

Macro-invertebrate and Avian Species Survey

Biological Summary Report

Baca NWR, San Luis Valley NWR Complex

July 16th and 22nd, 2015

Prepared by: Dean Lee

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Crew Member(s): Scott Miller, Dean Lee, Hilary Syvertson (SCA Intern), Chloe Traylor (SCA Intern), Adam Braddock (Pathways Student)

Other Assistant(s): Baca SCA Interns

Purpose:

This was a survey effort to determine species diversity and density of macro-invertebrates and avian species inhabiting playa systems located in SW regions of Baca NWR. These playa systems have been dry for some time now but showed evidence of once great bio diversity, hinting that when these playas become wet from seasonal moisture, either from precipitation or via irrigation, they can support a wide range of plants and animals that may not be found in other regions of the refuge. This year there was an extra ordinary high run off from the various creeks that feed into the Baca NWR. This run off was able to extend deep into the western portions of the refuge and filled these playa systems. Wanting to take advantage of these wet conditions, efforts were put forth to survey these areas. Our efforts primarily focused on macro-invertebrates and waterbirds found on or near the playa systems; however we recorded all avian species that were observed.

Methods:

There was 13 playas pre-selected for sampling, (figure 1), however, many of the pre-selected sample sites were directly connected to each other. Due to the close proximity to

each other, Playa # 7 and # 8 were combined, and Playa # 9 and # 10 were combined, with only one sample taken at each combined site.

For the portion of the macro-invertebrate survey, D-shaped dip nets were used to skim the top surface of mud in flooded playa basins. Once adequate area was covered, the mud was seined through the dip net and the contents were placed in to mason jars filled with 70% iso-alcohol and labeled with the date and sample site. GPS coordinates were taken at the shoreline at each sample site.

For the avian survey, a point count method was used. Observers approached playas as quietly and concealed as possible. They then would observe, identify and count numbers of all avian species possible. A recorder would stay hidden, and record all data as observers would call out species and number of individuals. Species density numbers were recorded for manageable groups, but estimates had to be recorded for large groups.

Sample Site Locations/Descriptions: (UTM 13 S) (Figure 1)

Ply #1 – 0428288 4191255; Ply #2 – 0427546 4190763; Ply #3 – 0427554 4190639; Ply #4 – 0427496 4189776; Ply #5 - 0427675 4189286; Ply #6 – 0428339 4189592; Ply #7/8 – 0426063 4195245; Ply #9/10 – 0426199 4195277; Ply #11 – 0426724 4195525; Ply #12 – 0427092 4195963; Ply #13 – 04296827 4196827

Results:

The macro-invertebrate samples will be identified at a later time, but a variety of species were observed during sampling including a large amount of tadpole shrimp.

The avian species list is as follows:

July 16th

Ply #1 - (1) Avocet

Ply #2 - (3) Avocets, (1) Eared Grebe, (1) sparrow, (10) RWBB, (7) Teal, (2) Gadwalls, (6) Coots, (10) Redheads, (16) Rudy ducks.

Ply #3 - (150-200) Mixed ducks - Mallard, Redhead, Rudy, Gadwalls, Teal, Coots, (2) Avocets, (~12-15) Eared Grebes- 7 nests on floating mats of bulrush.

Ply #4 - (60-75) Mixed ducks, (3) Avocets, (1) Yellowlegs, (18) Wilson's Phalarope.

Ply #5 (Bulrush) - (3) White-faced Ibis, (1) Common Snipe, (1) Mallard, (1) YHBB, (1) Pied billed Grebe, (1) Coot.

Ply #6 - (2) Redheads, (1) Mallard, (1) Gadwall.

July 22nd

Ply #7-8 - (300+) Mixed ducks - Mallard, Pintail, Teal, Green-winged Teal, Coots (nest with one pipping egg), Rudy duck, Gadwall, (12-15) Least Sandpipers, (1) of ea. - Killdeer, Avocet, Pied billed Grebe, Eared Grebe, Brewer's sparrow (nest in a greasewood bush near the playas), and *** possible Bull frog (vocalization).

Ply #9-10 - (10) Pintails, (2) Teal, (8) Rudy duck, (5) Coots, (1) Avocet.

Ply #11 - (1) Sora - on nest with 6 eggs, (1) Mallard, (1) Killdeer.

Ply #12 (Deep water) - (2) Black-crowned Night Herons.

Ply #13 - (Deadman Crk/ditch) - Potential Northern Leopard frog habitat, (10) Teal, (1) Gadwall, (1) Sora.

Discussion:

From the beginning, it was theorized that a large number of shorebirds would be observed using these playa systems. Surprisingly, it was found that there was a relatively low number of shorebirds and relatively high number of waterfowl encountered. It was also interesting to find so many bird nests (10 nests) located on or near these playa systems.

A large abundance of tadpole shrimp was found during sampling and even though the rest of the macro-invertebrate species samples have not been identified yet, the samples did show abundant amounts of macro-invertebrates in these playa systems, leading to believe that these systems are productive, and provide abundant food sources for all of the avian species found.

During surveys, an extremely large amount of toads (Woodhouse's Toad, Great Plains Toad, Plains Spadefoot) and frogs (Western Chorus Frog) were found throughout the playa systems and surrounding area. Also, there was a possible Bullfrog vocalization heard in Ply #7 and 8. Ply #13 showed potential for Northern Leopard Frog habitat. It is recommended that follow-up surveys, or at least site visits, be done.

Overall observations lead us to believe that these playa systems are very productive and can be as valuable, if not more valuable, as wet meadows are. It is recommended that emphasis should be placed, in the annual water management plan, on wetting as much of the playa system as possible, while still meeting the "irrigation" requirements of the refuge's purpose.

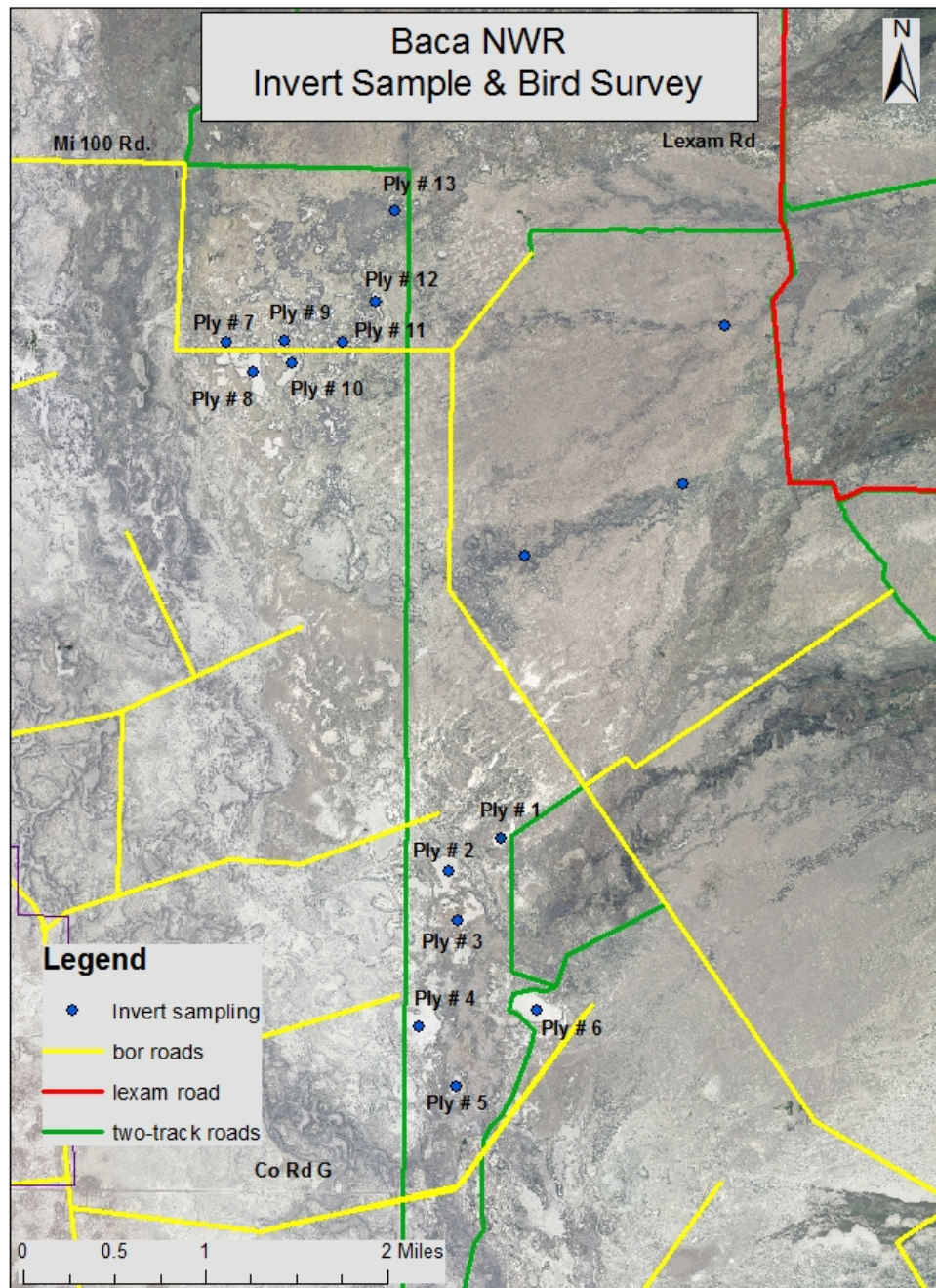


Figure 1: Macro-invertebrate and Avian species survey sites on Baca NWR July 2015