

**RECOMMENDED TRANSLOCATION PROCEDURES
FOR UTAH PRAIRIE DOG**

September 2009

TABLE OF CONTENTS

INTRODUCTION.....	3
1. SITE SELECTION AND PREPARATION.....	4
2. TRANSLOCATION SITE PREPARATION.....	5
3. TRAPPING.....	6
4. HANDLING.....	7
5. TRANSPORT.....	8
6. RELEASING.....	8
7. MONITORING AND MANAGEMENT:.....	9
LITERATURE CITED.....	12
LIST OF APPENDICES.....	13

INTRODUCTION

Utah prairie dogs were listed as endangered under the Endangered Species Act in 1973 due to plague, drought, pest control programs, and human-related habitat alterations. Following significant population increases on private lands, the species was down-listed to threatened in 1984.

The U.S. Fish and Wildlife Service signed a recovery plan for Utah prairie dogs in 1991. The Interagency Recovery Implementation Team (RIT) oversees implementation of recovery actions. In 1997 the Interim Conservation Strategy (ICS) was written to direct research to update the 1991 Recovery Plan. That revision is now underway and will incorporate ongoing research that was directed by the ICS. Translocation of Utah prairie dogs was identified as a recovery action in both the Recovery plan and the ICS.

Translocation of Utah prairie dogs has been ongoing since 1972. With low initial survival success, research was initiated on methods to improve translocation survival success. Research has found that supplemental food and water may increase survival because increased energy expenditures are incurred from trapping, transport, new environment stimuli, burrowing, and increased vigilance (Truett et al. 2001). In addition, use of retention cages to keep the newly translocated dogs inside the intended areas and keep predators out may be useful (Truett and Savage 1998). Translocated dogs prefer established burrows over augered burrows (Player and Urness 1982, Jacquart 1986, Truett and Savage 1998). Early translocation of males to sites without established burrow systems may aid in establishing burrows for subsequent female and juvenile releases in late summer (Jacquart 1986).

The incorporation of the aforementioned methods to initial translocation protocol has improved translocation success since early 1970s efforts. For purposes of translocation recovery actions, subject to change with research information, these guidelines focus on refinement and emphasis of various aspects of the protocols to increase translocation success rates. In addition, these guidelines will provide consistency across recovery areas and land management agencies. Deviation from these guidelines will be considered by the FWS as necessary or when new data suggest that changes are necessary.

NOTE: *Utah prairie dogs are a listed species under the Endangered Species Act. Trapping of Utah prairie dogs must be carried out under a valid U.S. Fish and Wildlife Service permit which must be in the possession of the personnel carrying out trapping activities. Additional permits are also required by the State of Utah and/or the land management agency.*

1. SITE SELECTION AND PREPARATION

Location of Site

Translocation sites must be located on public land or on other land protected under an agreement with the Service. The selection of translocation sites should be carefully considered. New sites should be located close enough to existing colonies to allow for genetic mixing and recolonization yet far enough to limit risk of exposure to plague. Historic areas can also be considered for re-colonization. “Vacant” colonies may be used the next season if the burrows and the translocated dogs are dusted prior to translocation¹. Desired site size is at least 200 acres, but all sites will be considered on a case-by-case basis. Adjacent land uses should be considered when selecting translocation sites.

Supplementation of active colonies may also be considered if the receiving colony has a documented significant decrease in the spring count. Supplementation of active colonies will be considered only under defensible biological principles that support conservation and recovery of the species. This action will be undertaken on a case by case basis in consultation with the Service. Supplementation of active colonies may require additional treatments to address declines such as dusting or vegetation treatments.

Site Characteristics

Translocation sites should be selected which meet the criteria for the following characteristics.

Vegetation

The vegetation objectives represent best current knowledge of ideal parameters. Individual locations may vary from these parameters; however, each deviation from the vegetation objectives should be noted and explained. For example, *shrub ground cover at site xyz equals 10%. Of this 10%, 8% are subshrubs (generally <6” in height), and only 2% is big sagebrush. Other vegetation objectives are met at site xyz. Since the amount of subshrubs is not expected to interfere with Utah prairie dog visibility or compete with the herbaceous understory, site xyz is recommended as a translocation site.*

Refer to Appendix 1 for definitions and examples of the vegetation parameters. Habitat manipulation may be required at sites not meeting the vegetation objectives.

Warm season grasses: 1 - 20% ground cover

Cool season grasses: 12 - 40% ground cover

Forbs: 1 – 10% ground cover (perennial, non noxious)

Shrubs: 0 – 8% ground cover and <10% canopy cover

¹ Whether a colony is vacant will be determined on a case by case situation in consultation with the Service depending on the size, density and acreage of the colony in question.

Minimum number of plant species: 10

Soils

Generally, Utah prairie dogs require loamy soil textures that are not prone to flooding. Soils must be deep, well drained and must not easily cave in or have too much sand. Prairie dogs must be able to inhabit burrows approximately three feet deep without reaching groundwater. Although caliche does not seem to be limiting, bedrock uninhabitable by Utah prairie dogs. Utah prairie dogs are generally found on flat to moderate slopes. Efforts should be made to select sites that demonstrate these characteristics.

Old colonies

Historical habitat, especially if there is still evidence of old mounds, should be considered a priority for reestablishment through translocations.

Elevation

Elevation does not appear to be a limiting factor in translocations. Utah prairie dogs currently occupy habitat from approximately 5,100 to 10,000 feet in elevation. Historically, they occupied habitat from 5,100 to 11,300 feet in elevation. Translocation of UPDs from significantly different elevations will be considered on a case by case basis and will be monitored closely to verify efficacy of such actions.

2. TRANSLOCATION SITE PREPARATION

Site Preparation Treatments

If identified translocation sites do not meet vegetation recommendations established in this document, they can be treated with various methods prior to use. Any treatments used should be completed early enough to allow for plant establishment prior to the translocation of animals. Treatments including but not limited to, prescribed burns, mechanical shrub removal, pesticides, seeding and fencing can be used as necessary. Prior to the release of animals, the site should be assessed to assure suitability for translocation.

Burrow Preparations

All sites will be assessed for burrow preparation needs and the necessary treatments used. Three types of artificial burrows are available for use (plastic tubing, plastic tubing with nest box and augured holes), either separately or in conjunction with each other. Artificial burrow systems will be constructed at new translocation sites prior to release of animals. No preparation is needed at vacant colonies if the burrows remain open. If the burrows are not open or have collapsed, or if the burrows can not be reopened with a shovel, then the site will be treated as a

new release site. Release sites should have one burrow system available per 10 animals to be released.

Plastic tubing

Plastic tubing should be 4 inches in diameter and approximately 25 feet in length. The tubing should be corrugated, perforated, flexible ABS tubing. Each plastic tube will be placed in an arch shaped trench approximately 6 feet deep at its deepest point. Tubing should extend above the ground but not more than 4 inches. Approximately 5 inch long oval openings should be created at three points along the underside of the tube to allow the animal to expand the burrow. Predator deterrents should be installed on each end of the tubing. Suggested materials include fencing panels anchored to the tube and the ground with rebar (Appendix 2a).

Plastic tubing with nest box

Installation is essentially the same as above, except that a rectangular sprinkling system valve box (minimum size 12"x18"x12" (W x L x H) is placed at the middle bottom of the trench dug for the burrow tubing. The tubing is cut in half and one hole large enough to accommodate the tubing is cut in the middle of each long side of the valve box. One end of the tubing is inserted into each hole approximately 4 inches, cut in four places, folded back against the inside of the box and firmly affixed thereto. The exit holes manufactured in the short ends of the box and the bottom of the box are left open to allow prairie dogs to excavate their way out of the box. One 5 inch hole is cut into the bottom of the tubing on either side of the box (as described above). The lid is firmly affixed to the box before the excavated area is refilled and tamped down (Appendix 2b).

Augured holes

Augured holes encourage dispersal of released animals. Such holes may be constructed in conjunction with the double entranced burrows described above, or with vacant burrows. Paired augured holes will be drilled using a 4 inch diameter wide bit to a depth of approximately six feet at intersecting 45 degree angles.

Release Cages

Release cages will be placed at each artificial burrow entrance site prior to prairie dog releases. To discourage premature dispersal of animals, release cages should be placed at both ends of double entranced burrows. Cages should be at least 1.5 feet high x 2 feet wide x 3 feet long and fashioned out of a rebar frame with chicken wire sides and tops. Cages should be anchored to the ground and sealed around the bottom perimeter of the cage with soil (Appendix 2).

3. TRAPPING

The number of animals translocated to a site appears to influence the success of establishing a colony. Although no research has been conducted to support this theory, observations by field

personnel conducting translocations in Utah suggest that releases of large numbers of animals leads to higher retention rates at translocation sites. Therefore, efforts should be made to release a target of 400 animals at each site for three consecutive years at new translocation sites. Additional releases may be necessary to ensure success based on monitoring results. Numbers to be released at active colonies will be determined on a case by case basis in consultation with the Service.

When translocating prairie dogs, detailed records must be kept. Always document the colony where the trapping is occurring, the number of traps set and the number of animals trapped. The weight, age and general health of each animal should be recorded. Ear tags should be placed in all translocated animals (Attachment 3). The translocation site where the animal is released should also be documented as well as the release cage receiving the animal.

Setting Traps

Utah prairie dogs will be trapped using live traps baited with items such as peanut butter, rolled oats, and/or fruits and vegetables. The traps are placed around the entrance to their burrows with the opening of the traps facing the burrow entrance. Traps will be checked **at least** every hour to ensure that prairie dogs in traps are not exposed to undue stress (e.g. heat exhaustion or extended exposure to cold). Any and all exposure to extreme heat or cold should be avoided or lessened to every extent possible. If a prairie dog is in a trap, the trap will be placed in a protected location until the trapping day has ended and all trapped dogs are collected and processed. Prairie dogs in cages should be provided with fruit or vegetables to lessen the impacts of dehydration.

4. HANDLING

All prairie dogs must be handled in a manner that minimizes the stress experienced by the animals in order to increase the potential for successful translocation.

At Capture Site

Each prairie dog will be weighed to determine if they meet the weight requirement of 500 grams. If they do not, they must be released at the location of capture. All captured prairie dogs will be treated with an insecticide to kill fleas which serve as a vector in the spread of plague. When applying the flea powder, care should be taken to minimize any contact of powder with the eyes, nose, and mouth of the prairie dog.

At Release Site or Processing Site

All animals suitable for release will be ear tagged (Appendix 3), sexed, aged (Appendix 4), weighed and evaluated for general health conditions prior to release. Particular things to note include, but are not limited to:

- areas on prairie dogs with any distinguishing marks
- if the prairie dog appears to be sick or extremely stressed (i.e., diarrhea),
- if it is a lactating female

- any other pertinent data

If the prairie dog trapping ends early in the afternoon, the prairie dogs eligible for translocation will be transported to the release site the same day. If the trapping ends too late for release, the prairie dogs will be held in a quiet, covered building overnight, given water and food, and then transported to the release site the following morning.

5. TRANSPORT

Transport of prairie dogs should be carried out in a manner that minimizes stress to the animals. If possible, hand carry cages to and from the trap site to the truck and release site. Cages should be kept upright and not swung under any circumstances. If multiple cages must be carried, use of a backpack should be considered.

Transport of caged prairie dogs in vehicles should minimize exposure, jostling, close exposure to other caged prairie dogs (especially males), and stress. When transported, traps should be secured to provide separation of cages and to avoid jostling. Stacking of cages should be avoided. An open weave netting cover should be placed over the top of all cages to minimize sun exposure and keep the dogs as cool as possible. If necessary, the cover should be dampened to further cool the prairie dogs.

6. RELEASING

The release of prairie dogs should be done in a manner that minimizes stress to the animals. Prairie dogs will be placed into a release cage at each burrow location by opening one end of the trap and lifting the opposite end of the trap. Attempts will be made to place family groups into the same release cage.

All release cages will be supplied with supplemental food at least through the period of active translocation. Food items include but are not limited to alfalfa, alfalfa cubes, grains, fresh fruits and vegetables. Supplemental food must be certified weed free. Water will be provided at each release site at least throughout the active translocation.

New Sites

First year releases

Dispersing males create burrows as they move, developing a system of established burrows favorable for subsequent releases, especially for juveniles and females (Jacquart et al, 1986). Therefore, a target of 40 adult males will be translocated no earlier than April 1 and no later than 30 days prior to additional animals (male, female and juveniles) being released at the site. Additional animals will be translocated beginning July 1 through August 31 or the Friday of that week.² These animals will be released into the constructed burrow systems described in section 2.

²Juvenile and lactating females suffered an immediate high mortality (juveniles 100%; adult females 72%) when translocated before July, most likely due to loss of energy reserves (Jacquart et al. 1986).

Second and Third year releases

Evaluate previous year's efforts in April and determine if there is a need for additional artificial burrows. A minimum of 40 usable vacant burrows must be available to accommodate transplants. If an artificial burrow system from the previous year is unoccupied, it may be reused. If new or additional artificial burrow systems are necessary, they will be constructed within earshot of vocalizations from the artificial burrows constructed the first year. Spring release of adult males will be included for the second year. Additional animals will be translocated beginning July 1 through August 31 or the Friday of that week.

Evaluate the previous 2 years efforts in April to determine if there is a need for additional artificial burrows. Again, a minimum of 40 usable vacant burrows must be available to accommodate transplants. If an artificial burrow system from the two previous years is unoccupied, it may be reused. If new or additional artificial burrow systems are necessary, they will be constructed within earshot of vocalizations from the artificial burrows constructed in the previous two years. Third year releases of males should be considered if previous releases have not established an adequate burrow system. Additional animals will be translocated beginning July 1 through August 31 or the Friday of that week.

Existing Vacant Sites

First year releases

If the site has an established usable burrow system, artificial burrows are not required. Augering to access existing burrows may be necessary. Release cages as described above should be placed over an existing burrow system to minimize immediate dispersal from the area and encourage the use of the burrow system. Spring release of males at existing sites will be carried out as described for new translocation sites. Additional animals will be translocated beginning July 1 through August 31 or the Friday of that week.

Second and third year releases

Same as second and third year releases described for new translocation sites. Release cages as described above should be placed over an existing burrow system to minimize immediate dispersal from the area and encourage the use of the burrow system. Spring release of adult males and subsequent release of animals is the same as that for a new translocation site.

7. MONITORING AND MANAGEMENT

Translocation Site Management

Management of translocation sites will be coordinated between all affected agencies including FWS, BLM, FS, NPS and DWR to ensure that intent of the translocation site is not compromised

and the management needs of the land management agencies are met. Site management should occur in accordance with approved land use plans where applicable. In addition to stipulations identified in land use plans, the following stipulations should be applied to translocation sites:

- 1) Artificial burrow systems will be left in place indefinitely. If the end of the tube becomes exposed the land management agencies will be notified and it will be trimmed as necessary.
- 2) Maintenance of translocation sites associated with researchers should be coordinated between the land management agency and the researcher and addressed in the necessary permits issued by the State of Utah and the FWS.
- 3) Release cages may be left onsite over winter or removed for security reasons. All cages will be removed after translocations cease.
- 4) Translocation sites should be restored as necessary in coordination with the land use agencies.
- 5) Access to translocation sites should be coordinated with the land use agencies.

Predator Management

Predator control, primarily for badgers and coyotes, can occur in conjunction with translocation and up to three years after translocations have ceased as determined by the land management agency and DWR.

Disease Management

As needed, prairie dog colonies will be dusted with an insecticide to kill fleas and prevent the spread of sylvatic plague. Use of any insecticides must be approved by the appropriate land management agency.

Monitoring

Monitoring of translocation activities is imperative to understanding success rates and improving techniques. Monitoring should include the following:

Vegetation monitoring

The Step Point (see Appendix 5), or other appropriate method as determined by the RIT will be used for habitat monitoring to determine conformance with the vegetation objectives listed on page 2. Sampling should occur during a period representative of the peak production of the vegetation community, which is generally in June and July. A minimum of two, 200 point transects per 200 acres of mapped habitat should be established. Ideally, data would be collected during the three years of active translocations, and every three to five years thereafter. Land management agencies have the lead responsibility for vegetation monitoring on lands under their jurisdiction.

The vegetation objectives on page 2 can be used to evaluate conditions at existing sites and determine the need for habitat improvement projects. Other information to consider would be the vegetative trend (such as decreasing grass cover or increasing shrub cover), Utah prairie dog population trends, and precipitation patterns. Monitoring should be used to identify complexes where there is less than 200 acres of habitat meeting the vegetation objectives. Habitat manipulation should focus on improving vegetation parameters that do not meet the stated objectives. If the land managing agency determines that manipulation is not required, then the reasons should be documented, following the example on page 2.

Due to the burrowing activity of prairie dogs, soils can support a variety of annual and perennial forbs within colonies. All noxious weeds should be controlled immediately with hand methods or according to approved Land Use Plans. Other forbs may be present that are commonly referred to as weeds and they will need to be evaluated on a site specific basis. If the site is dominated by a single species, then it may be a weed that needs control. At times, however, certain plants appear to dominate a site after a favorable precipitation event. The site potential, including presence of perennial grasses and desirable forbs, should be evaluated before initiating control efforts.

Prairie dog monitoring

Post release counts of active translocation sites will occur weekly during the month of September. Spring counts will be completed at translocation sites according to accepted protocol. Active translocation sites should be visited weekly from July 1 to September 30 to assess supplemental food and water needs, predator activity, and other pertinent observations. If possible, all active translocation sites will also be visited weekly from April 1 to June 30.

LITERATURE CITED

- H. C. Jacquart, J. T. Flinders, M. P. Coffeen, and R. Hasenyager. 1986. Prescriptive transplanting and monitoring of Utah prairie dog (*Cynomys parvidens*) populations. Utah Division of Wildlife Resources. Unpublished report derived from H. C. Jacquart M.S. Brigham Young University, Provo, Utah. 70 pp.
- Overturf, A. T. (unpublished). Translocation techniques for Utah prairie dogs.
- Player and Urness. 1982. Habitat manipulation for reestablishment of Utah prairie dogs in Capitol Reef National Park. *Great Basin Naturalist* 42:517-523.
- Truett, J. C., J. A. Dullum, R. Matchett, E. Owens, and D. Sheery. 2001. Translocating prairie dogs: a review. *Wildlife Society Bulletin* 29:863-872.
- Truett, J. C., and T. Savage. 1998. Reintroducing prairie dogs into desert grasslands. *Restoration and Management Notes* 16:189-195.
- U.S. Fish and Wildlife Service. 1991. Utah prairie dog recovery plan. U.S. Fish and Wildlife Service, Denver, Colorado. 41 pp.

LIST OF APPENDICES

Appendix 1. Vegetation definitions

Appendix 2a & 2b. Burrow preparation pictures

Appendix 3. Ear tag placement

Appendix 4. Techniques to age and weigh prairie dogs

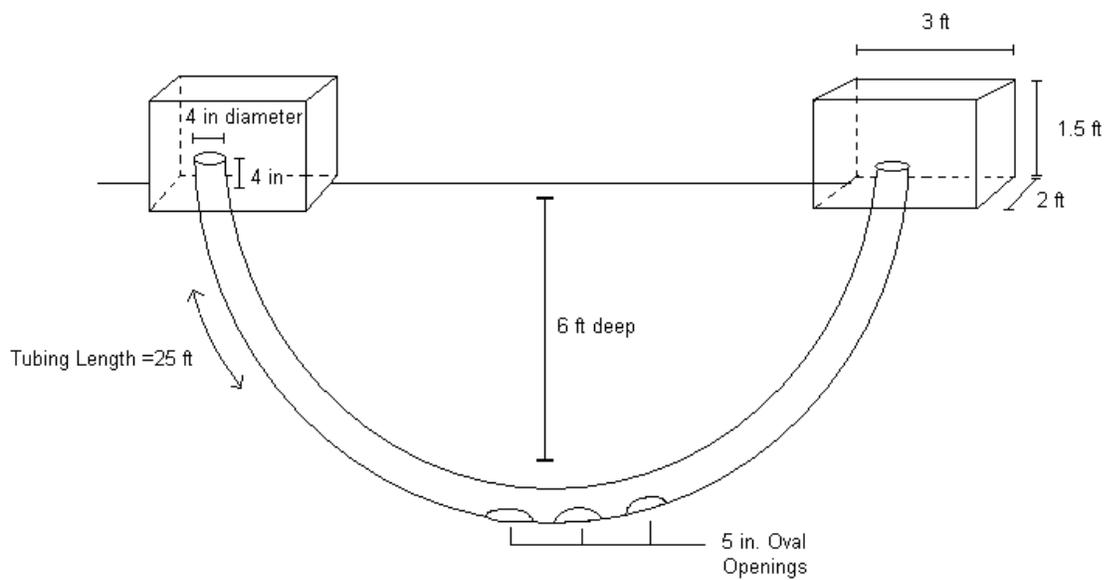
Appendix 5. Step point method

Appendix 1.

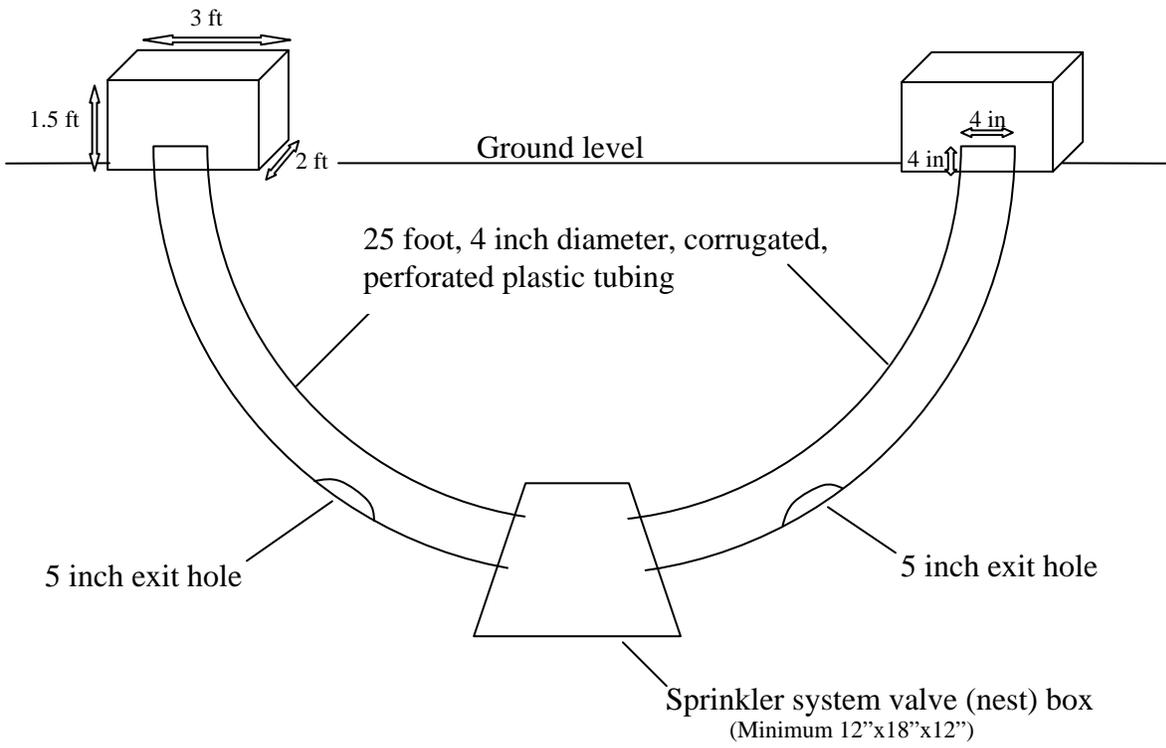
Vegetation definitions

Vegetative Type	Definition	Examples
Warm season grasses	Grasses which "green up" and do most of their growing during the warm summer months.	Sand dropseed, curlygrass, mountain muhly, and grama grass.
Cool season grasses	Grasses which "green up" and do most of their growing during the cool spring months.	Indian ricegrass, squirreltail, western wheatgrass, crested wheatgrass, needle and thread grass, cheatgrass, bluegrass, and wildrye.
Forbs	Included are any herbaceous plant other than those in the grass family (<i>Poaceae</i>). Must be palatable and provide nutritional value to prairie dogs.	Astragalus, alfalfa, aster, <i>Cymopterus</i> spp., buckwheat, fleabane, <i>Penstemon</i> spp., cinquefoil, phlox, globemallow, vetch, <i>Cryptantha</i> spp., lupine, crazyweed, clover, and goosefoot or pigweed.
Shrub	A plant with persistent, woody stems and a relatively low growth form, compared to trees, and that generally produces several basal shoots.	Sagebrush, big rabbitbrush, greasewood, four-wing saltbush, and broom snakeweed. Desirable subshrubs include forage kochia, winterfat, Gardiner saltbush, and little rabbitbrush.

APPENDIX 2. Diagram for Artificial Burrow Preparation



Appendix 2b: Artificial plastic tube burrow with nest box



Appendix 3.

Procedure for placing ear tags in Utah Prairie dogs.

Herd animal from the cage into the cloth cone to restrain them. Gently unzip the cone to expose the head taking care to not catch the fur of the dog in the zipper. While the dog is restrained, place a single #1 monel ear tag in each ear with pliers. Place animal's ear into the opening of the tag with the point positioned as far down toward the skull as possible so that when the pliers are closed and the tag attached it will puncture the ear at the base where the cartilage is thickest. Close the pliers with a firm, but gentle squeeze and watch to make sure the point on the tag should puncture the ear (be careful!! The animal may squirm) and pass through the hole in the tag. The pliers should bend the point and lock the tag on the ear. Place tag so that the number is readable from the top of the animal's head (i.e. number positioned dorsally). Return the animal to the cage for delivery to translocation site.

Appendix 4.

Methods to weigh and age Utah prairie dogs.

Prairie dogs are weighed using a spring scale while in their cage. The weight of the cage is then subtracted from the total weight and the weight is recorded on the data sheet.

Sex determination of Utah prairie dogs can be made by.....

Age class determination of Utah prairie dogs can be extremely subjective. Age classes can be broken down to juvenile and adult animals.

- juvenile male < 900 grams
- adult male > 900 grams
- juvenile female < 800 grams **
- adult female > 800 grams

**Occasionally, there will be very small adult females that weigh less than 800 grams. The only way to determine that it is an adult female is if she is lactating. If she is not, then it can be safely assumed that she is a juvenile.

Appendix 5.

Step-Point Method

This is the recommended method in the Conservation Strategy for determining whether or not occupied Utah prairie dog habitat conforms with the Vegetation Composition Guidelines. Therefore, the goal is to sample ground cover. This method is also used when inventorying habitat to determine future potential or suitability. Sampling should occur during a period representative of the peak production of the vegetative community, which is generally June and July.

Procedures

1. Person establishing the transect will select the most representative spot within an area of similar vegetation.
2. A location stake is driven into the ground at a random point.
3. Four parallel transects are offset from the location stake, two to the right and two to the left. The distance between the location stake and transects 1 and 3, and between each pair of transects, is 5 paces. (See attached illustration).
4. Document the location, starting point, bearing (north if possible), and other pertinent information concerning the study on the Utah Prairie Dog Study Area Location form.
5. Take a general view photo from the stake, including a photo card in the picture.
6. Run the transects. The surveyor should put a mark on the tip or side of their shoe, which will be the recording point. Walk the transect, recording sample points at each one pace interval along the transect bearing (1 pace is one full stride or 1 step with each foot). A hit is recorded at each point as whatever the mark on the shoe hits directly, while taking extreme care to avoid bias. We are collecting ground cover on shrubs, not canopy cover. However, if you hit a plant or other ground cover overshadowed by a shrub: document the plant (or litter etc.) for ground cover AND document the shrub hit too. Annual plants are counted whether green or dried.
7. Make notes of other plant species seen, but not hit on the transect.

Equipment

1. Utah Prairie Dog Study Area Location Information Form
2. Utah Prairie Dog Vegetation Studies/Step-Point Data Form
3. Photo Identification Cards
4. Field maps
5. Flagging
6. Stakes to mark transects.
7. Light weight post pounder
8. Camera: 35 mm with a 28 mm wide angle lens
9. Film
10. Easel for holding photo labels
11. Rubber bands
12. Black felt-tip pen
13. Pencils
14. Compass