Rapid Assessment
For New Mexico Meadow Jumping Mouse Proposed Critical Habitat

Introduction

The objective of the assessment is to make a preliminary determination if the Primary Constituent Elements (PCEs) of critical habitat (CH) for the New Mexico meadow jumping mouse currently exist in areas proposed as CH by the U.S. Fish & Wildlife Service (USFWS). According to the U.S. Fish and Wildlife Service Draft Species Status Assessment Report New Mexico meadow jumping mouse (*Zapus hudsonius luteus*) "The jumping mouse has exceptionally specialized habitat requirements to support life history needs and maintain adequate population sizes. Habitat requirements are characterized by tall (averaging at least 61 cm (24 in)), dense riparian herbaceous vegetation primarily composed of sedges and forbs. This suitable habitat is only found when wetland vegetation achieves full growth potential associated with perennial flowing water" (USFWS 2013).

This assessment is designed to be a onetime rapid effort, during the growing season of 2015, to identify the presence or absence of PCEs along stream reaches within proposed CH. It is not designed to be, nor should it be used as monitoring or a proxy/surrogate for presence of the jumping mouse. In addition to this field assessment, the Southwestern Region Riparian Mapping project data, remote sensing data, and archived satellite and aerial imagery also may be used to provide information to rank and stratify the proposed CH with PCEs' for future monitoring and management efforts. This rapid assessment was developed collaboratively between the U.S. Fish and Wildlife Service, USDA Forest Service-Southwestern Region, New Mexico State University, New Mexico State University-Range Improvement Task Force and the University of Arizona Cooperative Extension.

Proposed CH is defined as the area within 100 meters of the bankfull stage on either side of the designated reach. Although proposed CH is described as the area within 100 meters of the bankfull stage on either side of the designated reach, the greenline will be used as the primary indicator for sampling placement in this assessment. The greenline is the first perennial vegetation that forms a lineal grouping of community types on or near the water's edge. Most often it occurs at or slightly below the bankfull stage (Winward 2000.)

The assessment will characterize currently proposed CH commencing in July 2015. All proposed CH polygons will be assessed. Not all the area within the proposed CH is necessarily capable of developing and maintaining the PCEs. The PCEs on which this assessment is focused include:

1. The presence of water;
2. Saturated soils; and
3. Tall dense herbaceous riparian vegetation.

The assessment is designed to be rapid as a team walks adjacent to the stream. A team of three people is optimum to accommodate collecting the data and recording the data on the field tablet. Specific data collection methods are further described below. Briefly, continuous transects parallel to the stream are paced utilizing a calibrated pace along the entire length of the proposed CH polygon. At an interval of

approximately 100 meters along the stream course, several PCEs are assessed 0.5 meters from the greenline on one side of the stream. When perennial vegetation is in the channel, continually from bank to bank use the water's edge to determine placement of the Robel pole 0.5 meter from the edge. A photo protocol is included, and data from the assessment will be referenced geospatially with the use of GPS. Data will be entered into a field data recording device which accommodates the Vegetation GIS Data System Version 4 software.

Data Collection Process for Each Component

Calibrate sampler's pace to 100 meters as PCEs are evaluated every 100 meters. Randomly select side of stream to be assessed. Start observations of items in number 1 as the primary sampler paces the first 100 meters. Data collection and recording on the transect starts at 100 meters from access point in stream. The primary sampler is the sampler who is following the greenline. The primary sampler paces the transect in the stream.

1) Between beginning of transect and data collection points, record important observations such as the presence of PCEs, beaver dams, roads, etc. A list of items is included: PCEs Present, Beaver Dam, Fence Crossing, Road, Trail, Seep, Tributary, Woody Debris, and Rock Outcrop. Other items can be added.

2) a) Record GPS location at each 100 meter data collection point. The appropriate Datum is WGS 83. The Projection in Arizona is Zone 12. The Projection in New Mexico is Zone 13. Collect in Decimal Degrees.

b) To help visually characterize the site, four photos are taken perpendicular from each data collection point. In this order, take one photo each: 1) across the stream; 2) downstream; 3) upland, and 4) upstream. Upland photos refer to the upland on the side of the stream being sampled. Photos should maximize the appearance of the landscape, not necessarily the greenline (focus at a point approximately 40 meters from the point). Log and correlate each photo number with the direction descriptor and site GPS location (geo-referenced photos are preferred). File the photos according to the site identification and date and provide to the Regional Office. The Regional Office will catalog the photos.

3) Assessing the presence of PCEs

Sampling side of stream:

a) Is water present? **Yes or No**

b) Does soil appear to be saturated at the pole(i.e., would your socks become wet if you stood in it without shoes, if you kneel down are the knees of your pants wet)? **Yes or No**

c) Is riparian vegetation (such as wetland or facultative wet species) present? **Yes or No**

Across the stream, qualitatively assess:

d) Does water appear to be present? **Yes or No**

e) Does soil appear to be saturated? **Yes or No**

f) Does riparian vegetation appear to be present? **Yes or No**

If any of the 3 PCEs are present, sample the remaining elements. If none of the PCEs are present, move to the next sampling point.

4) Take six cover obstruction observations to assess cover height and denseness. For this step, two Robel poles are attached by a string 157 inches (4 meters) long at 39 inches high (1 meter). This ensures that the observation of the pole is always viewed from a height of 39 inches. This standardized viewing height provides repeatability among observers.

a) The first two observations are made at the 100 meter mark (data collection point). Place one of the Robel poles at the paced mark, 0.5 meters in from the greenline. For recording the data, this is referred to as "against" the stream. Place the second Robel pole 4 meters on a line perpendicular to the estimated tangent of the stream curvature at that point. The primary sampler in the stream determines and instructs the secondary sampler the location to place the second Robel pole based on the curvature of the stream. For recording the data, the reading for the second Robel pole is referred to as "away" from the stream. Record the dominant functional group of vegetation or other cover feature providing primary obstruction to the Robel pole in each direction. The functional groups are 1) sedge, 2) rush, 3) grass, 4) forb, 5) riparian woody, 6) upland woody, 7) woody debris, 8) rock, 9) bank and 10) other.
b) Record an obstruction reading for each Robel pole from the other with the eye at the 39-inch (1 meter) mark on the pole. First, record the Robel pole farthest from the stream, viewing from the pole against the stream (referred to on the data form as "against" the stream). Record **the lowest 1- inch band on the Robel pole that is completely unobstructed even if higher bands are completely obstructed.** Repeat the process viewing from the pole farthest from the stream (referred to on the data form as "away" from the stream), looking back toward the pole closest to the stream. Consistently read the poles on the same edge of the pole using the same eye each time.
c) Pace utilizing a calibrated pace to move approximately 4 meters further along the paced transect to the "104" meter point. Repeat the paired observations at the "104" meter mark; and again at the "108" meter mark (see Figure 1.). When pacing to the "104" and "108" meter mark, avoid walking through the vegetation within the plot. The person on the greenline can walk through the water while the person in the uplands can skirt wide.

5) Are sedges present within the approximately 4 X 8 meter plot demarked by the six Robel pole placements and/or within the area between the plot and the thalweg (i.e., deepest part of the stream) of the stream (see Figure 2.). **Yes or No.** Depending upon the curvature of the stream, the plot size will vary some. When completed, pace the 100 meters to the next point. It is recognized that this process adds the distance of 8 meters to each point.

6) Stream reach observation notes. Document any observations unique to a reach at the completion of sampling. Enter these notes in the “notes” section of the data form for the reach.

Figures

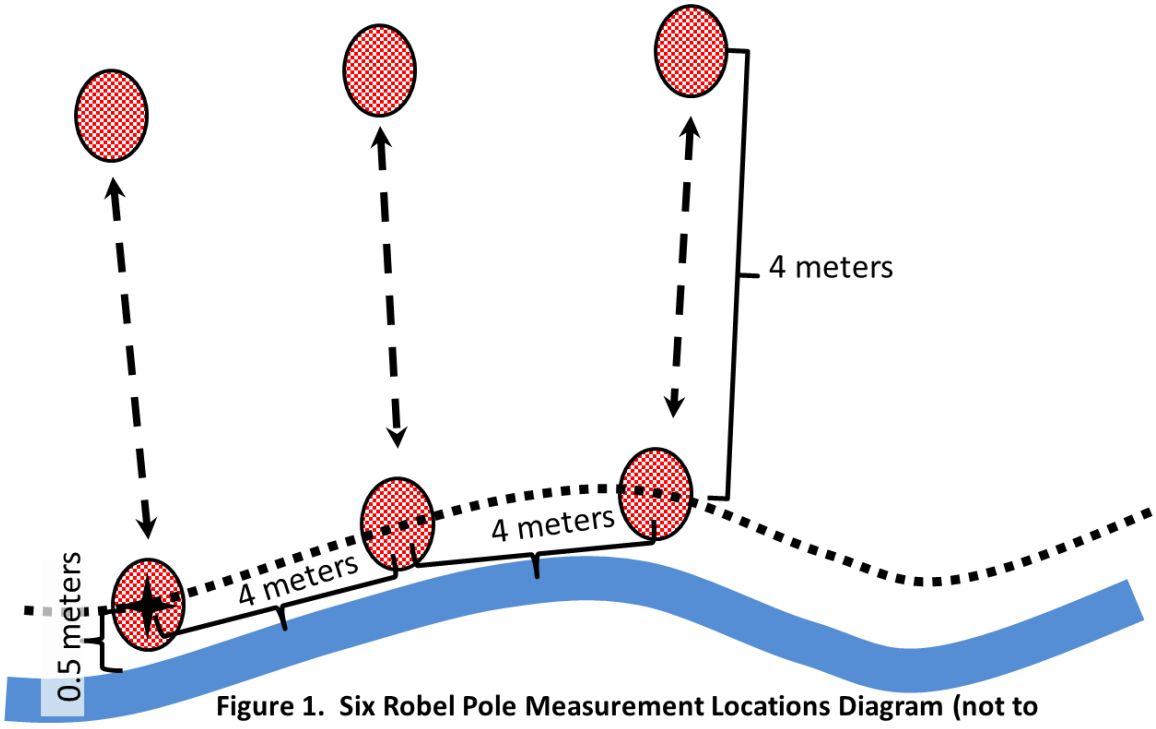


Figure 1. Six Robel Pole Measurement Locations Diagram (not to scale). Red and white checkerboard = Robel pole location. Star = data collection point (every 100 meters).

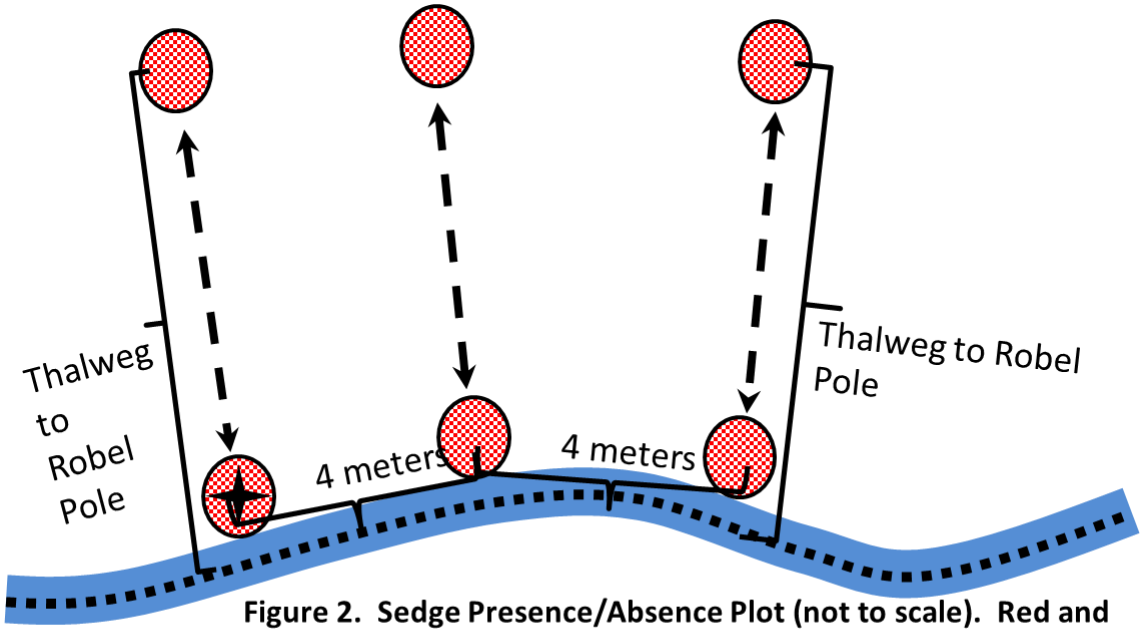
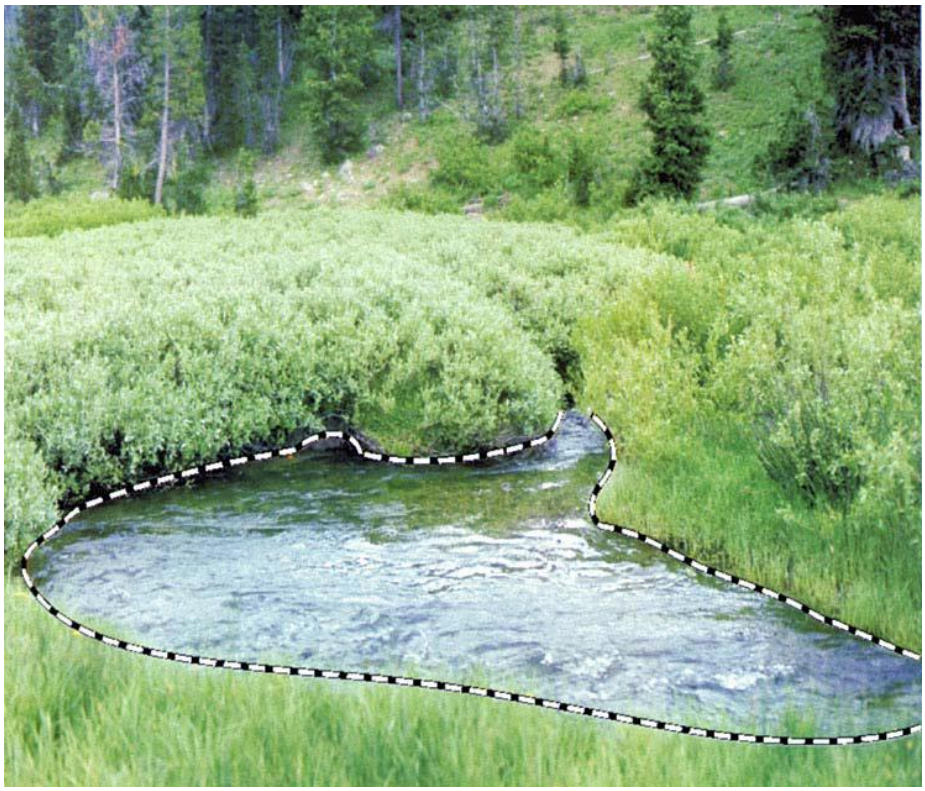


Figure 2. Sedge Presence/Absence Plot (not to scale). Red and white checkerboard = Robel pole location. Star = data collection point (every 100 meters).

The following are a few examples of greenline situations which may be encountered while conducting the assessment. These photos are from *Monitoring the Vegetation Resources in Riparian Areas*. Winward 2000.



Location of the greenline at or near the bank-full stage. Winward 2000

Location of the greenline after summer water flows have decreased. Winward 2000

Location of the greenline on an eroded bank. Following the definition of greenline, "the first line of perennial vegetation that forms a lineal grouping of community types on or near the waters edge," the plants on the top of the eroded non-riparian portion of the streambank serves as the current greenline. Winward 2000

Materials List

100 meter tape to calibrate pace
Robel Poles configured for assessment (2 sets provided by Regional Office)
Digital Camera-preferably with geo referencing capability
Field Laptop with VGS 4.0 application loaded with NMMJM Habitat Assessment Protocol
GPS
Field Gear- water, sunscreen, hat, food, radio, waders or water shoes for at least one person.

References

Moody, Tom, PE, Mark Wirtanen, Stephanie N. Yard, PE. 2003. Regional Relationships for Bankfull Stage in Natural Channels of the Arid Southwest.

Robel, R.J., J.N. Briggs, A.D. Dayton, and L.C. Hulbert. 1970. Relationships between visual obstruction measurements and weight of grassland vegetation. Journal of Range Management. 23:295-297.

U.S. Fish and Wildlife Service. 2013. Draft Species Status Assessment Report New Mexico meadow jumping mouse (*Zapus hudsonius luteus*).

Winward. 2000. Monitoring the Vegetation Resources in Riparian Areas. USDA Forest Service Gen. Tech. Rep. RMRS-GTR-47.

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