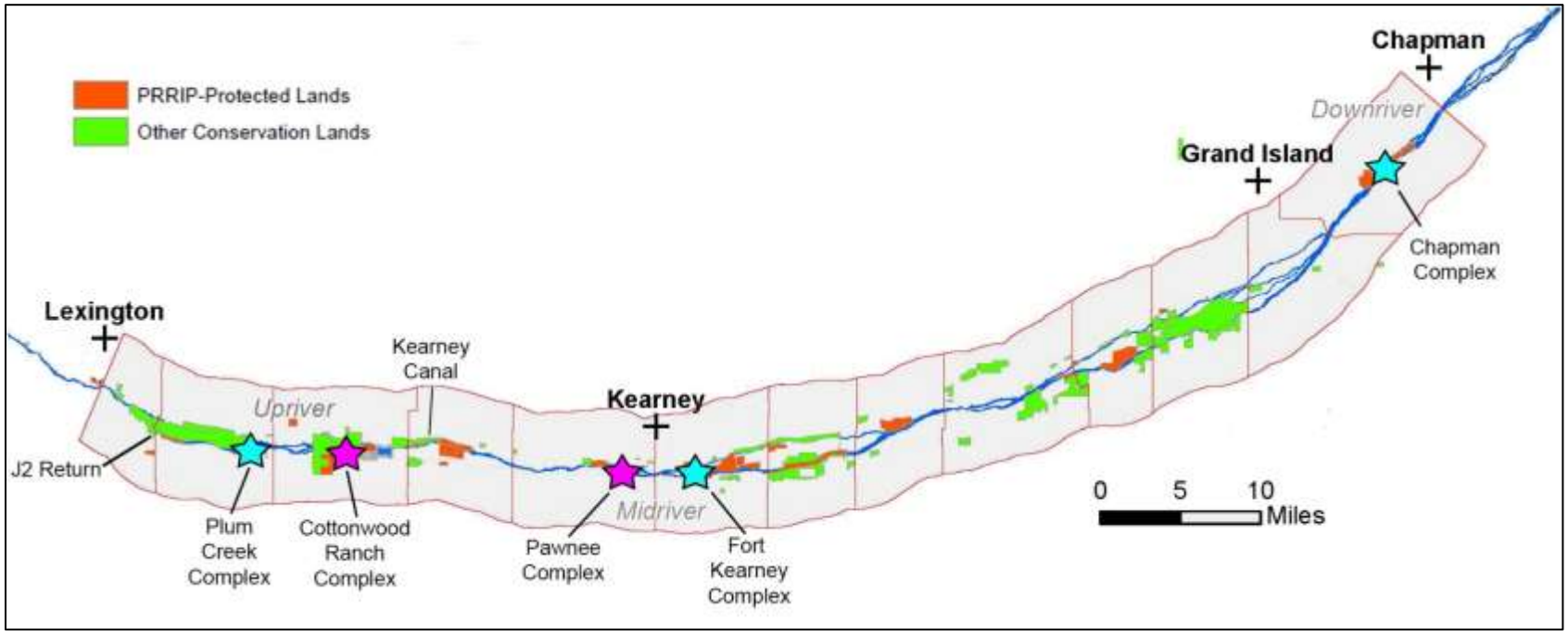

Figure 1. Overview of PRRIP-protected lands (red) and other conservation lands (green) within the Associated Habitat Reach (AHR) of the Platte River. Proposed properties for *Phragmites* herbicide exclusion areas ("NO spray zones") are marked with blue stars (first priority) and pink stars (second priority). We propose establishing one herbicide exclusion area in each upriver, midriver, and downriver segment, for a total of three herbicide exclusion areas across the AHR.

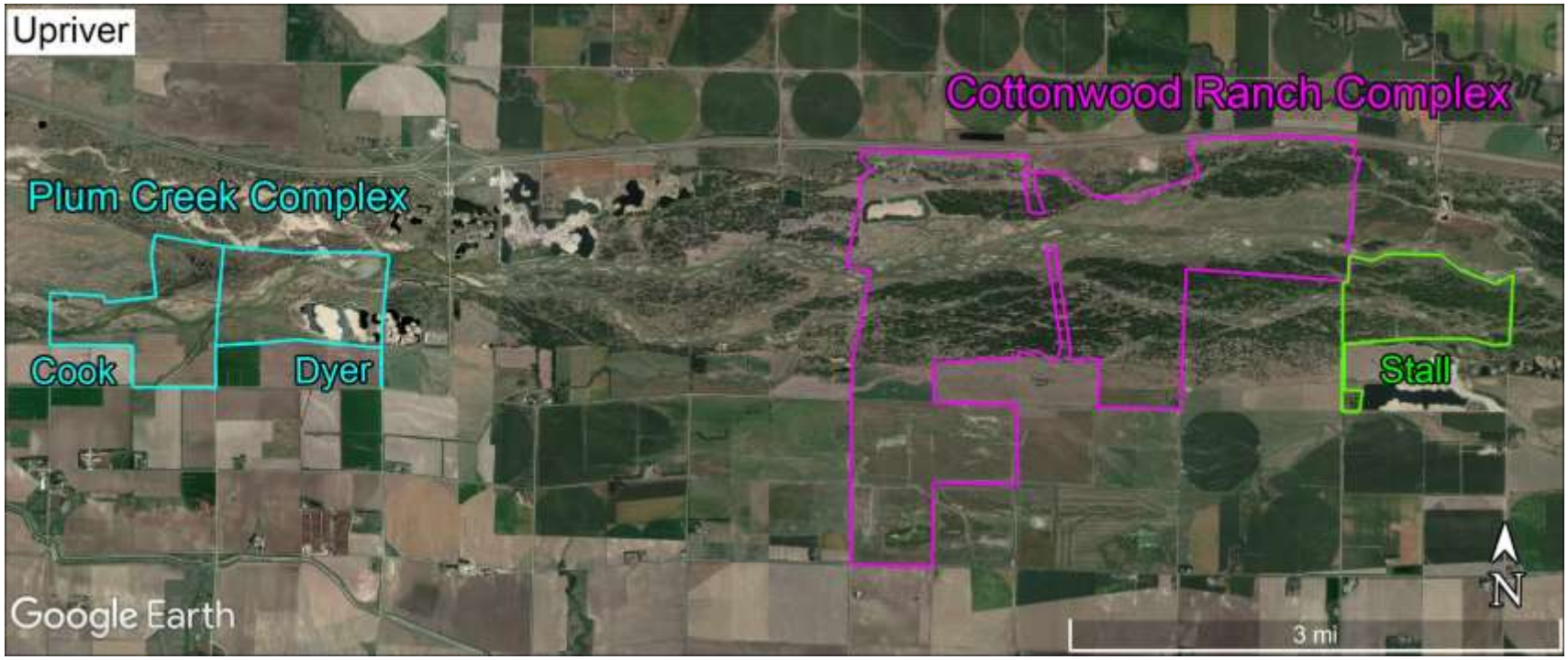

Figure 2. Upriver properties proposed as potential "NO herbicide zones". These properties are located downstream of the J2 Return and upstream of the Kearney Canal. First priority: Plum Creek Complex (blue outline); Second priority: Cottonwood Ranch Complex (pink outline) and Stall property (green outline). We propose establishing a no-herbicide zone within one of these upriver property complexes.

Figure 3. Midriver properties proposed as potential "NO herbicide zones". These properties are located just downstream of the Kearney Canal. First priority: Wyoming Tract within the Fort Kearney Complex (blue outline); Second priority: Pawnee Complex (pink outline). We propose establishing a no-herbicide zone within one of these midriver property complexes.

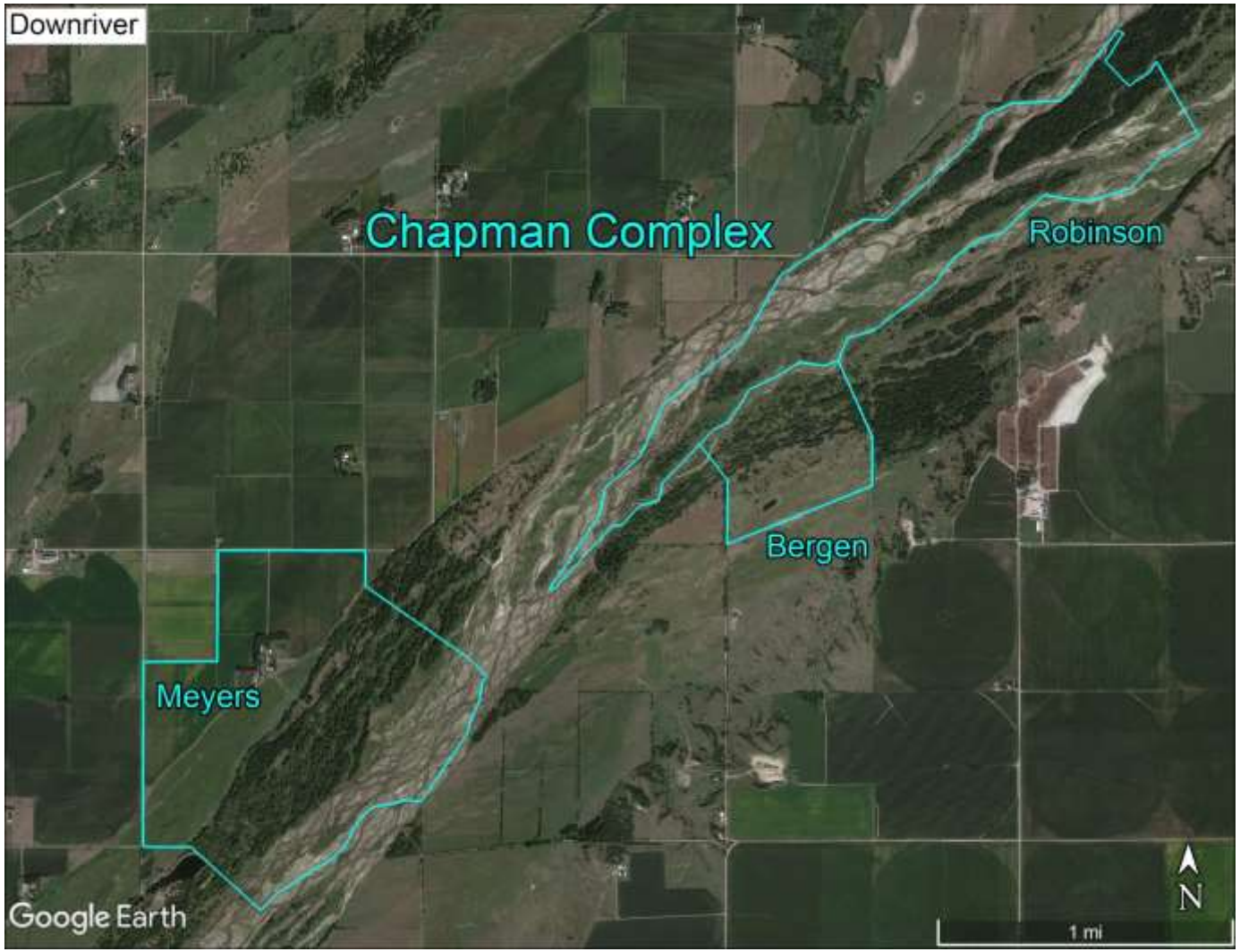

Figure 4. The Chapman Complex (blue outline) is the downriver property proposed for a potential "NO herbicide zone". This complex is located near the downstream end of the Associated Habitat Reach. We propose establishing one no-herbicide zone within the Chapman Complex.