Grassland Nesting Ducks: Predator Identification and Nesting Success in Relation to Hostile Habitats

Jessica C. Sedivy

Prepared for the US Fish and Wildlife Service, the Minnesota Waterfowl Association, and Concordia College

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PREFACE

In January 2000, I was asked to join the Concordia College Biology Honors program, which invites excellent junior biology majors to carry out, write up, and present original research in the area of biology. To reflect both my personal and academic interests, I chose to direct my research in conjunction with a grassland duck nesting study being conducted by the U. S. Fish and Wildlife Service (USFWS) Habitat and Population Evaluation Team (HAPET) and the Minnesota Waterfowl Association (MWA.) The USFWS_MWA study sought to gather baseline data on grassland nesting ducks, while my research attempted to identify a relationship between duck nesting success and hostile habitats that may contribute to increased depredation.

This report was commissioned by the HAPET office in Fergus Falls, MN. It is an overview of the nest drag method that underlies both studies, a summary of predator identification contracted independently from my research, and the methods, results, and discussion of my efforts relating to nesting success and hostile habitats.

I acknowledge the USFWS and MWA for providing the funding and equipment needed to conduct this research. I would like to thank Dan Hertel, Tony Rondeau, and Rex Johnson for their technical support on this project as well as their field assistance. Concordia College and my project advisor, Dr. Gerald Van Amburg, were also essential for the implementation and ultimate realization of my research.

Finally, I owe a great deal of thanks to my fellow crew members who assisted with many hours of data collection. Without the efforts of Sue Aker, Nate Brooberg, Jessica Lee, Corey Gray, Tyler Hallock, and Tony Slowik, this research would not have been possible, or as enjoyable.

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ABSTRACT

Nesting success of grassland ducks in the Prairie Pothole Region depends on many factors, but most unsuccessful duck nests can be attributed to destruction by natural predators. Predator identification and an understanding of nest sites in hostile habitats can be combined to improve management practices on both public and private lands, ultimately increasing rate of nesting success. Predator identification can be achieved through systematic evaluation of destroyed nest sites, and once common predator species are noted, steps can be taken to control them. Hostile habitats are important because they encourage the activity of predators, and since many of these habitats are created by humans, the potential for their reduction or elimination often exists.

THE MINNESOTA WATERFOWL ASSOCIATION AND UNITED STATES FISH AND WILDLIFE SERVICE COOPERATIVE AGREEMENT

Research of this magnitude often requires the input of different organizations, and for our study, the Minnesota Waterfowl Association (MWA) and the United States Fish and Wildlife Service (USFWS) worked in partnership to accomplish common goals. Our research was designed to provide baseline nesting success data for upland nesting ducks in the Prairie Pothole Region, and was carried out by the Habitat and Population Evaluation Team (HAPET) division of the Fergus Falls, MN, USFWS station. To date, the study has included two field seasons, 1999-2000.

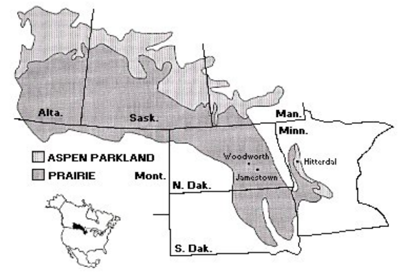

Figure 1.1 The Prairie Pothole Region

In 1999, the study focused on the Fergus Falls wetland management district and included ten townships that spanned an area from southern Otter Tail County, MN to the southern portion of Grant County, MN. In 2000, the study covered the Morris, MN wetland management district and focused on townships scattered throughout four Minnesota counties: Big Stone, Pope, Stevens, and Swift.

Objective of the study

The objective of the study was to provide baseline nesting success data for upland nesting ducks in habitats where information is lacking (Hertel 1). Data was gathered to provide better information for the four square mile production estimates system, and included critical habitat types such as federally owned grasslands, CRP fields, odd areas, privately owned grasslands, woodlands, and road right of ways.

Crews worked with the intention of finding as many nests as possible in as many different habitats as possible.

Study Plan

The sample unit size for the study was a four-square mile block, often referred to as a plot, which copies the homerange of a Mallard duck. This size also tends to provide an adequate mix of large fields and other, smaller habitats such as woodlands and road ditches (Hertel 1). Breeding duck densities within the watershed management district were analyzed to isolate the townships of highest breeding duck densities, and then those townships were divided into nine four-square mile blocks. These sample blocks were then randomly sorted, listed, and analyzed for habitat availability.

Two crews were used to search for nests – one crew consisting of three members, and one crew consisting of two members. At different times crews utilized several search methods which will be described in the next section of this report; crews attempted not to spend more than two days of searching habitats in the same plot.

Two complete searches were done for each study area. The first search was executed between May 1, 200 and June 2, 2000. The second search lasted from June 5, 2000 to July 7, 2000. HAPET had one full time permanent employee to work on the project and five seasonal MWA cooperative agreement employees to assist in the completion of fieldwork.

Nest Drag Technique

Before discussing the specific methods for this research, it is necessary to understand how nests are initially located. There are several methods used to find nests, but the most common in the Prairie Pothole Region is the cable-chain drag, which was developed by biologists to locate nests in grassland habitat.

Nest dragging involves a “drag” which is a chain or rope of variable weight and length. The drag is then connected between two vehicles, usually four-wheel drive vehicles (4WD) or All Terrain Vehicles (ATV) that are equipped with suitable hitches to prevent the drag from becoming caught in the rear axles while turning corners or maneuvering over rough terrain.

Four-wheel drive drag. When using 4WD, which are usually jeeps, two drivers and a spotter are needed to run the crew. The jeep drag used for our study is 200 feet long and it connects the vehicles while the drivers move forward, in tandem, with some slack in the drag. When the chain passes over a nest, the hen is startled and flushes. The third person on the crew, the spotter, is looking out the back of the jeep and alerts the drivers to the flushing hen. The drivers turn to identify the species of duck while the spotter remains fixed on the location of the flushed hen; then the drivers, directed by the spotter, located the actual nest (Sedivy 1). Usually aerial photos are reviewed and a strategy is developed to maintain efficiency before dragging a field.

ATV drag. The ATV drag is similar to the jeep drag, but there is no spotter involved, so only two people are needed for the crew. The drag used for our study was 100 feet long, and was not as weighted as the jeep drag. Because there are only two people on this crew, they must be constantly alert to spot a flushing hen. Although the jeep drag can cover more ground in a shorter amount of time, the ATV drag has the advantage of being smaller and more maneuverable, which means it can be used to search field edges, slough bottoms, road ditches, or the space between tree rows.

Rope drag. The most physically grueling of all drags for the investigator is the rope drag, which is simply a length of rope pulled by two walking people. This method is used on small sections or where 4WD/ATV are not allowed by landowners.

Hand search. Like the rope drag, the hand search involves human effort, not vehicle work. One or more people carry willow sticks and run them through the grass in an attempt to flush hens. This method is useful because some area are too small for a vehicle drag. Occasionally a hen will flush during a jeep or ATV drag and the investigators are unable to locate the nest; in these cases, a hand search over the same general area can be done later in the day. If a hen is nesting there, a hand search will cause less disturbance to the nesting site than re-dragging with vehicles (1).

Dog search. The dog search is probably the rarest search method, but it can be effective with a trained dog. This method is based on the fact that dogs have a better sense of smell than people, so they have an advantage at locating nests, even though nesting hens typically don’t produce much scent.

Incidental nests. There is always a possibility that a nest will be found even when crews aren’t searching. Often these nests are discovered when walking out to revisit previously found nests, but occasionally one can be found when doing routine activities like eating lunch or unloading an ATV. These nests don’t fall under a search category when recording data, but are classified simply as incidental.

Safety. Te nest drag technique is considered to be safe for both hens and nests; in some instances, the chain will actually pass over a hen and she will not flush. Actual dragging is restricted to 6mph or less for the safety of the hens and nest.

Nest Marking and Revisits

After a nest is located and pertinent data is recorded on the Habitat/Nest Record, the nest is marked so researchers can revisit the nest to monitor its progress.

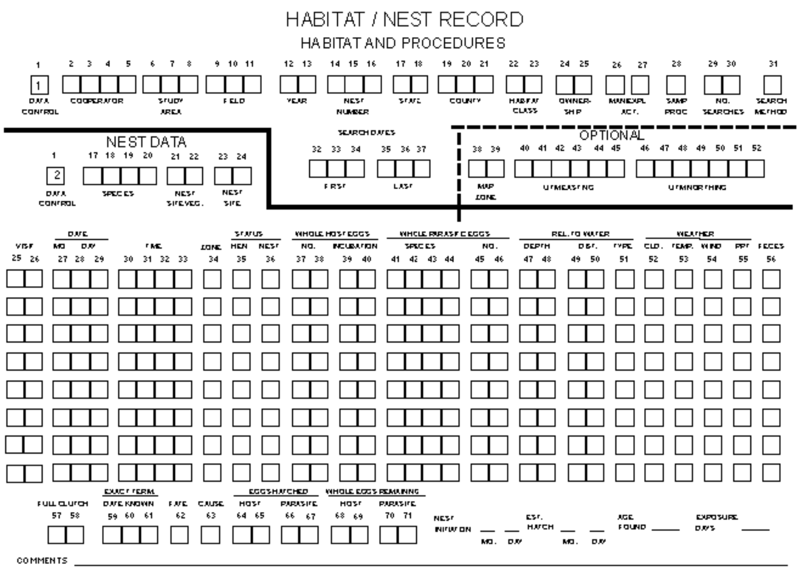

Figure 1.2 Habitat/Nest Record for recording nesting data. Taken from the Northern Prairie Wildlife Research Center. Available: http://www.npwrc.usgs.gov/resource/tools/nesttool/yellcard.htm

Slender willow sticks flagged with short strips of brightly-colored flagging tape are good markers for nests; in short cover, wire survey flags can be used (Klett *et al.* 1986). Stakes should be pushed into the ground four meters north of the nest. It is generally a good idea to use a compass to determine the exact direction from the nest because nests can be surprisingly difficult to find when revisiting.

It is also important to record the location of nests on an aerial photo and with a Geographic Positioning System (GPS) unit. When combined with field notes describing the location of the nest, the aerial photos and GPS coordinates can be used to find the nest in the event that the willow stick or survey flag is dislodged.

Revisiting the nest allows the investigators to determine when the nest is terminated; terminated nests are broken down into four categories: successful, destroyed, abandoned, or infertile. A nest is deemed successful if one or more eggs hatch. While destroyed nest are usually the result of “predation, farming operations, flooding, or livestock…sometimes the direct cause cannot be determined” (Klett *et al*. 1986). Abandoned nests are those containing undisturbed clutches that are no longer tended by a hen. Infertile clutches may continue to be incubated by hens even though they will never produce live chicks.

Nests are revisited every seven to ten days, and the researcher flushes the hen by hand before recording necessary information regarding the status of the nest. If a predator has destroyed the nest, a nest depredation record is filled out. This record can be further analyzed in an attempt to determine what species of predator destroyed the nest.

PREDATOR IDENTIFICATION

Most unsuccessful duck nests can be attributed to destruction by natural predators. Because the Prairie Pothole Region is the breeding ground for many North American ducks, biologists are concerned about the nesting success of these birds. High predation rates of hens naturally led an interest in predator identification (Sargent *et al.* 1998). If wetland managers are able to identify specific predators, steps can be taken to reduce hen depredation by the said predator species.

Methods of HAPET Predator Identification

During nest revisits in the summer of 2000, HAPET personnel and MWA technicians recorded information pertaining to depredated nests. This portion of the grassland nesting studies utilized the nest depredation record produced by the U.S. Geological Survey and the Northern Prairie Wildlife Research Center.

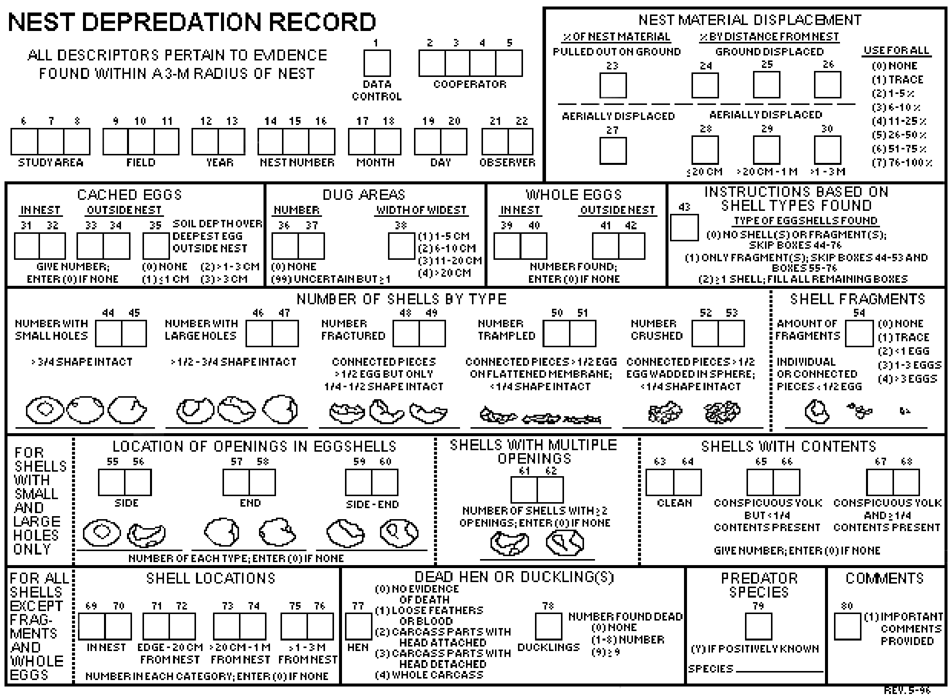

Figure 2.1 Format recommended in the Prairie Pothole Region for recording evidence of depredation found at duck nests destroyed by predators. Taken from the Northern Prairie Wildlife Research Center. Available: http://www.npwrc.usgs.gov/resource/1999/depred/appenxd1.htm

After data is recorded, it can be analyzed and a probable predator can be assigned to a depredated nest.

The HAPET predator analysis involved comparing available data against depredation characteristics set forth in the 1998 publication *Interpreting Evidence of Depredation of Duck Nests in the Prairie Pothole Region* written by Alan B. Sargeant, Marsha A. Sovoda, and Raymond J. Greenwood. This work produced a detailed list of characteristic trends observed by investigators pertaining to eleven predators known to affect the success of nesting ducks in the Prairie Pothole Region: coyotes, red foxes, striped skunks, American badgers, minks, weasels, Franklin's ground squirrels, Black-billed Magpies, American crows, and gulls.

Identification of predators was accomplished by individually evaluating each depredated nest record against the standards devised by Sargeant, Sovada, and Greenwood. When applicable, individual information for specific nests was utilized. This information could include: photographs of the depredated nest, recorded information pertaining to location and/or habitat of nest, sighted predators in the nest area, or scat/scent left at the nest by predators.

In 2000, HAPET personnel and MWA cooperative agreement employees found a total of 521 duck nests; of these, 278 nests were depredated (53.4%). Every attempt was made to assign a probable predator to each depredated nest.

Results

Of the 278 depredated nests in 2000, the following predators were identified, along with the number and percentage of nests depredated by each species: coyotes (9, 3.2%): red foxes (31, 11.2%); raccoons (34, 12.2%); striped skunks (72, 25.9%); American badgers (31, 11.2%); minks (4, 1.4%); weasels (1, o.4%); Franklin's ground squirrels (2, 0.7%); American crows (1, 0.4%). Additionally, some nests were suspected of predation by multiple species (6, 2.2%).

Sometimes, despite all attempts, there was not enough information to determine a predator. These nests were labeled "unknown" (48, 17.3%). If there was a discrepancy between possible predators, each probable predator was identified and the nest was classified as "unsure" (39, 14%). Appendix A contains habitat/nest record information for each nest as well as predator identification information.

Because the study spanned four counties and eighteen study areas, predator species breakdown information was analyzed in three ways; overall, by county, and by study area (Appendix B Tables 1-23).

Challenges of Predator Identification

Although the protocol designed by Sargeant, Sovada, and Greenwood makes every attempt at objectivity, some qualities of predator identification remain both variable and subjective.

Because a predator may exhibit unique qualities, just an individual person does, characteristics of nest depredation can be unpredictable (Lariviere 1997). While trends can be identified for *most* individuals of a predator species, variations in the actual individuals will exist. The factors that help identify a predator are based on a combination of observations gathered by investigators about vegetative, nest bowl, and eggshell conditions. Investigators are often at a disadvantage because the necessary interval between nest visits (typically 7-10 days) must be kept moderate in attempts to prevent visitor-induced predation while maintaining nest-searching efficiency. However, several confounding factors can influence the nest site in the relatively long span between nest visits.

Figure 2.2 Depredated Blue-winged Teal eggs.

Repeat predation by the initial predator, predation by multiple predators, hen return to depredated nest, or inclement weather conditions can all affect the appearance of depredated nests. Often these changes can happen rapidly, making interpretation of available evidence confusing for the investigator (Lariviere 1997). Eggshells, cached eggs, or strewn nest material can be difficult to find in dense cover, and it is easy to overlook small details that may later be of importance.

While some critics go as far as to say "that nest appearance does not provide a reliable method for the identification of waterfowl nest predators," the ability for managers to even qualitively identify the most common predators should be valued.

NEST DEPREDATION IN RELATION TO HOSTILE HABITATS

After spending the 1999 field season working to acquire baseline data on grassland nesting ducks, some general observations were made regarding the relationship between nesting success and nest location. While the casual observer may think that ducks select their nesting sites arbitrarily, biologists believe that organisms are not distributed randomly among habitats (Clark 1999). While it may not ever be possible for humans to understand why a hen will choose to nest in a certain patch of grass, avian survival and reproductive performance can depend on nest-site selection, which makes it both an interesting and practical area of study for biologists and managers.

Nest site choices can be attributed to the process of natural selection, which could result in nest site preferences than are genetic, imprinted, or learned (Klopfer 1963, Hilden 1965, Cink 1976, Sonerud 1985, Clark 1999), While the thought that natural selection underlies a hen's choice of a nest site is a valuable area of study, the examination of the differences between unsuccessful and successful nest sites is also crucial.

There are several factors that affect nesting success, but predators undoubtedly have the most influence over the outcome of a hen's nesting endeavors (Ricklefs 1969, Martin 1995, Clark 1999). Predators in general actively seek out game, and they are attracted to objects that hold scent or linear structures, such as these factors, which may be natural or artificial, could have a large impact on nesting success. Because of this, I chose to study whether or not certain nesting locations selected by a hen would render her nest more susceptible to predators; these areas were identified as hostile habitats.

The hostile habitats that I selected for evaluation in 2000 were based on general observations that I had made during fieldwork in 1999. I did not characterize hostile habitats according to vegetation type or predator density, but chose instead to define a hostile habitat as any ecological habitat that included one of the following structures within 100 meters of the nest site:

1) A wetland edge
2) A linear structure such as a fence, line of telephone poles, tree row, field edge, or road ditch
3) Tree/shrub or group of trees/shrubs
4) A stationary structure such as a pile of rocks, lone fence post, a building, or abandoned farm equipment

Additionally, I had previously observed that nests unusually close to vehicle tracks were depredated more than nests that were farther away from vehicle tracks. Vehicle tracks are an important factor because they are both artificial and unavoidable while nest dragging, and their presence near a nest is left to chance. Nest dragging poses certain threats to nesting ducks because humans influence the nest by depositing scent while locating the nest, erecting a willow stick four meters from the nest, and leaving vehicle tracks a maximum of 30 meters from a vehicle track. Because the marking willow stick is the most proximal constant at each nest, I chose to incorporate its distance from the nest into my last hostile habitat:

5) Vehicle tracks within four meters of the nest site

My main objective for the study was to make generalizations regarding the potential effects of hostile habitats on duck nesting success; these conclusions could then be used by waterfowl managers or private land owners for personal waterfowl management.

I hypothesized that the success rate of nests located in hostile habitats would improve as the distance from the structure that defined the habitat as hostile increased.

Methods for Obtaining Original Data

Nest dragging methods, as extensively discussed earlier in this report, were conducted in eighteen four-square mile study areas selected randomly across the following Minnesota counties: Pope, Stevens, Swift, and Traverse. When a nest was found, it was revisited until termination, and when termination was the result of depredation, information was gathered and an attempt at predator identification was made when the field season was completed.

Of the 521 nests found in 2000, 446 (85.6%) were evaluated for location in a hostile habitat. If the nest fell into a hostile habitat, the distance from the nest to the structures defining the habitat were recorded in meters (Appendix C). In many cases, nests were within 100 m of more than one structure; data was then recorded for each structure, since it is impossible to tell which, if any, structures contributed to depredation or success. Abandoned nests, nests damaged or destroyed by investigators, nests inside predator exclusion fences, or nests with insufficient habitat data were eliminated from the data pool.

Because time spent at the nest is minimal, observers were forced to estimate distances to hostile habitat structures; this reality is reflected in the distance ranges in my graphed data. Close structures could be quickly measured with the same methods used to erect willow markers four meters from the nest bowl. When the structure was between 20 and 50 m observers were believed to be moderately accurate; between 50 and 100 m, accuracy is expected to decrease when estimating distance in a brisk fashion. These estimations are an unfortunate result of the need to spend as little time at the nest site as possible in an attempt to eliminate, or at least reduce, the possibility of human-induced predation. Although neither were used in the actual data processing, specific nest site vegetation data, as well as documentation of the species of duck utilizing the nesting site was also recorded. Because hostile habitat structures are considered permanent when studying the relatively short-term incubation period of ducks, it was irrelevant which nest visit the hostile habitat data was recorded on.

The collected data was then referenced on a spreadsheet and graphed to reflect the percentage of depredated nests in relation to the distance of the nest site from each hostile habitat structure (wetland edge, linear structure, tree (s)/shrub(s), stationary structure, or vehicle track.)

Results

Of the 521 nests found in 2000, 408 (78.3%) qualified for the hostile habitat study. There were 234 depredated nests (57.4%) and 174 successful nests (42.6%.) These nests were then placed into the respective hostile habitat categories and depredation rates were calculated for all nests in the hostile habitat (all nests < 100 m from the hostile habitat structure) are displayed in Table I. Additionally, depredation rates are shown for the following distance ranges: (1) 1-5 m; (2) 6-10 m; (3) 11-15 m; (4) 16-20 m; (5) 21-50 m; (6) 51-100 m; (7) > 100 m. These results were compiled in Tables II and III.

Hostile Habitat	Depredation Rate	Sample Size
Wetland edge	67.50%	203
Linear Structure	58.40%	149
Tree(s)/Shrub(s)	65.70%	99
Stationary structure	44.40%	27
Vehicle track	68.80%	64

Table I Depredation percentages for all nests in a hostile habitat.

Distance to Hostile	Hostile Habitats Depredation Rate			
Habitat Structure (m)	**Wetland edge**	**Linear structure**	**Tree(s)/shrub(s)**	**Stationary structure**
0	72.22%	28.57%	0.00%	0.00%
1-5	84.62%	68.42%	40.00%	50.00%
6-10	86.36%	71.43%	73.68%	60.00%
11-15	76.92%	57.14%	78.57%	0.00%
16-20	58.33%	68.75%	75.00%	0.00%
21-50	62.67%	43.18%	57.50%	66.67%
51-100	61.54%	66.67%	66.67%	33.33%
100+	47.50%	56.76%	54.69%	58.27%

Table II Nest depredation rates for individual hostile habitats and specific distance ranges.

Distance to Vehicle Track (m)	Depredation Rate
0	60.00%
0.1-0.9	77.78%
1	73.33%
2	61.54%
3	66.67%
4	50.00%
4+	44.77%

Table III Nest depredation rates for nests near vehicle tracks.

Data from these figures was then graphed to reflect trends in the percentage of depredation in relation to the distance from the hostile habitat structure. Nests that were within 100 m of more than one structure were calculated and graphed under all necessary hostile habitat categories. These graphs were included on the following pages in figures 3.1-3.5.

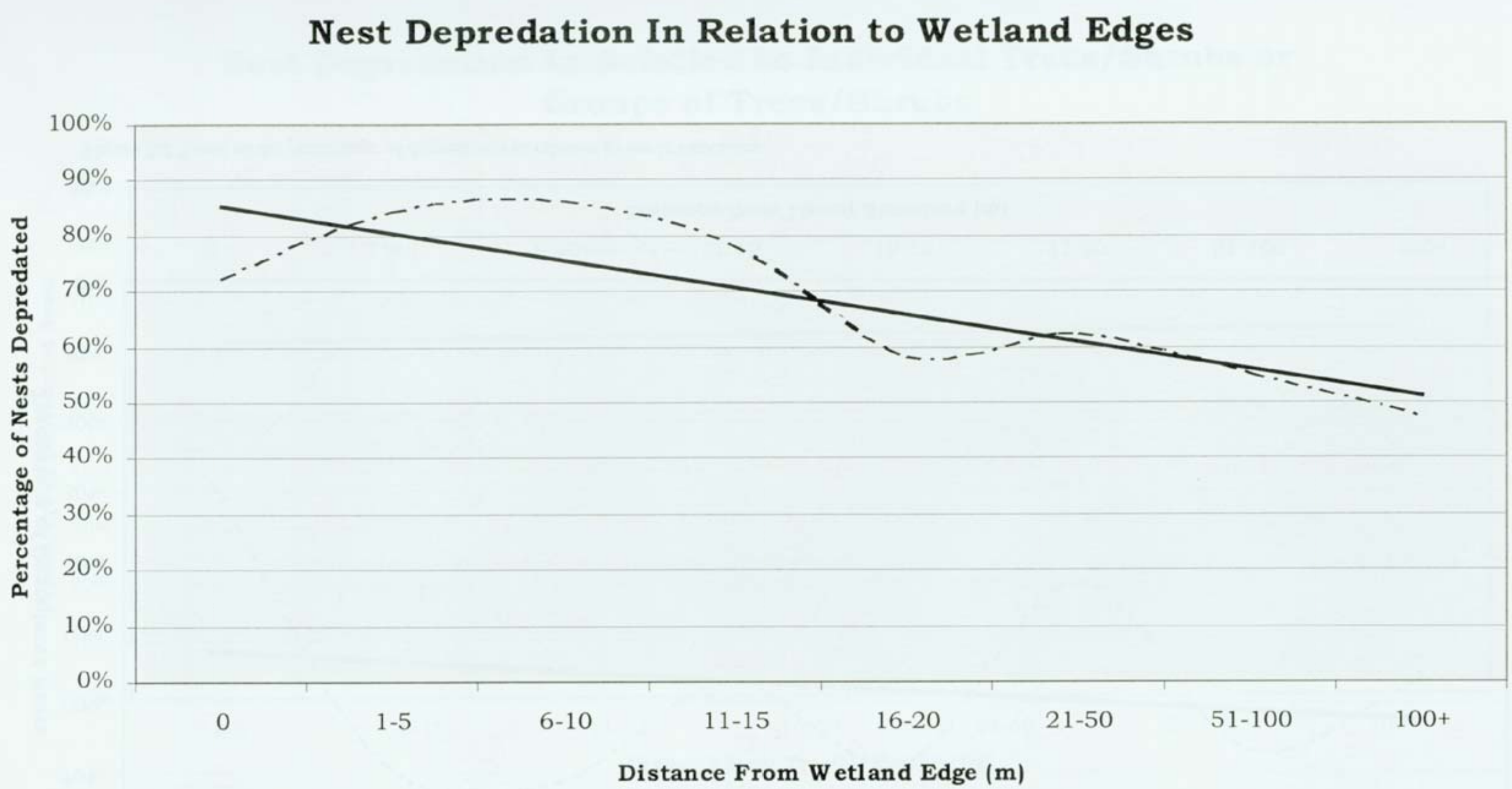

Figure 3.1 Trend of the percentage of depredation in relation to distance from wetland edges.

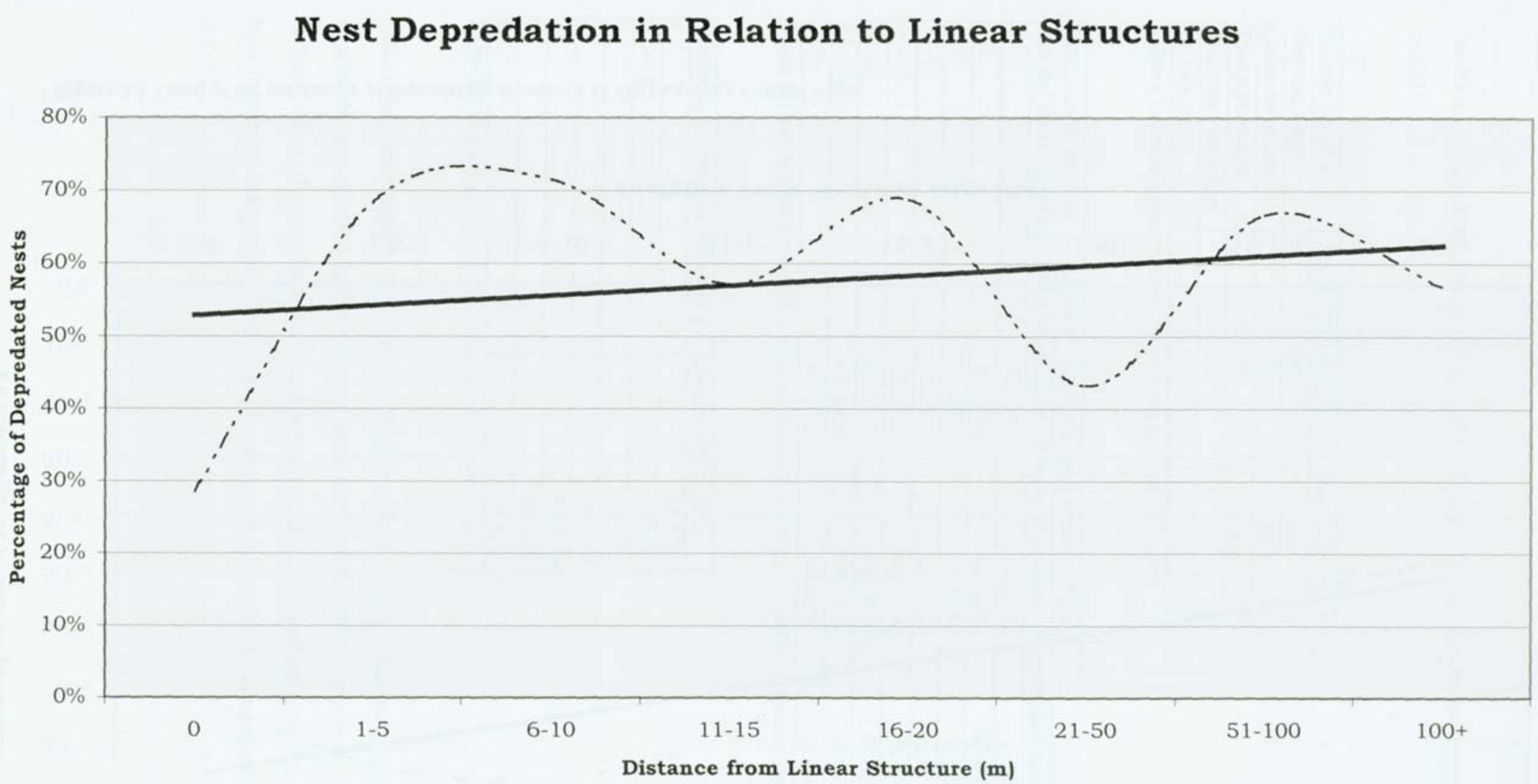

Figure 3.2 Trend of the percentage of depredation in relation to linear structures.

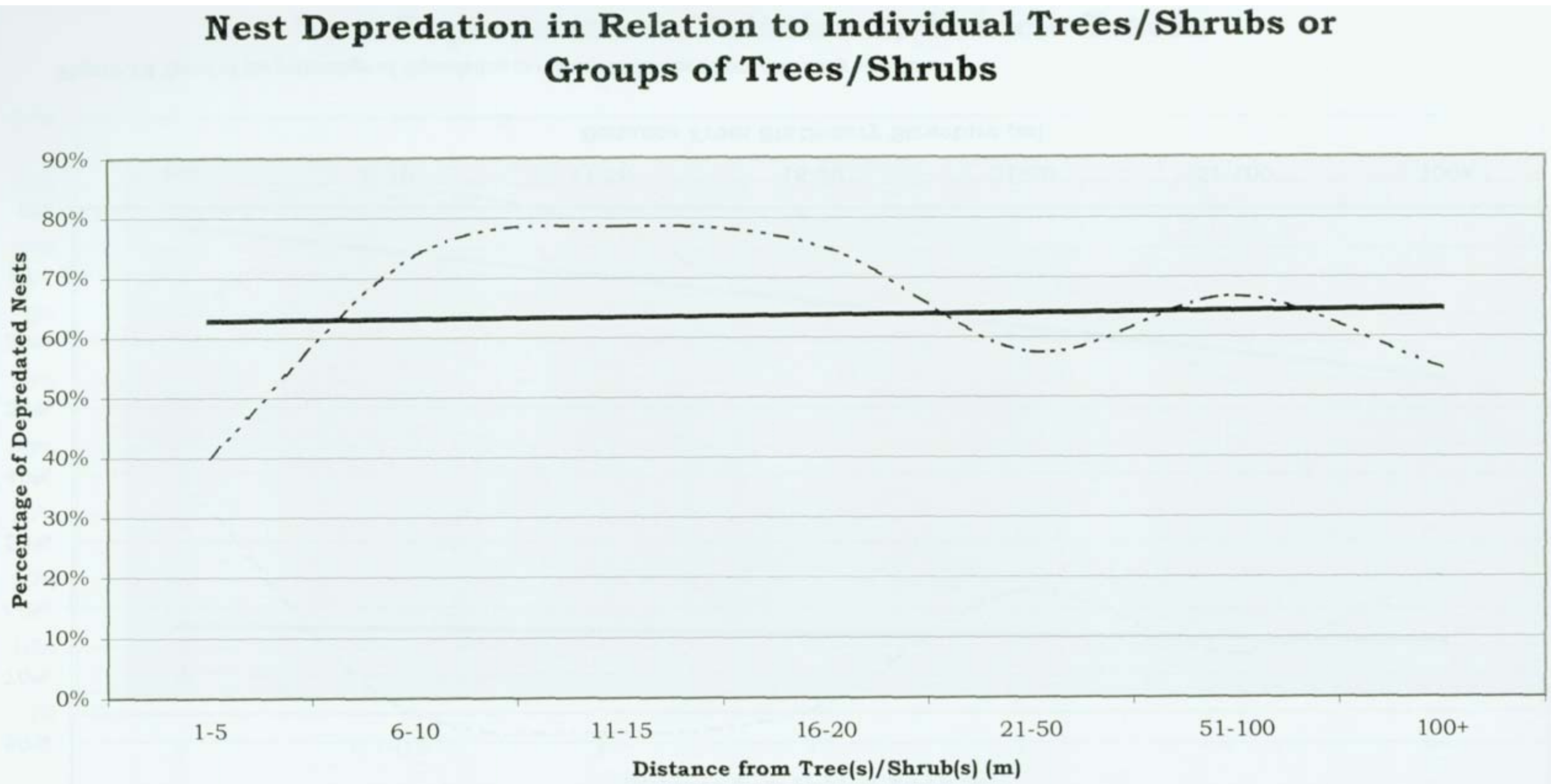

Figure 3.3 Trend of the percentage of depredation in relation to distance from tree(s)/shrub(s).

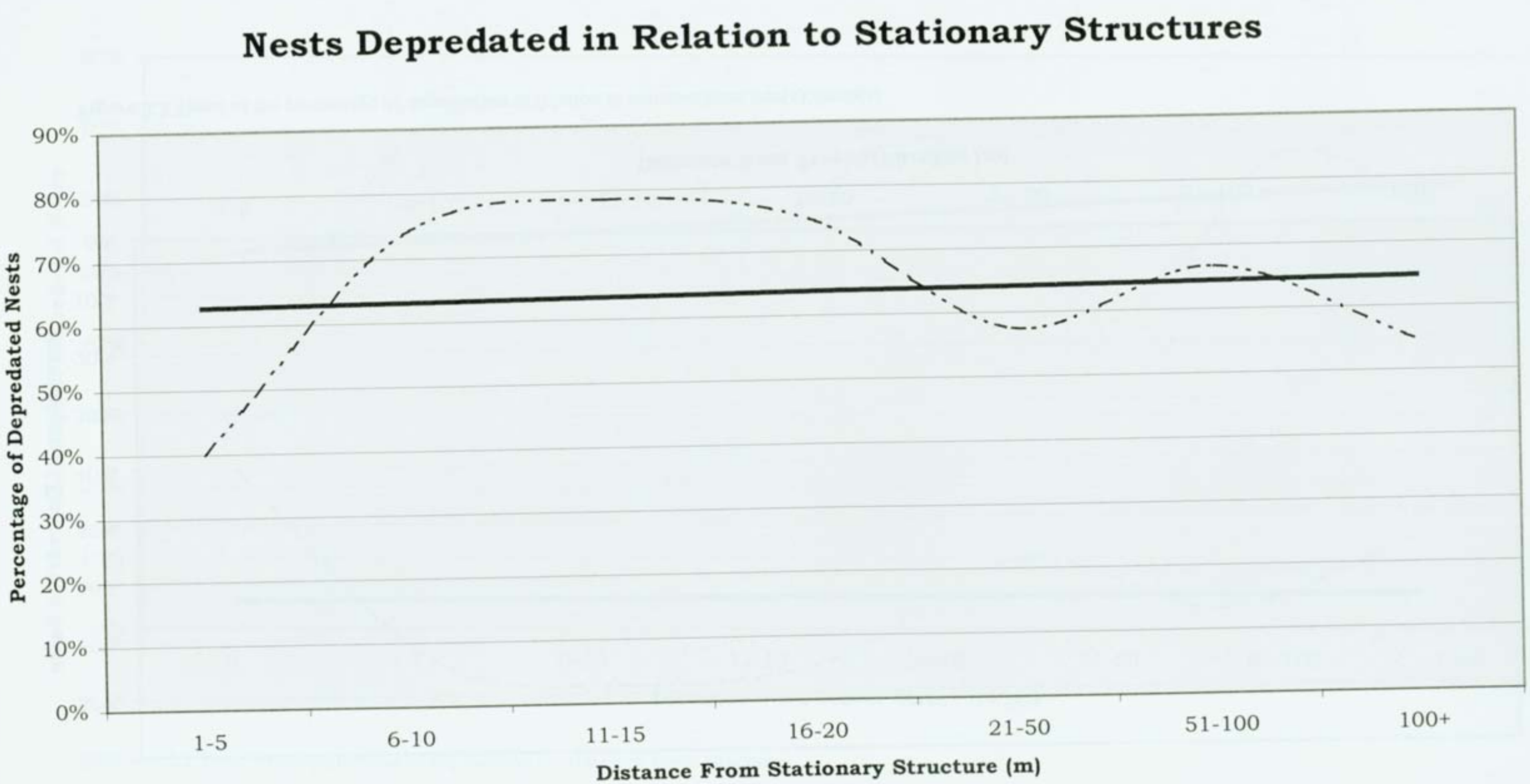

Figure 3.4 Trend of the percentage of depredation in relation to distance from stationary structures.

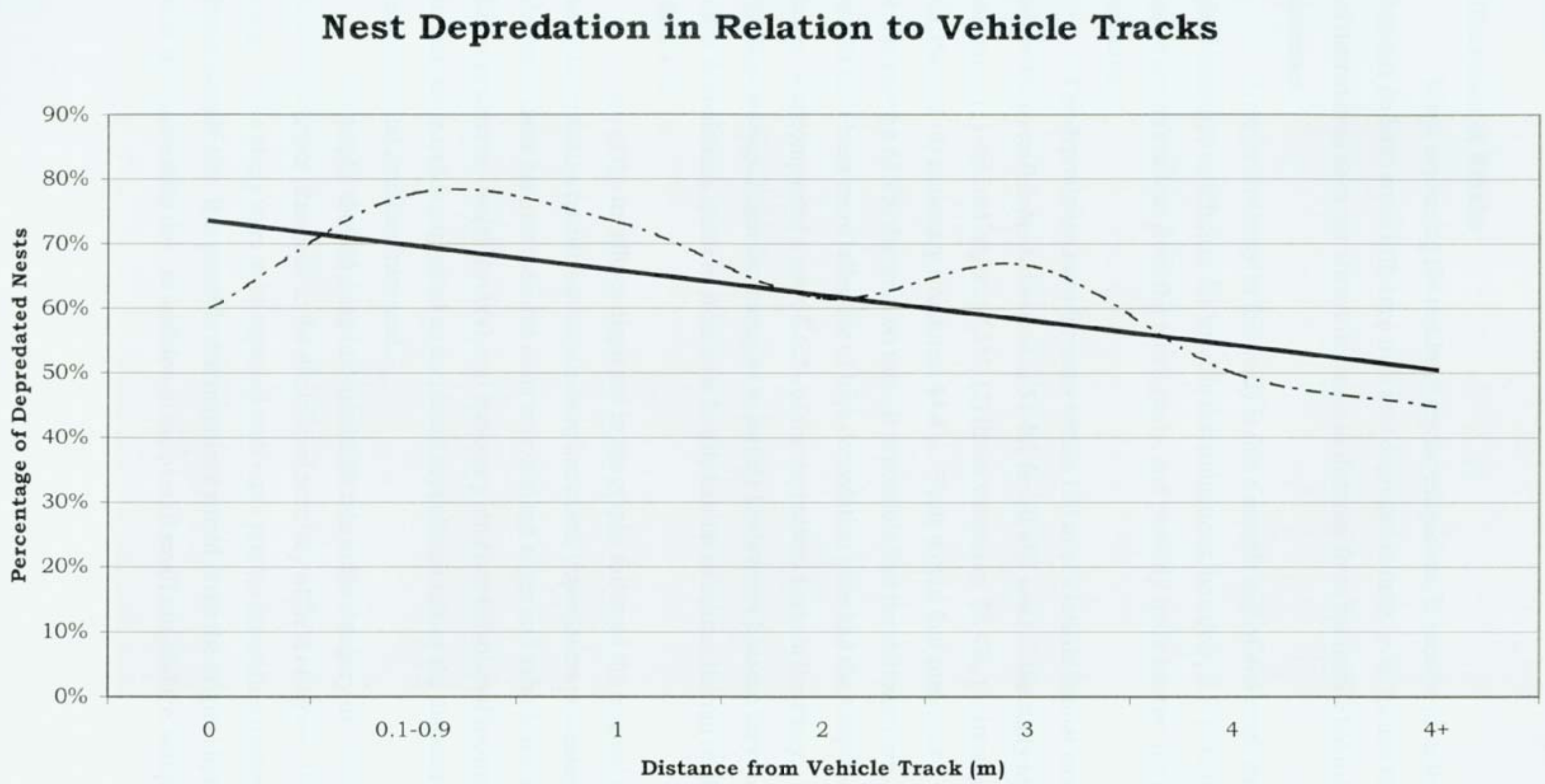

Figure 3.5 Trend of the percentage of depredation in relation to the distance from vehicle tracks.

Discussion of Results

When evaluating the results of my investigations, it became clear that hostile habitats do have some influence over nest depredation rates, even though the percentage of depredation does not always decrease as distance from the hostile habitat structure increases.

A major challenge to this study is that a sample size of 408 nests during only one field season is insufficient for specific determinations; however, it is possible to make some generalizations from this small study, and possibly spark interest for further research.

The depredation rates for nests within 100 m of a hostile habitat structure are above the overall depredation rate of 57.4% for all 408 nests in the study in all but one category: (1) wetland edges, 67.5%; (2) linear structures, 58.4%; (3) tree(s)/shrub(s), 65.7%; and (4) stationary structures, 44.4%. Nests within four meters of a vehicle track experienced a 68.8% depredation rate. It is possible that the stationary structure data would have been more reflective of high depredation rates had the sample size been larger: it encompassed a mere 6.62% of the depredated nests in the study. These gross findings are significant for managers or private landowners because they suggest that more depredations occur in these areas near hostile habitat structures than in relatively open field areas.

Two of the trendlines displayed in the graphs followed the original hypothesis that as distance from a hostile habitat structure increased, depredation percentage rates would decrease: these habitats included nests near wetland edges and vehicle tracks. Nests near linear structures, tree(s)/shrub(s), and stationary structures displayed inconclusive results; in fact, some trends suggested an increased depredation rate as the distance from the hostile habitat structure increased.

All graphs showed a sag in depredation rate in the category of 51-100 m, and this is an unfortunate drawback to the diminished accuracy of field observers in this distance range. If the study were to be repeated with more precise measuring methods and a larger sample size, it is possible that trendlines would favor the original hypothesis more than the final results did. In addition to the overall small sample size, sample sizes for some distance ranges of individual hostile habitats were unbalanced, or completely lacking. This undoubtedly contributed to some distortion of graphing trends.

The combination of gross data for nests within 100 m of wetland edges and 4 m of vehicle tracks, and the graphed trends for these same hostile habitats, suggests that nests near wetlands and vehicle tracks experience a lower rate of success. However, the success rate does improve as nests move farther away from the wetland edge or vehicle track. This conclusion, as well as the inference that nests close to any hostile habitat will have a lower success rate than nests in open areas, leads to the following management implications and suggestions for future research.

MANAGEMENT IMPLICATIONS AND POSSIBILITIES FOR FUTURE RESEARCH

The ultimate objective of this study, aside from the pursuit of scientific discovery, was the practical application of the data for waterfowl managers, or the private landowner wishing to increase duck nesting access on his or her property. While some general recommendations can be made for managers and landowners, probably the most exciting part of this research project is that the results indicate a need for further research in the area of hostile habitats and duck nesting success.

Recommendations for Management and Private Landowners

Managers have the daunting task of taking a section of land and trying to make it a safe and productive area for ducks to nest in. Based on the findings of this study the following recommendations can be made:

1. While water is essential for breeding, hen maintenance, and brood rearing success, large open grasslands for nest sites are also important for ducks. Wetland edges usually are not able to be altered, nor does this report intend to suggest that they should be changed in any way; however, the manager or private landowner desiring to increase nesting success also should attempt to provide safer expanses of cover for nesting hens.
2. Structures, especially those that are artificial, should be removed from available open nesting ground. Some sections of land are littered with dead trees, piles of rocks, old fencelines, or abandoned farm machinery. These structures will hold numerous scents and exist as an attractive curiosity, if not a functional home, for some predators. When feasible, attempts should be made to dispose of unnecessary hostile habitat structures.
3. The operation of motorized vehicles on land intended for duck nesting grounds should be eliminated completely. Vehicle tracks are an artificial hindrance to nesting success, and the possibility that a vehicle might directly destroy a nest always exists. While it is not permitted to drive on most state and federal nesting grounds, private landowners often will drive around to view their property. This should be avoided; additionally, in dense cover, vehicle tracks may persist from season to season, so it is not always sufficient to restrict vehicle use only during hen nesting. If vehicle use is necessary, track surface area should be kept to a minimum, which can be accomplished by repeatedly driving on the same path.

Some managers or landowners are active in predator control by the utilization of hunting, trapping, or predator exclusion methods. While these options are available and desirable in some cases, the above recommendations attempt to boost nesting success in grassland ducks by assisting hens instead of merely inhibiting predators.

Future Research

This study had several drawbacks, but the most difficult to overcome was the lack of controls; because the hostile habitat study I conducted was in addition to an already established research, there was no way to control the sample size or location of nests.

Similar research could be successfully conducted by using artificial nests, which would allow investigators to select hostile habitats and place an ample number of nests specific distances from the hostile structures. Because many duck nesting studies, especially studies involving predators, utilize the artificial nest, a relatively small amount of background work would be required. Many Waterfowl Production Areas (WPAs) and Waterfowl Management Areas (WMAs,) as well as available private properties, contain the previously defined hostile habitats, so study sites in areas of high density nesting estimates should be relatively plentiful.

This study reflects other areas of study as well. Due to the underlying idea that natural selection plays a role in which nest sites are chosen by hens, further research could be conducted regarding the evolutionary pressures influencing nest site selection. While Clark and Shutler in Saskatchewan conducted a previous study concerning avian habitat selection, further research could be conducted throughout the Prairie Pothole Region.

Another observation made by personnel and technicians while working on the USFWS-MWA study could lead to future research. While searching for nests using the nest drag method, sometimes investigators find nests located unusually close to each other. These nests, which we referred to as “twin nests” may have been separated by a mere 10 m, and often shred the same fate. Additionally, those that were unsuccessful because of depredation often appeared to have been destroyed by the same predator species. It would be interesting to know why some hens occasionally choose to nest so close together, and whether or not this contributes to the success or failure of both nests.

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Study Area	Field	Nest	County	Habitat	UT	Easting	Northing	Species	Nest Veg	Fate	Cause	Ownership	Predator	Nest Initiation	Estimated Hatch	Age found	Vegetation	Description of vegetation
BA8	021	002	121	1	15	310402	5042188	1320	02	1	-	14		20-Apr-00	25-May-00	27	cool	brome/alfalfa
BA8	021	004	121	1	15	310367	5042089	1320	02	1	-	14		08-May-00	12-Jun-00	9	cool	brome/alfalfa
BA8	021	006	121	1	15	310558	5042121	1320	02	3	1	14	raccoon	10-May-00	14-Jun-00	7	cool	brome/alfalfa
BA8	021	008	121	1	15	310584	5042040	1320	02	1	-	14		22-Apr-00	27-May-00	25	cool	brome/alfalfa
BA8	021	012	121	1	15	310403	5042053	1400	02	3	6	14		**********	**********	**********	cool	brome/alfalfa
BA8	032	001	121	1	15	309159	5042997	1320	02	3	1	14	raccoon	01-May-00	09-Jun-00	10	cool	brome/timothy/alfalfa
BA8	032	003	121	1	15	309146	5043059	1320	02	1	-	14		30-Apr-00	04-Jun-00	17	cool	brome/timothy
BA8	036	001	121	7	15	317939	5044687	1320	02	3	1	14	raccoon	08-May-00	12-Jun-00	9	native	
BA8	036	002	121	1	15	310466	5043970	1320	02	3	1	14	skunk	25-Apr-00	30-May-00	22	cool	brome/timothy/alfalfa/wheat grass
BA8	036	003	121	1	15	310647	5044040	1400	02	3	1	14	unknown	20-May-00	23-Jun-00	6	cool	brome
BA8	036	004	121	1	15	310598	5043961	1400	02	1	-	14		03-May-00	09-Jun-00	14	native	alfalfa
BA8	036	006	121	1	15	310567	5043856	1320	02	3	1	14	fox	11-May-00	15-Jun-00	6	cool	alfalfa
BA8	036	008	121	1	15	310471	5043505	1320	02	3	6	14		***********	**********	**********	cool	brome
BA8	036	101	121	1	15	310382	5043894	1320	02	3	1	14	unknown	27-May-00	27-Jun-00	25	cool	alfalfa/timothy/brome
BA9	001	002	121	1	15	311539	5041328	1400	02	3	1	14	unsure--mink/weasel	04-May-00	08-Jun-00	14	cool	brome
BA9	001	004	121	1	15	311450	5041320	1320	02	3	6	14		**********	**********	**********	cool	brome
BA9	001	006	121	1	15	311400	5041382	1400	02	1	-	14		07-May-00	13-Jun-00	11	cool	brome
BA9	012	001	121	1	15	311307	5042597	1400	02	2	9	14	hen died of natural causes	06-May-00	11-Jun-00	12	cool	brome
BA9	012	002	121	1	15	311859	5042511	1320	02	1	-	14		14-Apr-00	19-May-00	34	native/switch	
BA9	012	004	121	1	15	311646	5042492	1320	02	1	-	14		30-Apr-00	03-Jun-00	19	native/switch	
BA9	P12	001	121	1	15	311209	5043722	1400	02	5	-	32		09-May-00	13-Jun-00	9	cool	
BS9	B53	006	11	1	14	704736	5022691	1320	02	1	-	32		24-Apr-00	29-May-00	8	native	
BS9	B53	008	11	1	14	704610	6022761	1320	02	3	1	32	unknown	18-Apr-00	23-May-00	14	native	
BS9	B53	050	11	7	14	704518	5023083	1320	02	2	6	32		30-Apr-00	04-Jun-00	2	cool	brome/sweet clover/forbs
BS9	B53	138	11	1	14	705281	5023098	1320	02	3	1	32	unsure--mink/crow	31-May-00	07-Jul-00	6	cool	brome/kentucky blue/alfalfa
BS9	B53	140	11	1	14	705238	5023038	1400	03	3	1	32	unknown	26-May-00	28-Jun-00	11	cool/native	brome
BS9	B53	142	11	1	14	704818	5023055	1320	02	3	1	32	unknown	22-May-00	28-Jun-00	15	cool	brome/forbs
BS9	B53	146	11	1	14	704782	5022658	1320	02	1	-	32		15-May-00	17-Jun-00	22	native	intermediate wheat grass
BS9	B53	148	11	1	14	704782	5022658	1320	02	1	-	32		17-May-00	17-Jun-00	20	native	intermediate wheat grass
BS9	B53	150	11	10	14	704798	5022489	1320	08	3	1	32	unknown	15-May-00	19-Jun-00	22	wetland veg.	
BS9	B53	152	11	1	14	704748	5022581	1320	02	1	-	32		10-May-00	17-Jun-00	27	native	
BS9	B53	154	11	1	14	704740	5022755	1320	02	3	1	32	unsure--mink/crow	31-May-00	30-Jun-00	6	native	
BS9	B53	156	11	1	14	704666	5022748	1320	02	3	1	32	skunk	25-May-00	25-Jun-00	12	native	
BS9	B53	158	11	1	14	704646	5022922	1320	02	1	-	32		17-May-00	20-Jun-00	20	native	
BS9	B57	001	11	1	14	705867	5024406	1320	02	1	-	32		22-Apr-00	27-May-00	9	cool	brome
BS9	B57	002	11	1	14	704626	5024687	1320	02	1	-	32		24-Apr-00	29-May-00	7	cool	brome
BS9	B57	003	11	1	14	705029	5024645	1320	02	2	6	32		01-May-00	05-Jun-00	0	cool	brome
BS9	B57	004	11	1	14	705512	5024248	1320	02	1	-	32		23-Apr-00	28-May-00	8	cool	brome
BS9	B57	005	11	1	14	705440	5024168	1320	02	3	1	32	unknown	18-Apr-00	23-May-00	13	cool	brome
BS9	B57	006	11	1	14	704742	5024171	1320	02	1	-	32		16-Apr-00	21-May-00	15	wetland veg.	reed/canary grass
BS9	B57	007	11	1	14	705269	5023306	1320	02	3	1	32	raccoon	25-Apr-00	30-May-00	15	cool	brome
BS9	B57	050	11	10	14	704711	5024569	1320	02	3	1	32	badger	23-Apr-00	28-May-00	8	cool	
BS9	B57	051	11	1	14	704876	5023553	1320	02	3	1	32	badger	17-Apr-00	22-May-00	14	cool	brome
BS9	B57	101	11	10	14	705247	5024486	1320	09	1	-	32		02-May-00	05-Jun-00	34	wetland veg.	reed/canary grass
BS9	B57	102	11	1	14	705725	5024753	1320	02	3	1	32	raccoon	03-May-00	06-Jun-00	30	cool	
BS9	B57	103	11	10	14	705230	5024515	1320	09	1	-	32		05-May-00	06-Jun-00	31	wetland veg.	reed/canary grass
BS9	B57	104	11	1	14	705487	5024750	1400	02	1	-	32		18-May-00	22-Jun-00	15	cool	
BS9	B57	105	11	10	14	705302	6024519	1320	09	3	1	32	skunk	31-May-00	03-Jul-00	6	wetland veg.	cattails
BS9	B57	106	11	1	14	704776	5024745	1400	02	3	1	32	badger	11-May-00	15-Jun-00	25	cool	kentucky blue/brome
BS9	B57	107	11	10	14	705395	5024391	1320	09	1	-	32		06-May-00	06-Jun-00	30	wetland veg.	slough grass/cattails
BS9	B57	108	11	1	14	704750	5024700	1400	02	1	-	32		04-May-00	08-Jun-00	32	cool	brome
BS9	B57	109	11	1	14	704540	5024422	1350	02	2	9	32		25-May-00	29-Jun-00	11	cool	brome
BS9	B57	110	11	1	14	704738	5024743	1320	02	3	1	32	raccoon	28-May-00	01-Jul-00	8	cool	brome
BS9	B57	111	11	1	14	704342	5024387	1350	02	3	1	32	fox	25-May-00	29-Jun-00	11	cool	
BS9	B57	112	11	1	14	705644	5024656	1320	02	3	1	32	skunk	29-May-00	21-Jun-00	7	cool	
BS9	B57	113	11	1	14	704087	5024621	1350	02	3	1	32	raccoon	27-May-00	29-Jun-00	9	cool	brome
BS9	B57	114	11	1	14	704641	5024647	1320	02	3	1	32	skunk	21-May-00	28-Jun-00	15	cool	
BS9	B57	115	11	1	14	704096	5024289	1400	02	1	-	32		17-May-00	18-Jun-00	19	cool	brome/w. snowberry
BS9	B57	116	11	1	14	705684	5024554	1320	02	3	1	32	FGS	25-May-00	29-Jun-00	9	cool	
BS9	B57	117	11	1	14	704788	5023424	1400	02	3	1	32	coyote	16-May-00	19-Jun-00	20	cool	brome

BS9	B57	118	11	1	14	705221	5024476	1400	02	2	9	32		25-May-00	27-Jun-00	11	cool	forbs/goldenrod
BS9	B57	119	11	1	14	704734	5023520	1400	02	1	-	32		15-May-00	16-Jun-00	21	cool	brome
BS9	B57	120	11	1	14	704906	5024375	1400	02	2	9	32		25-May-00	29-Jun-00	11	cool	
BS9	B57	121	11	1	14	704940	5023736	1400	02	3	1	32	multiple--coyote & skunk	26-May-00	27-Jun-00	10	cool	brome
BS9	B57	122	11	10	14	704471	5024225	1320	09	3	1	32	fox	27-May-00	01-Jul-00	9	wetland veg.	
BS9	B57	123	11	1	14	704666	5023685	1320	02	2	6	32		02-Jun-00	05-Jul-00	3	cool	kentucky blue
BS9	B57	124	11	1	14	704411	5024237	1400	02	1	-	32		18-May-00	19-Jun-00	18	cool	kentucky blue
BS9	B57	126	11	1	14	704309	5024216	1320	02	3	1	32	raccoon	31-May-00	04-Jul-00	5	cool	brome/kentucky blue/forbs/w. snowbe
BS9	B57	128	11	1	14	704357	5024226	1320	02	3	1	32	badger	02-Jun-00	02-Jul-00	3	cool	
BS9	B57	130	11	1	14	704528	5024228	1400	02	3	1	32	skunk	25-May-00	29-Jun-00	11	cool	brome/kentucky blue
BS9	B57	132	11	1	14	704671	5024237	1320	02	1	-	32		02-May-00	05-Jun-00	34	cool	
BS9	B57	134	11	1	14	704267	5024411	1320	02	1	-	32		30-May-00	29-Jun-00	6	cool	
BS9	B57	136	11	1	14	704185	5024523	1350	02	3	1	32	skunk	29-May-00	01-Jul-00	7	cool	forbs
BS9	B57	138	11	1	14	704548	5024123	1400	02	3	1	32	skunk	27-May-00	29-Jun-00	9	cool	
BS9	B57	140	11	1	14	704987	5023942	1320	02	3	1	32	skunk	25-May-00	25-Jun-00	11	cool	
BS9	B57	142	11	1	14	705050	5024043	1400	02	1	-	32		25-May-00	27-Jun-00	11	cool	
BS9	B57	144	11	1	14	704747	5024008	1320	09	3	1	32	fox	28-May-00	30-Jun-00	8	wetland veg.	
BS9	B57	146	11	1	14	705369	5024125	1400	02	1	-	32		01-May-00	11-Jun-00	29	cool	
BS9	MN1	001	11	1	14	703893	5024671	1320	09	1	-	51		23-Apr-00	28-May-00	15	wetland veg.	
BS9	MN1	002	11	1	14	702939	5024941	1320	02	3	1	51	unknown	28-Apr-00	02-Jun-00	10	cool	brome
BS9	MN1	101	11	1	14	703365	5024463	1400	02	1	-	51		12-May-00	15-Jun-00	33	cool	brome/forbs
BS9	MN1	103	11	1	14	703202	5024555	1320	02	3	1	51	unsure--mink/crow	19-May-00	20-Jun-00	26	cool	brome/forbs
BS9	MN1	105	11	1	14	703062	5024283	1350	02	1	-	51		24-May-00	24-Jun-00	21	cool	brome
BS9	MN1	107	11	1	14	703031	5024833	1400	02	1	-	51		05-Jun-00	08-Jul-00	9	cool	brome/kentucky blue
BS9	MN1	109	11	1	14	703031	5024833	1320	02	3	1	51	skunk	26-May-00	30-Jun-00	19	cool	brome
BS9	MN1	111	11	1	14	700880	5025004	1400	02	3	1	51	unknown	18-May-00	21-Jun-00	27	switch	
BS9	MN1	113	11	1	14	703018	5024964	1320	02	3	1	51	skunk	06-Jun-00	09-Jul-00	8	cool	brome
BS9	MN1	115	11	1	14	703441	5025037	1400	02	3	6	51		18-May-00	24-Jun-00	27	cool	brome/kentucky blue/forbs
BS9	MN5	002	11	1	14	704926	5023420	1320	02	3	1	51	raccoon	25-Apr-00	30-May-00	7	cool	brome/kentucky blue
BS9	MN5	003	11	1	14	705071	5023348	1320	02	1	-	51		27-Apr-00	01-Jun-00	15	cool	brome
BS9	MN5	004	11	1	14	705230	5023270	1320	02	5	-	51		30-Apr-00	02-Jun-00	2	cool	brome
BS9	MN5	010	11	1	14	704645	5023179	1320	02	3	1	51	skunk	17-Apr-00	22-May-00	15	cool	brome
BS9	MN5	051	11	1	14	705240	5023302	1320	02	3	1	51	multiple--coyote & skunk	30-Apr-00	02-Jun-00	11	cool	brome
BS9	MN5	052	11	1	14	705002	5023382	1320	02	3	1	51	badger	25-May-00	29-Jun-00	1	cool	
BS9	MN5	101	11	1	14	705700	5023104	1320	02	3	1	51	skunk	30-May-00	02-Jul-00	7	cool	
BS9	MN5	102	11	1	14	704926	5023439	1400	02	1	-	51		17-May-00	19-Jun-00	20	cool	brome
BS9	MN5	103	11	1	14	705616	5023180	1350	02	1	-	51		20-May-00	23-Jun-00	17	cool	
BS9	MN5	104	11	1	14	705108	5023615	1320	02	1	-	51		16-May-00	18-Jun-00	21	cool	brome
BS9	MN5	105	11	1	14	705961	5023319	1400	02	1	-	51		12-May-00	15-Jun-00	25	cool	
BS9	MN5	106	11	1	14	705108	5023615	1400	02	1	1	51		16-May-00	19-Jun-00	21	cool	brome
BS9	MN5	107	11	1	14	705819	5023374	1400	02	3	1	51	unknown	30-May-00	02-Jul-00	7	cool	
BS9	MN5	108	11	1	14	705119	5023645	1400	02	1	-	51		25-May-00	22-Jun-00	12	cool	brome/lead plant
BS9	MN5	109	11	1	14	705684	5023331	1320	02	3	1	51	skunk	04-May-00	07-Jun-00	33	cool	
BS9	MN5	110	11	1	14	705048	5023507	1320	02	3	1	51	unsure--skunk/raccoon	24-May-00	26-Jun-00	13	cool/native	brome
BS9	MN5	111	11	1	14	705650	5023305	1400	02	3	1	51	unsure--skunk/raccoon	15-May-00	16-Jun-00	22	cool	
BS9	MN5	112	11	1	14	705213	5023453	1320	02	3	1	51	unsure--skunk/raccoon	01-Jun-00	03-Jul-00	5	cool/native	brome
BS9	MN5	114	11	1	14	705116	5023353	1320	02	3	1	51	badger	27-May-00	30-Jun-00	10	cool	brome
BS9	MN5	116	11	1	14	705227	5023455	1400	02	1	-	51		02-Jun-00	03-Jul-00	4	cool/native	kentucky blue
BS9	MN5	118	11	1	14	705227	5023455	1400	02	1	-	51		08-May-00	11-Jun-00	29	cool/native	brome/kentucky blue
BS9	MN5	120	11	1	14	705400	5023526	1320	02	3	1	51	unknown	27-May-00	28-Jun-00	10	cool/native	brome/w. snowberry
BS9	MN5	122	11	1	14	705347	5023510	1400	02	1	-	51		24-May-00	27-Jun-00	13	cool/native	brome/w. snowberry
BS9	MN5	124	11	1	14	705070	5023276	1350	02	1	-	51		21-May-00	25-Jun-00	16	cool/native	brome
BS9	MN5	126	11	1	14	705413	5023424	1400	02	1	-	51		28-May-00	30-Jun-00	9	cool	kentucky blue
BS9	MN5	128	11	1	14	705391	5023361	1400	02	1	-	51		05-Jun-00	09-Jul-00	1	cool	kentucky blue
BS9	MN5	130	11	1	14	705420	5023398	1400	02	1	-	51		17-May-00	29-Jun-00	20	cool	brome
BS9	MN5	132	11	1	14	705416	5023352	1400	02	3	1	51	coyote	31-May-00	03-Jul-00	6	cool/native	kentucky blue/brome
BS9	MN5	134	11	1	14	705309	5023150	1400	02	1	-	51		26-May-00	30-Jun-00	11	cool/native	brome/alfalfa
BS9	MN5	136	11	1	14	705413	5023243	1400	02	1	-	51		26-May-00	30-Jun-00	11	cool	kentucky blue/alfalfa
BS9	MN5	144	11	1	14	704779	5023122	1320	02	2	9	51		02-Jun-00	05-Jul-00	4	cool	brome/sweet clover/alfalfa
CF5	085	001	121	1	15	317716	5044548	1320	02	3	1	14	fox	23-Apr-00	28-May-00	23	cool	alfalfa
CF5	085	003	121	1	15	317961	5044669	1320	02	3	1	14	fox	08-May-00	12-Jun-00	8	cool	alfalfa
CF5	088	002	121	3	15	319544	5044333	1400	02	3	1	14	skunk	09-May-00	13-Jun-00	7	cool	

CF7	108	002	121	1	15	316158	5043036	1400	02	3	1	14	mink	06-May-00	10-Jun-00	9	cool	brome
CL9	SW4	001	151	10	15	311002	5022607	1400	09	3	1	32	unknown	04-May-00	08-Jun-00	5	wetland veg.	
CL9	SW4	002	151	1	15	310525	5022134	1320	02	3	1	32	badger	12-Apr-00	17-May-00	31	cool	kentucky blue
CL9	SW4	102	151	1	15	310966	5021951	1320	02	1	-	32		02-Jun-00	05-Jul-00	13	cool	brome/kentucky blue
CL9	SW4	161	151	1	15	310480	5021771	1320	02	1	-	32		28-May-00	01-Jul-00	18	cool	brome/kentucky blue
CL9	SW4	201	151	1	15	310822	5022902	1320	02	1	-	32		28-May-00	01-Jul-00	18	cool	kentucky blue
CL9	SW4	203	151	1	15	310932	5023113	1320	03	1	-	32		02-Jun-00	05-Jul-00	13	cool	forbs/kentucky blue/sweet clover
CL9	SW4	205	151	1	15	310719	5021764	1400	02	3	1	32	badger	09-Jun-00	12-Jul-00	6	cool	brome/kentucky blue
FAH	602	002	151	2	15	305671	5030548	1360	03	1	-	32		30-Apr-00	04-Jun-00	14	alfalfa	alfalfa
FAH	602	004	151	2	15	305730	5030660	1320	03	2	8	32		14-May-00	18-Jun-00	2	cool	brome/alfalfa
FAH	602	102	151	2	15	305743	5030813	1320	03	3	1	32	mink	12-Jun-00	14-Jul-00	7	cool	hay/forbs/brome
FR2	703	002	149	2	15	278270	5058911	1400	03	3	1	32	skunk	16-May-00	20-Jun-00	9	alfalfa	alfalfa
GI2	134	002	121	1	15	319759	5039327	1320	02	1	-	14		03-May-00	07-Jun-00	9	cool	
GI2	134	004	121	1	15	319008	5038948	1320	02	3	1	14	unknown	11-May-00	15-Jun-00	1	cool	
GI2	134	006	121	1	15	319857	5039112	1400	02	1	-	14		05-May-00	10-Jun-00	11	cool	brome
GI2	134	101	121	1	15	319909	5039492	1400	02	3	1	14	fox	31-May-00	03-Jul-00	19	cool	brome/kentucky blue
GI2	134	102	121	1	15	319119	5038952	1400	02	1	-	14		28-May-00	01-Jul-00	22	cool	brome/kentucky blue/forbs
GI2	134	103	121	1	15	319977	5039469	1400	02	3	1	14	fox	10-Jun-00	13-Jul-00	9	cool	brome/kentucky blue
GI2	138	002	121	1	15	320444	5040135	1400	02	3	1	32	fox	09-May-00	13-Jun-00	6	native	
GI2	138	004	121	10	15	320304	5040556	1400	02	3	1	32	fox	06-May-00	10-Jun-00	9	warm	sedges
GI2	138	006	121	1	15	320471	5040431	1320	02	3	1	32	fox	06-May-00	10-Jun-00	9	native	
GI2	138	008	121	1	15	320459	5040400	1400	02	3	1	32	skunk	07-May-00	11-Jun-00	8	native	
GI2	138	010	121	1	15	320516	5040218	1400	02	3	1	32	skunk	06-May-00	10-Jun-00	9	cool	exotics
GI2	138	101	121	1	15	320391	5040399	1400	02	3	1	32	skunk	04-Jun-00	07-Jul-00	15	native	
GI2	138	102	121	1	15	320417	5040221	1400	02	3	1	32	skunk	29-May-00	01-Jul-00	21	cool/native	brome
GI2	138	103	121	1	15	320277	5039730	1400	02	1	-	32		07-Jun-00	08-Jul-00	12	cool	brome/forbs
GI2	138	104	121	1				1400	02	3	1	32	unknown	03-Jun-00	05-Jul-00	16	native	brome
GI2	138	105	121	1	15	320277	5039730	1400	02	3	6	32		03-Jun-00	07-Jul-00	16	cool	brome/forbs
GI2	138	107	121	1	15	320243	5039763	1400	02	1	-	32		05-Jun-00	06-Jul-00	14	cool	brome
GI5	145	001	121	7	15	320350	5036198	1320	02	3	1	14	unsure-- mink/crow	05-May-00	09-Jun-00	13	cool	brome/goldenrod
GI5	146	002	121	10	15	320338	5035955	1320	09	3	1	14	crow	03-May-00	08-Jun-00	12	wetland veg.	
GI5	147	001	121	1	15	319965	5035249	1320	02	3	1	14	unknown	06-May-00	10-Jun-00	9	cool	
GI5	147	003	121	1	15	319891	5035416	1320	02	3	1	14	skunk	09-May-00	13-Jun-00	6	cool	
H02	701	002	149	1	15	279874	5049614	1320	02	1	-	32		21-Apr-00	25-May-00	34	native	
H02	701	004	149	1	15	279834	5049574	1400	02	1	-	32		21-May-00	24-Jun-00	4	native	
H02	701	006	149	1	15	279874	5049614	1320	02	1	-	32		20-Apr-00	25-May-00	35	native	
H02	701	008	149	1	15	279874	5049614	1320	02	1	-	32		19-Apr-00	02-Jun-00	29	native	
H02	701	010	149	1	15	279874	5049614	1320	02	1	-	32		20-Apr-00	25-May-00	27	native	
H02	701	012	149	1	15	279699	5049479	1320	02	1	-	32		30-Apr-00	04-Jun-00	28	native	
H02	701	014	149	1	15	279851	5049665	1320	02	1	-	32		12-May-00	16-Jun-00	16	native	
H02	701	016	149	1	15	279837	5049646	1320	02	1	-	32		03-May-00	03-Jun-00	22	native	
H02	701	018	149	1	15	279837	5049646	1320	02	1	-	32		22-Apr-00	27-May-00	33	native	
H02	701	020	149	1	15	279874	5049614	1320	02	1	-	32		02-May-00	06-Jun-00	26	native	
H02	701	022	149	1	15	279874	5049614	1320	02	1	-	32		28-Apr-00	02-Jun-00	30	native	
H02	701	024	149	1	15	279874	5049614	1400	02	1	-	32		23-May-00	25-Jun-00	2	native	
H02	701	026	149	1	15	279874	5049614	1320	02	1	-	32		04-May-00	08-Jun-00	24	native	
H02	701	028	149	1	15	279834	5049574	1400	02	1	-	32		26-May-00	23-Jun-00	11	native	
H02	701	030	149	1	15	279806	5049597	1400	02	1	-	32		31-May-00	04-Jul-00	9	native	
H02	701	034	149	1	15	279827	5049544	1320	02	1		32		19-Jun-00	24-Jul-00	4	native	
H02	701	036	149	1	15	279721	5049473	1320	02	1	-	32		14-Jun-00	19-Jul-00	9	native	
H02	701	102	149	1	15	279868	5049613	1320	02	1	-	32		26-May-00	28-Jun-00	31	native	
H02	701	104	149	1	15	279898	5049634	1320	02	1	-	32		10-Jun-00	12-Jul-00	16	native	
H02	701	199	149	1	15	279840	5049605	1400	02	3	9	32		**********	**********	**********	**********	
H02	702	001	149	1	15	277836	5051284	1400	02	1	-	32		24-May-00	27-Jun-00	1	cool	kentucky blue
H02	702	003	149	1	15	277909	5051540	1400	02	3	1	32		24-May-00	28-Jun-00	1	cool	kentucky blue
MON	601	002	151	8	15	320105	5020641	1400	02	2	-	32		05-May-00	09-Jun-00	5	cool	
OT7	267	005	11	1	14	706480	5023371	1320	02	1	-	14		25-Apr-00	30-May-00	8	wetland veg.	reed/canary grass
OT7	267	101	11	1	14	706593	5023346	1320	02	1	-	14		17-May-00	18-Jun-00	22	cool/native	brome

OT7	267	102	11	1	14	706517	5023921	1400	02	1	-	14		16-May-00	19-Jun-00	27	cool	brome/alfalfa
OT7	267	103	11	1	14	706590	5023263	1400	02	3	1	14	unsure--mink/crow	03-Jun-00	05-Jul-00	5	cool/native	brome
OT7	274	011	11	1	14	709016	5024543	1320	02	3	1	14	raccoon	26-Apr-00	31-May-00	8	cool	brome
OT7	279	003	11	10	14	708308	5023106	1320	09	1	-	14		26-Apr-00	31-May-00	7	wetland veg.	reed/canary grass
OT7	279	005	11	1	14	708455	5023025	1320	09	1	-	14		24-Apr-00	29-May-00	10	wetland veg.	reed/canary grass
OT7	279	007	11	1	14	708521	5022858	1320	09	3	1	14	fox	26-Apr-00	31-May-00	8	wetland veg.	reed/canary grass
OT7	279	101	11	1	14	708308	5023156	1320	02	2	9	14		03-Jun-00	02-Jul-00	5	cool	brome
OT7	279	103	11	1	14	708416	5022992	1400	02	1	-	14		13-May-00	18-Jun-00	26	cool	brome/reed canary grass
OT7	279	105	11	1	14	708321	5022991	1320	02	1	-	14		22-May-00	24-Jun-00	17	cool	brome/kentucky blue
OT7	MN2	001	11	1	14	706152	5022956	1320	02	3	1	51	badger	25-Apr-00	30-May-00	7	cool	kentucky blue/w. snowberry
OT7	MN2	002	11	1	14	707108	5023791	1320	02	3	1	51	skunk	28-Apr-00	02-Jun-00	5	cool	brome
OT7	MN2	003	11	1	14	708058	5023156	1320	02	1	-	51		22-Apr-00	28-May-00	11	cool	brome/forbs
OT7	MN2	004	11	1	14	707105	5023791	1320	02	1	-	51		29-Apr-00	03-Jun-00	5	cool	brome
OT7	MN2	009	11	8	14	707404	5022425	1320	03	3	1	51	toss out!	03-May-00	07-Jun-00	1	cool	brome
OT7	MN2	011	11	1	14	706215	5022396	1320	02	2	9	51		25-Apr-00	30-May-00	9	cool	brome/sweet clover
OT7	MN2	101	11	8	unknown	unknown	unknown	1320	02	1		51		14-May-00	16-Jun-00	24	cool	
OT7	MN2	102	11	1	14	707533	5022428	1400	02	3	1	51	raccoon	23-May-00	27-Jun-00	15	cool	brome/kentucky blue/forbs
OT7	MN2	103	11	7	14	707729	5023351	1400	02	3	1	51	raccoon	26-May-00	28-Jun-00	12	cool	
OT7	MN2	104	11	1	14	707821	5022560	1320	02	3	1	51	unknown	23-May-00	27-Jun-00	15	cool	brome/kentucky blue
OT7	MN2	105	11	7	14	707714	5023351	1350	02	3	1	51	skunk	27-May-00	30-Jun-00	11	cool	
OT7	MN2	106	11	1	14	707649	5022568	1320	02	3	1	51	skunk	30-May-00	04-Jul-00	8	cool	kentucky blue/w. snowberry/forbs
OT7	MN2	107	11	1	14	707381	5023245	1400	02	3	1	51	fox	26-May-00	27-Jun-00	12	cool	
OT7	MN2	108	11	1	14	707670	5022836	1400	02	1		51		19-May-00	21-Jun-00	19	cool	kentucky blue/w. snowberry
OT7	MN2	109	11	8	14	707080	5022416	1320	02	3	1	51	skunk	01-Jun-00	05-Jul-00	6	cool	exotic
OT7	MN2	110	11	1	14	707680	5022836	1400	02	1	-	51	unsure--skunk/raccon	25-May-00	29-Jun-00	13	cool	kentucky blue/w. snowberry/white flow
OT7	MN2	111	11	1	14	706599	5022478	1320	02	3	1	51		28-May-00	30-Jun-00	10	cool	
OT7	MN2	112	11	1	14	707232	5022685	1400	02	1	-	51		02-May-00	25-Jun-00	16	cool	brome
OT7	MN2	114	11	1	14	707099	5022435	1400	02	3	1	51	unsure--skunk/raccon	11-May-00	14-Jun-00	30	cool	brome/forbs
OT7	MN2	116	11	1	14	707053	5022902	1320	02	3	1	51	skunk	30-May-00	04-Jul-00	8	cool	brome
OT7	MN2	118	11	1	14	707024	5022524	1320	02	1	-	51		05-Jun-00	01-Jul-00	2	cool	forbs
OT7	MN2	120	11	1	14	707129	5023080	1320	02	3	1	51	unsure--mink/crow	24-May-00	28-Jun-00	13	cool	brome
OT7	MN2	122	11	1	14	707121	5023115	1400	02	3	1	51	unsure--skunk/raccon	30-May-00	30-Jun-00	9	cool	
OT7	MN2	124	11	10	14	707395	5023984	1400	08	3	1	51	skunk	24-May-00	28-Jun-00	14	wetland veg.	
OT7	MN2	126	11	1	14	707407	5023963	1400	02	3	1	51	skunk	20-May-00	24-Jun-00	19	cool	
OT7	MN2	128	11	1	14	707467	5023976	1400	02	3	1	51	coyote	01-Jun-00	06-Jul-00	7	cool	forbs/bluegrass
OT7	MN2	130	11	1	14	707714	5023790	1400	02	1	-	51		07-May-00	11-Jun-00	32	cool	
OT7	MN2	132	11	1	14	707573	5023737	1400	01			51	unknown--no predator card	15-May-00	18-Jun-00	25	cool	forbs/grass
OT7	MN2	134	11	1	14	707027	5023452	1400	02	3	1	51	badger	08-May-00	12-Jun-00	21	cool	
OT7	MN2	136	11	1	14	707231	5023376	1400	02	3	1	51	raccoon	01-Jun-00	06-Jul-00	7	cool	
OT7	MN2	140	11	1	14	707144	5023061	1400	02	3	1	51	badger	31-May-00	04-Jul-00	16	cool	kentucky blue/forbs
OT7	MN2	142	11	1	unknown	unknown	unknown	1400	02	3	1	51	unsure--skunk/raccon	08-Jun-00	13-Jul-00	14	cool	
OT8	281	102	11	1	14	709725	5024342	1400	02	3	1	14	skunk	24-May-00	25-Jun-00	19	cool/native	brome/forbs
OT8	281	104	11	1	14	709762	5024394	1400	02	1	-	14		04-Jun-00	08-Jul-00	8	cool/native	brome/forbs
OT8	281	106	11	1	14	709762	5024394	1400	02	3	1	14	raccoon	07-Jun-00	12-Jul-00	5	cool/native	brome/forbs
OT8	281	108	11	1	14	709750	5024512	1350	02	3	1	14	raccoon	01-Jun-00	06-Jul-00	11	cool/native	brome/forbs
OT8	281	110	11	1	14	709828	5024515	1320	02	1	-	14		12-May-00	13-Jun-00	31	cool/native	brome/forbs
OT8	281	112	11	1	14	709833	5024629	1350	02	3	1	14	raccoon	06-Jun-00	11-Jul-00	6	cool/native	brome/forbs
OT8	281	114	11	1	14	712494	5025878	1320	02	1		14		10-May-00	11-Jun-00	33	cool/native	brome/forbs
OT8	281	116	11	1	14	709902	5024371	1320	02	1	-	14		14-May-00	16-Jun-00	29	cool/native	brome/forbs
OT8	281	118	11	1	14	709902	5024371	1400	02	1	-	14		08-May-00	11-Jun-00	35	cool/native	brome/forbs
OT8	281	120	11	1	14	710033	5024126	1320	02	1	-	14		15-May-00	17-Jun-00	28	native	
OT8	281	122	11	1	14	710037	5025184	1350	02	3	1	14	unsure--skunk/raccon	31-May-00	06-Jul-00	12	cool	brome
OT8	281	124	11	1	14	710126	5025032	1400	02	3	1	14	unsure--skunk/raccon	29-May-00	01-Jul-00	14	cool	brome
OT8	281	126	11	1	14	710057	5025124	1400	02	1	-	14		10-May-00	12-Jun-00	33	cool	brome
OT8	281	128	11	1	14	710057	5025124	1320	02	1	-	14		27-May-00	28-Jun-00	16	cool	
OT8	281	130	11	1	14	710003	5025182	1400	02	1	-	14		28-May-00	29-Jun-00	15	cool	brome
OT8	B02	001	11	1	14	712690	5023250	1320	02	3	1	32	multiple--unknown	30-Apr-00	04-Jun-00	5	cool	brome
OT8	B02	002	11	1	14	712829	5022798	1320	02	3	1	32	unknown	26-Apr-00	31-May-00	9	cool	brome

OT8	B02	003	11	1	14	712582	5023341	1320	02	3	1	32	badger	29-Apr-00	03-Jun-00	6	cool	brome
OT8	B02	004	11	1	14	712791	5022896	1320	02	3	1	32	badger	30-Apr-00	04-Jun-00	5	cool	brome
OT8	B02	006	11	1	14	712791	5022896	1320	02	3	1	32	skunk	29-Apr-00	03-Jun-00	6	cool	brome
OT8	B02	008	11	1	14	712689	5022677	1320	02	2	9	32		03-May-00	05-Jun-00	2	cool/native	brome
OT8	B02	110	11	1	14	712641	5023044	1320	02	1	-	32		29-Apr-00	03-Jun-00	6	cool	brome
OT8	B02	012	11	1	14	712644	5022917	1320	02	3	1	32	raccoon	28-Apr-00	02-Jun-00	7	cool	brome/kentucky blue/forbs
OT8	B02	014	11	1	14	712545	5022779	1320	02	3	1	32	coyote	20-Apr-00	25-May-00	17	native	
OT8	B02	016	11	10	14	712388	5023257	1320	09	3	1	32	raccoon	30-Apr-00	04-Jun-00	5	cool	brome
OT8	B02	018	11	10	14	712300	5023112	1320	09	3	1	32	multiple--coyote & raccoon	25-Apr-00	30-May-00	11	wetland veg.	cattails
OT8	B02	101	11	1	14	712452	5023329	1320	02	3	1	32	raccoon	08-Jun-00	13-Jul-00	6	cool	kentucky blue/forbs
OT8	B02	102	11	1	14	712806	5022751	1400	02	1	-	32		04-Jun-00	09-Jul-00	10	cool	brome
OT8	B02	103	11	10	14	712478	5023331	1350	03	3	1	32	unsure--mink/crow	04-Jun-00	09-Jul-00	10	wetland veg.	thistle/cattail
OT8	B02	104	11	1	14	712899	5022828	1400	02	3	1	32	badger	07-Jun-00	12-Jul-00	7	cool	brome/kentucky blue
OT8	B02	105	11	1	14	712375	5022649	1400	02	3	1	32	raccoon	11-May-00	15-Jun-00	23	cool	brome
OT8	B02	106	11	1	14	712895	5022884	1400	02	1	-	32		10-Jun-00	15-Jul-00	4	cool	brome
OT8	B02	108	11	1	14	712797	5022859	1350	02	3	1	32	unsure--skunk/raccoon	19-May-00	21-Jun-00	26	cool	brome/kentucky blue
OT8	B02	110	11	1	14	712720	5022680	1320	02	3	1	32	raccoon	09-Jun-00	14-Jul-00	5	cool	
OT8	B02	112	11	1	14	712579	5022823	1400	02	3	1	32	unknown	18-May-00	20-Jun-00	27	cool	brome/kentucky blue
OT8	B02	114	11	1	14	712580	5022859	1400	02	1	-	32		10-May-00	15-Jun-00	35	cool	brome
OT8	B02	116	11	1	14	712599	5022953	1320	02	3	1	32	badger	09-Jun-00	09-Jul-00	5	cool	brome
OT8	B02	118	11	1	14	712619	5023054	1320	02	1	-	32		14-May-00	15-Jun-00	31	cool	forbs
OT8	B02	120	11	1	14	712614	5023048	1400	02	1	-	32		10-Jun-00	15-Jul-00	4	cool	
OT8	B02	122	11	1	14	712582	5022866	1320	02	1	-	32		18-May-00	18-Jun-00	27	cool	brome
OT8	B02	124	11	1	14	712580	5022793	1320	02	1	-	32		09-Jun-00	14-Jul-00	5	native	
OT8	B02	126	11	1	14	712503	5023015	1320	02	3	1	32	unknown	13-Jun-00	18-Jul-00	1	native	
OT8	B02	128	11	1	14	712511	5023044	1350	03	3	1	32	unknown	05-Jun-00	10-Jun-00	9		forbs
OT8	B02	130	11	1	14	712590	5023232	1400	02	2	8	32		13-Jun-00	18-Jul-00	1	cool	brome
OT8	B02	132	11	1	14	712529	5023116	1460	02	3	1	32	badger	29-May-00	01-Jul-00	16		forbs
OT8	B02	134	11	1	14	712475	5022772	1400	02	1	-	32		19-May-00	21-Jun-00	26	cool	
OT8	B02	136	11	1	14	712395	5022480	1320	03	3	1	32	unsure--skunk/raccoon	07-Jun-00	12-Jul-00	7		leafy spurge
OT8	B02	138	11	1	14	712485	5023204	1350	03	3	1	32	badger	31-May-00	03-Jul-00	14		forbs
OT8	B02	140	11	1	14	712343	5023192	1350	03	3	1	32	multiple--mink&?	05-Jun-00	10-Jul-00	9	alfalfa	forbs
OT8	B02	142	11	1	14	702277	5022659	1400	2	5		32		29-May-00	30-Jun-00	16	cool	
OT8	B02	144	11	1	14	712208	5022907	1400	02	2	6	32	fox	13-Jun-00	18-Jul-00	1	cool	
OT8	B02	146	11	1	14	712186	5022613	1400	02	1	-	32		11-May-00	14-Jun-00	35	cool	brome
OT8	B02	148	11	1	14	712102	5022736	1400	02	1		32		14-May-00	15-Jun-00	31	cool	
OT8	B02	198	11	1	14	712508	5022813	1400	02	1		32		24-Jun-00	17-Jul-00	6	cool	
OT8	B02	199	11	1	15	320414	5040400	1320	02	3	1	32	fox	15-Jun-00	13-Jul-00	14	cool	brome
OT8	B02	201	11	1	14	712508	5022813	1320	02	3	1	32	raccoon	19-Jun-00	24-Jul-00	4	native	
OT8	B12	005	11	1	14	712705	5025147	1320	02	1	-	32		29-Apr-00	03-Jun-00	6	cool	brome
OT8	B12	007	11	1	14	712838	5025469	1320	02	1	-	32		01-Apr-00	06-May-00	34	cool/native	brome
OT8	B12	009	11	1	14	712621	5025545	1320	02	1	-	32		12-Apr-00	17-Apr-00	23	cool/native	brome
OT8	B12	011	11	1	14	712706	5025652	1320	02	1	-	32		10-Apr-00	15-May-00	25	cool/native	brome
OT8	B12	013	11	1	14	712805	5025673	1320	02	3	1	32	unsure--mink/weasel	20-Apr-00	17-May-00	27	cool	brome
OT8	B12	020	11	1	14	712793	5025422	1400	02	3	1	32	skunk	12-May-00	16-Jun-00	7	cool/native	brome
OT8	B12	021	11	1	14	712598	5025510	1320	02	3	1	32	skunk	09-May-00	13-Jun-00	10	cool/native	brome
OT8	B12	22	11	1	14	712851	5025614	1320	02	1	-	32		27-May-00	01-Jul-00	22	cool/native	brome
OT8	B12	023	11	1	14	712852	5025561	1320	02	3	1	32	skunk	09-May-00	12-Jun-00	13	cool/native	brome
OT8	B12	031	11	1	14	712509	5025851	1320	02	3	1	32	coyote	24-Apr-00	30-May-00	11	native	
OT8	B12	101	11	1	14	712534	5025597	1400	2	3	1	32	unknown	04-Jun-00	27-Jun-00	8	cool	brom
OT8	B12	103	11	1	14	712438	5025732	1400	02	1	-	32		18-May-00	20-Jun-00	25	cool	brome
OT8	B12	105	11	1	14	712474	5025804	1400	02	3	1	32	raccoon	03-Jun-00	08-Jun-00	9	native	
OT8	B12	107	11	1	14	712346	5025811	1400	02	3	1	32	unknown	11-May-00	15-Jun-00	32	native	
OT8	B12	109	11	1	14	712236	5025859	1400	02	1	-	32		17-May-00	19-Jun-00	26	cool/native	brome/kentucky blue
PE5	S03	002	149	1	14	727118	5056199	1400	02	3	1	32	fox	25-May-00	29-Jun-00	6	cool	brome
PE5	S03	004	149	1	14	727121	5056046	1400	02	2	1	32	unknown	17-May-00	20-Jun-00	14	cool	brome
PE5	S03	006	149	1	14	727177	5055943	1400	02	3	1	32	fox	12-May-00	16-Jun-00	19	cool	brome
PE5	S03	008	149	1	14	727081	5056166	1320	02	3	1	32	unknown	25-May-00	29-Jun-00	6	cool	brome/kentucky blue/w. snowberry
PE5	S03	101	149	1	14	727076	5056232	1400	02	3	1	32	fox	06-Jun-00	11-Jul-00	21	cool	brome
PE5	S03	103	149	1	14	727056	5056261	1400	02	3	6	32		24-Jun-00	30-Jul-00	3	cool	brome
PE5	S03	105	149	1	14	727475	5056498	1400	02	1	-	32		11-Jun-00	13-Jul-00	16	cool	brome
PE5	S03	107	149	1	14	727726	5056609	1400	02	3	1	32	unknown	20-Jun-00	25-Jul-00	7	cool	brome/forbs

PE5	S03	109	149	1	14	727599	5056649	1320	03	1	-	32		13-Jun-00	17-Jul-00	14	cool	brome/forbs
PE5	S45	001	149	10	14	729500	5058117	1400	08	3	1	32	badger	20-May-00	24-Jun-00	10	wetland veg.	
PE5	S45	002	149	1	14	730130	5055334	1400	02	2	9	32		10-May-00	15-Jun-00	20	native	
PE5	S45	003	149	10	14	729594	5058080	1400	08	3	1	32	skunk	27-May-00	01-Jul-00	3	wetland veg.	cattails
PE5	S45	004	149	1	14	730225	5055550	1400	02	3	1	32	skunk	13-May-00	17-Jun-00	17	cool	brome
PE5	S45	005	149	1	14	729765	5058091	1400	02	3	1	32	unknown	11-May-00	15-Jun-00	19	cool	brome/forbs
PE5	S45	006	149	1	14	730245	5055753	1400	02	1	-	32		24-May-00	28-Jun-00	6	native	
PE5	S45	007	149	10	14	730127	5058097	1320	10	1	-	32		23-May-00	24-Jun-00	8	wetland veg.	cattails
PE5	S45	008	149	1	14	730205	5055748	1400	02	3	1	32	unsure--weasel/FGS	21-May-00	25-Jun-00	9	cool/switch	brome/kentucky blue
PE5	S45	009	149	1	14	729981	5058010	1350	02	3	1	32	fox	20-May-00	25-Jun-00	10	cool	brome/forbs
PE5	S45	010	149	1	14	730037	5055641	1400	2	3	1	32	unknown	25-May-00	27-Jun-00	5	native	
PE5	S45	011	149	1	14	730022	5057894	1400	02	3	1	32	skunk	29-May-00	03-Jul-00	1	cool	
PE5	S45	012	149	1	14	730010	5055508	1400	02	3	1	32	skunk	15-May-00	19-Jun-00	15	cool	brome/quack
PE5	S45	013	149	1	14	730022	5057894	1400	01	3	1	32	unsure--skunk/raccoon	19-May-00	22-Jun-00	11	cool	
PE5	S45	014	149	1	14	729915	5056038	1400	02	3	1	32	FGS	26-May-00	30-Jun-00	4	cool	brome/kentucky blue
PE5	S45	015	149	10	14	729939	5057948	1400	08	3	1	32	raccoon	15-May-00	19-Jun-00	15	wetland veg.	intermediate upland forbs
PE5	S45	016	149	1	14	729874	5055972	1320	02	3	1	32	badger	22-May-00	26-Jun-00	8	native	brome
PE5	S45	017	149	10	14	729886	5057919	1400	10	3	1	32	raccoon	25-May-00	29-Jun-00	5	wetland veg.	cattails
PE5	S45	018	149	1	14	729780	5055770	1400	03	1	-	32		20-May-00	22-Jun-00	10	native	
PE5	S45	019	149	1	14	729962	5058051	1320	02	3	1	32	skunk	25-May-00	29-Jun-00	5	cool	brome
PE5	S45	020	149	1	14	729472	5055594	1400	02	3	1	32	badger	23-May-00	27-Jun-00	7	cool	brome/forbs
PE5	S45	021	149	1	14	729707	5057850	1400	02	3	1	32	fox	07-May-00	11-Jun-00	23	cool	
PE5	S45	022	149	1	14	729660	5055526	1400	02	3	1	32	badger	22-May-00	26-Jun-00	8	cool	brome
PE5	S45	023	149	1	14	729650	5057078	1400	02	3	1	32	unknown	12-May-00	15-Jun-00	18	native	
PE5	S45	024	149	1	14	729641	5055622	1390	03	1	-	32		26-May-00	26-Jun-00	4	native	
PE5	S45	025	149	1	14	729635	5057106	1400	02	3	1	32	skunk	18-May-00	25-Jun-00	12	native	
PE5	S45	026	149	1	14	729675	5055702	1400	02	1	-	32		19-May-00	21-Jun-00	11	cool	brome
PE5	S45	027	149	1	15	729605	5057220	1400	03	3	1	32	unknown	15-May-00	19-Jun-00	20	cool/native	
PE5	S45	028	149	1	14	729685	5055564	1400	02	3	1	32	raccoon	23-May-00	27-Jun-00	7	cool	brome
PE5	S45	029	149	1	14	729433	5056830	1320	02	3	1	32	skunk	22-May-00	26-Jun-00	9	native	
PE5	S45	030	149	1	14	729888	5055727	1400	02	1	-	32		12-May-00	15-Jun-00	18	cool/native	brome
PE5	S45	031	149	1	14	729618	5056890	1400	02	3	1	32	unknown	17-May-00	19-Jun-00	14	native	
PE5	S45	032	149	1	14	728834	5056884	1400	02	3	6	32		29-May-00	03-Jul-00	1	cool	
PE5	S45	033	149	1	14	729491	5056944	1400	02	3	1	32	unknown	17-May-00	21-Jun-00	14	native	
PE5	S45	034	149	1	14	728696	5056924	1320	02	3	1	32	unknown--no predator card	20-May-00	24-Jun-00	10	cool	brome
PE5	S45	035	149	1	14	730082	5057000	1320	02	3	1	32	fox	10-May-00	19-Jun-00	21	native	
PE5	S45	036	149	1	14	728783	5057057	1320	02	3	1	32	skunk	23-May-00	26-Jun-00	7	cool	brome
PE5	S45	037	149	7	14	730142	5056877	1400	02	1	-	32		09-May-00	12-Jun-00	22	wetland veg.	reed canary
PE5	S45	038	149	1	14	728730	5057254	1400	02	3	1	32	unsure--mink/coyote	24-May-00	24-Jun-00	6	cool	brome/kentucky blue
PE5	S45	039	149	1	14	729716	5056799	1400	02	1	-	32		08-May-00	12-Jun-00	23	cool	
PE5	S45	040	149	1	14	728758	5057190	1400	02	3	1	32	skunk	22-May-00	26-Jun-00	8	cool	kentucky blue
PE5	S45	041	149	1	14	729712	5056515	1400	02	3	1	32	unknown	20-May-00	24-Jun-00	11	cool	
PE5	S45	042	149	1	14	728694	5057619	1400	02	3	1	32	unsure--mink/crow	21-May-00	25-Jun-00	9	cool/native	
PE5	S45	043	149	7	14	729420	5056198	1400	02	1	-	32		05-May-00	09-Jun-00	26	cool	
PE5	S45	044	149	1	14	729313	5057434	1400	02	3	1	32	fox	24-May-00	28-Jun-00	6	cool	brome
PE5	S45	045	149	1	14	729412	5056442	1400	02	3	1	32	raccoon	24-May-00	28-Jun-00	6	native	
PE5	S45	046	149	1	14	729175	5057070	1400	02	3	1	32	badger	11-May-00	15-Jun-00	19	cool/native	kentucky blue
PE5	S45	047	149	1	14	729405	5056583	1400	02	3	1	32	raccoon	20-May-00	24-Jun-00	11	cool/native	forbs
PE5	S45	048	149	1	14	728448	5056902	1400	02	3	1	32	unsure--mink/weasel	15-May-00	19-Jun-00	15	cool	brome
PE5	S45	049	149	1	14	729927	5056894	1400	02	1	-	32		15-May-00	16-Jun-00	16	native	
PE5	S45	050	149	1	14	728445	5056918	1400	02	3	1	32	unknown	26-May-00	30-Jun-00	5	cool	brome
PE5	S45	051	149	1	14	729848	5056818	1400	02	1	-	32		19-May-00	19-Jun-00	11	cool	
PE5	S45	052	149	1	14	728531	5057451	1320	02	3	1	32	unknown	29-May-00	03-Jul-00	2	cool	brome
PE5	S45	053	149	1	14	729879	5056715	1400	2	3	1	32	skunk	19-May-00	20-Jun-00	9	cool	
PE5	S45	054	149	1	14	728538	5057609	1320	02	3	1	32	badger	21-May-00	24-Jun-00	10	cool	brome
PE5	S45	055	149	1	14	729909	5056268	1400	02	3	1	32	skunk	30-May-00	04-Jul-00	1	native	
PE5	S45	056	149	1	14	728452	5057386	1320	02	3	1	32	skunk	23-May-00	27-Jun-00	8	native	
PE5	S45	057	149	1	14	729870	5056232	1400	02	3	1	32	skunk	24-May-00	28-Jun-00	7	native	
PE5	S45	058	149	1	14	728466	5057319	1320	02	3	1	32	badger	23-May-00	27-Jun-00	8	native	
PE5	S45	059	149	1	14	729784	5056258	1400	02	3	1	32	unknown	21-May-00	25-Jun-00	10	cool	
PE5	S45	060	149	1	14	728428	5057601	1320	02	2	9	32		23-May-00	16-Jun-00	9	cool	brome
PE5	S45	061	149	1	14	729682	5056203	1320	02	1	-	32		12-May-00	14-Jun-00	19	native	
PE5	S45	062	149	1	15	728381	5057207	1400	02	3	1	32		13-May-00	13-Jun-00	18	native	kentucky blue

PE5	S45	063	149	1	14	729685	5056175	1400	02	3	1	32	fox	21-May-00	25-Jun-00	10	cool	
PE5	S45	064	149	1	14	728294	5056987	1320	02	3	1	32	unknown--no predator card	22-May-00	26-Jun-00	9	cool	brome
PE5	S45	065	149	8	14	728707	5056821	1400	02	3	1	32	badger	12-May-00	16-Jun-00	19	native	
PE5	S45	066	149	1	14	728675	5057204	1400	02	2	9	32		27-May-00	28-Jun-00	4	cool	brome
PE5	S45	067	149	8	14	729024	5056832	1400	2	1		32		24-May-00	24-Jun-00	7	cool	forbs
PE5	S45	068	149	1	14	728114	5057543	1320	02	3	1	32	skunk	23-May-00	24-Jun-00	8	cool	brome
PE5	S45	069	149	1	14	729003	5056852	1320	02	3	1	32	raccoon	20-May-00	24-Jun-00	11	cool	forbs
PE5	S45	070	149	1	14	728415	5057490	1400	2	3	1	32	coyote	01-Jun-00	7/2/00	8	cool	forbs
PE5	S45	071	149	1	14	729692	5057024	1400	2	3	1	32	skunk	27-May-00	01-Jul-00	13	cool/native	forbs
PE5	S45	095	149	1	14	730037	5055641	1400	02	3	1	32	skunk	05-Jun-00	10-Jul-00	1	cool/switch	brome
PE5	S45	097	149	1	14	729799	5058068	1400	02	2	6	32		09-Jun-00	14-Jul-00	6	native	
PE5	S45	099	149	1	14	728708	5057227	1350	02	3	1	32	fox	27-May-00	01-Jul-00	13	native	
PE5	S45	101	149	1	14	729714	5058440	1400	02	3	1	32	unknown	01-Jun-00	05-Jul-00	26	native	
PE5	S45	102	149	1	14	730175	5055833	1420	02	1	-	32		19-Jun-00	24-Jul-00	8	native	
PE5	S45	103	149	7	14	730006	5058337	1320	08	1	-	32		23-May-00	27-Jun-00	35		scouring rush
PE5	S45	104	149	1	14	730085	5055983	1400	02	3	1	32	skunk	22-Jun-00	27-Jul-00	5	native	
PE5	S45	105	149	1	14	729631	5058377	1400	2	1		32		20-Jun-00	13-Jul-00	7	native	
PE5	S45	106	149	1	14	730176	5055550	1400	2	1		32		22-Jun-00	15-Jul-00	5	native	
PE5	S45	107	149	7	14	730007	5058088	1400	3	1		32		16-Jun-00	09-Jul-00	11	native	
PE5	S45	108	149	1	14	730101	5055586	1400	02	3	1	32	unknown	06-Jun-00	08-Jul-00	21	native	
PE5	S45	110	149	1	14	729916	5055645	1350	2	1		32		19-Jun-00	13-Jul-00	8	native	
PE5	S45	112	149	1	14	729943	5056114	1400	02	3	1	32	fox	11-Jun-00	16-Jul-00	16	native	
PE5	S45	114	149	1	14	729764	5055654	1350	03	3	1	32	raccoon	17-Jun-00	20-Jul-00	10	native	forbs
PE5	S45	116	149	1	14	729724	5055613	1400	03	1	-	32	unknown	01-Jun-00	07-Jul-00	26	native	forbs
PE5	S45	118	149	1	14	729631	5055649	1400	02	3	1	32		20-Jun-00	25-Jul-00	7	native	forbs
PE5	S45	120	149	1	14	729515	5055579	1400	02	3	1	32	unsure--mink/crow	15-Jun-00	17-Jul-00	12	native	
PE5	S45	122	149	1	14	729472	5055587	1320	02	1	-	32		29-May-00	03-Jul-00	26	native	brome
PE5	S45	124	149	1	14	728334	5056873	1400	02	1	-	32		07-Jun-00	07-Jul-00	20	cool	brome
PE5	S45	126	149	1	14	728313	5056828	1320	02	1	-	32		09-Jun-00	13-Jul-00	18	native	
PE5	S45	128	149	1	14	728114	5157570	1400	02	3	1	32	skunk	19-Jun-00	24-Jul-00	8	native	
PE5	S45	152	149	1	14	728790	5057454	1400	02	3	1	32	unknown	22-Jun-00	27-Jul-00	6	native	
PE5	S45	154	149	1	14	728738	5057292	1400	2	1		32		20-Jun-00	11-Jul-00	8	native	
PE5	S45	156	149	1	14	728714	5057293	1400	02	1	-	32		19-Jun-00	21-Jul-00	9	native	
PE5	S45	158	149	1	14	728818	5056884	1350	02	3	1	32	fox	18-Jun-00	23-Jul-00	10	native	
PE5	S45	201	149	1	14	729928	5056492	1400	02	3	1	32	fox	24-Jun-00	29-Jul-00	3	cool	brome
PE5	S45	203	149	1	14	729925	5056343	1400	01	3	1	32	skunk	14-Jun-00	17-Jul-00	13	cool	brome
PE5	S45	205	149	1	14	729878	5056324	1400	02	3	1	32	raccoon	19-Jun-00	24-Jul-00	8	cool/native	brome
PE5	S45	207	149	1	14	729766	5056309	1400	02	3	1	32	unsure--skunk/raccoon	13-Jun-00	17-Jul-00	14	cool/native	brome
PE5	S45	209	149	1	14	729490	5056476	1400	02	3	1	32	fox	08-Jun-00	12-Jul-00	19	cool	brome
PE5	S45	211	149	1	14	729488	5056639	1400	02	3	1	32	unsure--mink/crow	16-Jun-00	17-Jul-00	11	cool/switch/native	forbs/milkweed
PE5	S45	213	149	1	14	729936	5056875	1320	02	1	-	32		15-Jun-00	17-Jul-00	12	native	
PE5	S45	215	149	1	14	729912	5056939	1320	02	3	1	32	unsure--mink/crow	18-Jun-00	23-Jul-00	9	native	
PE5	S45	217	149	1	14	729466	5056965	1400	02	1	-	32		08-Jun-00	12-Jul-00	19	native/switch	
PE5	S45	301	149	1	14	729584	8587597	1320	02	3	1	32	unknown	11-Jun-00	14-Jul-00	17	native	
PE5	S45	303	149	10	14	729584	5057595	1320	09	2	6	32		21-Jun-00	26-Jul-00	7	wetland veg.	cattails/forbs
PE5	S45	305	149	1	14	728322	5057492	1320	02	3	1	32	fox	25-Jun-00	30-Jul-00	3	native	
PE5	S45	307	149	1	14	728387	5057576	1350	02	3	1	32	unsure--mink/crow	12-Jun-00	16-Jul-00	16	native	
PE5	S45	309	149	1	14	728517	5057063	1320	02	3	1	32	skunk	19-Jun-00	22-Jul-00	9	native	
PE5	S45	311	149	1	14	727834	5056816	1400	02	3	1	32	unknown	12-Jun-00	17-Jul-00	16	cool	kentucky blue
RF1	603	002	121	1	15	306654	5032425	1320	02	1	-	32		07-Apr-00	12-May-00	3	switch	
RF1	603	004	121	1	15	306710	5032478	1320	02	3	1	32	skunk	16-Apr-00	21-May-00	28	switch	
RF1	P08	001	121	1	15	304649	5040224	1400	02	1	-	32		11-May-00	18-Jun-00	11	cool	kentucky blue
RF1	P08	002	121	1	15	304742	5039522	1320	02	3	1	32	skunk	20-May-00	24-Jun-00	2	cool	brome
RF1	P08	003	121	1	15	304779	5040134	1400	02	3	1	32	unknown	12-May-00	15-Jun-00	15	cool	brome
RF1	P08	004	121	1	15	304814	5039587	1320	02	1	-	32		21-Apr-00	26-May-00	31	cool	brome
RF1	P08	005	121	1	15	304793	5040144	1400	02	1	-	32		12-May-00	15-Jun-00	16	cool	brome
RF1	P08	006	121	1	15	305663	5039579	1400	02	3	1	32	badger	18-May-00	22-Jun-00	4	cool	brome
RF1	P08	007	121	1	15	304973	5039992	1400	02	3	1	32	unknown	14-May-00	18-Jun-00	8	cool/native	brome/kentucky blue
RF1	P08	008	121	10	15	305521	5039577	1320	09	3	1	32	fox	25-Apr-00	30-May-00	27	wetland veg.	
RF1	P08	009	121	7	15	306002	5040197	1400	02	3	1	32	skunk	12-May-00	16-Jun-00	10	cool	brome
RF1	P08	010	121	1	15	305481	5039644	1400	02	3	1	32	unsure--mink/weasel	16-May-00	20-Jun-00	6	cool	brome

RF1	P08	012	121	1	15	305481	5039626	1320	02	3	1	32	fox	17-May-00	21-Jun-00	5	cool	brome
RF1	P08	014	121	1	15	305703	5039822	1400	02	1	-	32		12-May-00	16-Jun-00	10	cool	brome
RF1	P08	016	121	1	15	305045	5039871	1400	02	1	-	32		11-May-00	18-Jun-00	11	cool	brome
RF1	P08	018	121	1	15	305132	5039917	1320	02	1	-	32		26-Apr-00	31-May-00	26	cool	brome
RF1	P08	020	121	1	15	305765	5040126	1400	02	1	-	32		12-May-00	18-Jun-00	14	cool/native	brome
RF1	P08	022	121	1	15	305567	5040124	1400	02	1	-	32		09-May-00	15-Jun-00	13	cool	brome
RF1	P08	101	121	1	15	305608	5039769	1320	03	3	1	32	skunk	17-Jun-00	22-Jul-00	3		forbs
RF1	P08	102	121	1	15	305228	5039590	1320	02	3	1	32	unsure--skunk/raccoon	15-Jun-00	20-Jul-00	5	cool	brome/forbs
RF1	P08	103	121	1	15	305365	5040099	1400	02	1	-	32		16-May-00	20-Jun-00	35	cool	brome
RF1	P08	104	121	1	15	305445	5039855	1400	02	3	1	32	unknown	10-Jun-00	11-Jul-00	10	cool	brome
RF1	P08	106	121	1	15	304719	5040253	1400	03	1	-	32		23-May-00	26-Jun-00	28	cool	brome/forbs
RF1	P08	108	121	1	15	305612	5040177	1400	02	1	-	32		18-May-00	20-Jun-00	33	cool/native	brome
RF1	P08	110	121	1	15	305690	5040115	1400	02	1	-	32		12-Jun-00	17-Jul-00	8	cool	brome
SC1	704	001	149	8	15	266319	5049849	1400	02	1	-	32		16-May-00	15-Jun-00	14	cool	brome
SC1	704	002	149	1	15	266004	5049894	1320	02	1	-	32		28-Apr-00	02-Jun-00	27	alfalfa	alfalfa
SC1	704	003	149	1	14	733075	5049753	1400	02	3	1	32	badger	22-May-00	26-Jun-00	3	cool	brome
SC1	704	004	149	1	14	734009	5050316	1320	02	1	-	32		14-May-00	16-Jun-00	11	cool/native	brome
SC1	704	005	149	1	14	733001	5050146	1400	02	1	-	32		14-May-00	16-Jun-00	11	cool	brome
SC1	704	006	149	1	15	734021	5050333	1320	02	1	-	32		07-May-00	10-Jun-00	18	switch	
SC1	704	007	149	1	14	733068	5050440	1320	02	3	1	32	skunk	06-May-00	10-Jun-00	19	cool	brome
SC1	704	008	149	1	14	734049	5050371	1320	02	1	-	32		28-Apr-00	29-May-00	27	switch	
SC1	704	009	149	1	14	733207	5050071	1320	02	3	1	32	skunk	16-May-00	20-Jun-00	9	native	
SC1	704	010	149	1	14	733903	5050392	1400	01	1	-	32		12-May-00	14-Jun-00	13	switch	
SC1	704	011	149	10	14	733695	5050438	1320	10	3	1	32	raccoon	06-May-00	12-Jun-00	19	wetland veg.	
SC1	704	012	149	1	15	265936	5050550	1320	02	1	-	32		06-May-00	08-Jun-00	19	native/switch	
SC1	704	013	149	1	14	733670	5050521	1400	02	5	5	32		08-May-00	11-Jun-00	17	switch	
SC1	704	014	149	1	14	733716	5050119	1320	02	1	-	32		26-Apr-00	29-May-00	29	native	
WA4	P19	001	121	10	15	288044	5045102	1400	08	3	1	32	unsure--skunk/raccoon	13-May-00	16-Jun-00	10	wetland veg.	hydrophytes
WA4	P19	002	121	1	15	287676	5045011	1400	02	2	9	32		19-May-00	23-Jun-00	4	cool	brome
WA4	P19	003	121	1	15	287865	5045215	1400	02	3	1	32	skunk	12-May-00	16-Jun-00	11	cool	brome
WA4	P19	004	121	1	15	287746	5045316	1320	02	3	1	32	skunk	15-May-00	19-Jun-00	8	cool	
WA4	P19	005	121	1	15	287850	5045365	1400	02	1	-	32		17-May-00	6/18/2000	6	native	brome
WA4	P19	006	121	1	15	287768	5045532	1400	02	3	1	32	raccoon	12-May-00	16-Jun-00	11	cool	
WA4	P19	007	121	1	15	287082	5045135	1320	02	3	1	32	raccoon	07-May-00	09-Jun-00	16	native	
WA4	P19	008	121	1	15	287791	5045535	1400	02	3	6	32		19-May-00	23-Jun-00	4	cool/native	little blue
WA4	P19	009	121	1	15	287221	5045358	1400	02	3	1	32	skunk	11-May-00	13-Jun-00	12	cool	brome
WA4	P19	010	121	1	15	287729	5045581	1400	02	3	1	32	mink	18-May-00	22-Jun-00	5	cool	
WA4	P19	011	121	10	15	287252	5046093	1320	09	3	1	32	mink	12-May-00	16-Jun-00	11	wetland veg.	reeds
WA4	P19	012	121	1	15	287827	5045523	1400	02	3	1	32	skunk	07-May-00	12-Jun-00	16	cool	kentucky blue
WA4	P19	013	121	10	15	287676	5046795	1320	08	3	1	32	skunk	06-May-00	10-Jun-00	17	wetland veg.	
WA4	P19	014	121	1	15	287874	5045163	1400	02	3	1	32	multiple--unknown	02-May-00	07-Jun-00	21	cool	kentucky blue
WA4	P19	015	121	1	15	287679	5046817	1320	02	3	1	32	coyote	27-Apr-00	31-May-00	27	wetland veg.	reed canary grass
WA4	P19	016	121	1	15	288022	5045097	1400	02	3	1	32	unsure--skunk/?	03-May-00	07-Jun-00	20	cool	brome/kentucky blue
WA4	P19	017	121	1	15	288036	5046294	1400	02	3	1	32	unsure--mink/crow	17-May-00	20-Jun-00	7	cool	brome
WA4	P19	018	121	1	15	287896	5044835	1400	02	5	-	32		12-May-00	17-Jun-00	11	cool	brome
WA4	P19	019	121	1	15	287769	5047127	1400	02	1	-	32		18-May-00	19-Jun-00	6	native	
WA4	P19	020	121	1	15	287122	5065977	1400	02	3	1	32	unknown	13-May-00	17-Jun-00	10	native	
WA4	P19	022	121	1	15	287136	5046100	1400	02	1	-	32		13-May-00	14-Jun-00	10	cool	
WA4	P19	024	121	1	15	287182	5046500	1400	02	1	-	32		08-May-00	13-Jun-00	15	native	
WA4	P19	026	121	1	15	287268	5046263	1400	02	3	1	32	unsure--mink/crow	07-May-00	11-Jun-00	19	cool	
WA4	P19	028	121	1	15	287609	5046691	1320	02	1	-	32	unsure--mink/crow	21-May-00	22-Jun-00	3	switch	
WA4	P19	030	121	1	15	287263	5046650	1320	02	3	1	32		27-May-00	01-Jun-00	26	switch	
WA4	P19	032	121	1	15	287409	5047007	1320	02	1	-	32		02-May-00	03-Jun-00	22	cool	brome
WA4	P19	034	121	1	15	287436	5047033	1400	02	1	-	32		17-May-00	19-Jun-00	7	cool	brome
WA4	P19	036	121	1	15	287269	5047414	1320	02	3	1	32	throw out!	23-May-00	27-Jun-00	1	cool	brome
WA4	P19	038	121	1	15	287284	5047321	1320	02	1	-	32		26-Apr-00	31-May-00	31	native	
WA4	P19	040	121	1	15	287145	5047337	1320	02	3	6	32		26-Apr-00	31-May-00	29	native	
WA4	P19	042	121	1	15	287457	5047089	1400	02	3	1	32	skunk	13-May-00	18-Jun-00	11	cool	brome
WA4	P19	044	121	1	15	287094	5044901	1320	02	3	1	32	badger	14-May-00	17-Jun-00	14	cool	brome
WA4	P19	046	121	1	15	288690	5046744	1320	02	1	-	32		20-Apr-00	25-May-00	35	native	
WA4	P19	048	121	1	15	287305	5046683	1320	02	3	1	32	weasel	14-May-00	16-Jun-00	18	switch/native	

WA4	P19	050	121	1	15	288044	5046396	1400	02	3	1	32	unsure--mink/crow	22-May-00	25-Jun-00	12	cool	brome
WA4	P19	051	121	1	15	287850	5045365	1400	02	2	9	32		07-Jun-00	12-Jul-00	2	native	brome
WA4	P19	053	121	1	15	287823	5045365	1400	02	1	-	32		09-Jun-00	14-Jul-00	7	native	brome
WA4	P19	055	121	8	15	287095	5046078	1320	02	3	1	32	skunk	03-Jun-00	06-Jul-00	13	cool	brome
WA4	P19	099	121	1	15	287874	5045163	1400	02	3	6	32		08-May-00	11-Jun-00	28	cool	brome/kentucky blue
WA4	P19	102	121	1	15	287127	5045182	1400	02	1	-	32		29-May-00	01-Jul-00	28	cool	kentucky blue
WA4	P19	104	121	1	15	287085	5045840	1350	02	3	1	32	badger	31-May-00	04-Jul-00	26	cool	brome/timothy
WA4	P19	106	121	1	15	287086	5046154	1400	02	1	-	32		05-Jun-00	12-Jul-00	17	cool	kentucky blue
WA4	P19	108	121	1	15	287102	5046235	1400	02	1	-	32		10-Jun-00	13-Jul-00	16	switch	
WA4	P19	110	121	1	15	287099	5046310	1320	02	1	-	32		16-Jun-00	19-Jul-00	10	native	
WA4	P19	112	121	1	15	287221	5046690	1320	02	1	-	32		17-Jun-00	22-Jul-00	9	switch	
WA4	P19	114	121	1	15	287208	5046161	1400	02	3	1	32	skunk	14-Jun-00	15-Jul-00	12	cool	kentucky blue
WA4	P19	116	121	1	15	287190	5045834	1400	02	3	1	32	skunk	29-May-00	01-Jul-00	28	native	timothy
WA4	P19	118	121	1	15	287313	5046962	1400	02	3	1	32	skunk	28-May-00	30-Jun-00	29	cool	
WA4	P19	120	121	1	15	287308	5046596	1400	03	1	-	32		28-May-00	30-Jun-00	29		forbs/grass
WA4	P19	122	121	1	15	287410	5047015	1320	02	1	-	32		23-May-00	27-Jun-00	34	cool	brome
WA4	P19	124	121	1	15	287402	5146567	1400	02	1	-	32		03-Jun-00	07-Jul-00	23	cool	kentucky blue/forbs
WA4	P19	161	121	1	15	287547	5045020	1400	03	1	-	32		31-May-00	02-Jul-00	26		forbs
WA4	P19	163	121	1	15	287841	5044871	1400	02	1	-	32		12-Jun-00	16-Jul-00	14	cool	brome/kentucky blue
WA4	P19	165	121	1	15	287823	5045280	1320	03	3	1	32	skunk	01-Jun-00	04-Jul-00	25		forbs
WA4	P19	167	121	1	15	287794	5045442	1400	02	1	-	32		13-Jun-00	16-Jul-00	13	cool	forbs
WA4	P19	169	121	1	15	288108	5045756	1320	02	3	1	32	badger	12-Jun-00	16-Jul-00	14	native	
WA4	P19	171	121	1	15	287038	5044809	1350	02	1	-	32		31-May-00	01-Jul-00	26	cool	brome
WA4	P19	175	121	1	15	287567	5046859	1320	02	3	1	32	fox	12-Jun-00	16-Jul-00	14	cool	brome
WA4	P19	177	121	1	15	287578	5046870	1320	02	3	1	32	fox	12-Jun-00	14-Jul-00	14	cool	brome
WA4	P19	179	121	1	15	287948	5046970	1320	02	1	-	32		07-Jun-00	7/6/2000	19	reed canary	
WA4	P19	181	121	1	15	287937	5046623	1400	02	3	1	32	skunk	11-Jun-00	17-Jul-00	11	cool	kentucky blue
WA4	P19	183	121	1	15	288017	5046535	1400	02	1	-	32		29-May-00	01-Jul-00	28	cool	brome/kentucky blue
WA4	P19	185	121	1	15	287958	5046548	1400	02	3	1	32	skunk	19-Jun-00	24-Jul-00	7	cool	kentucky blue
WA4	P19	187	121	1	15	288036	5046633	1320	02	1	-	32		26-May-00	28-Jun-00	31	cool	brome
WA4	P19	189	121	1	15	288116	5045749	1320	02	1	-	32		07-Jun-00	09-Jul-00	19	cool	brome/forbs
WA4	P19	191	121	1	15	288116	5048749	1400	02	1	-	32		28-May-00	01-Jul-00	29	cool	brome
WA4	P19	193	121	1	15	287999	5045888	1400	02	3	1	32	badger	15-Jun-00	20-Jul-00	11	cool	brome/forbs
WA4	P19	195	121	1	15	288012	5046240	1400	02	3	1	32	unsure--skunk/raccoon	15-Jun-00	20-Jul-00	11	cool	brome/forbs
WA4	P19	197	121	1	15	287886	5047016	1320	02	1	-	32		13-Jun-00	16-Jul-00	13	cool/switch	brome
WA4	P19	199	121	1	15	287912	5047369	1320	02	1	-	32		06-Jun-00	06-Jul-00	20	switch	

APPENDIX B, TABLE 1. 2000 NESTING STUDY DEPREDATION			
Study Areas:	18		
Fields:	36		
Total Number of Nests:	521		
Total Depredated Nests	278		
Percentage of Nests Depredated:	53.4%		
Predator Species:			Percentage Depredated by Species:
Coyotes	9		3.2%
Red Foxes	31		11.2%
Raccoons	34		12.2%
Striped Skunks	72		25.9%
American Badgers	31		11.2%
Minks	4		1.4%
Weasels	1		0.4%
Franklin's Ground Squirrels	2		0.7%
Black Billed Magpies	0		0.0%
American Crows	1		0.4%
Gulls	0		0.0%
Multiple	6		2.2%
Unknown	48		17.3%
Unsure	39		14.0%
		Total	100%

APPENDIX B, TABLE 2. 2000 NESTING STUDY DEPREDATION BY COUNTY			
BIG STONE COUNTY (011)			
Study Areas:	3	(Bs9, OT7, OT8)	
Fields:	11		
Total Number of Nests:	212		
Total Depredated Nests	113		
Percentage of Nests Depredated:	53.3%		
Predator Species:			Percentage Depredated by Species:
Coyotes	5		4.4%
Red Foxes	7		6.2%
Raccoons	20		17.7%
Striped Skunks	25		22.1%
American Badgers	15		13.3%
Minks	0		0.0%
Weasels	0		0.0%
Franklin's Ground Squirrels	1		0.9%
Black Billed Magpies	0		0.0%
American Crows	0		0.0%
Gulls	0		0.0%
Multiple (List)	5		4.4%
Unknown	17		15.0%
Unsure	18		15.9%
		Total	100%
POPE COUNTY (121)			
Study Areas:	8	(BA8, BA9, CF5, CF7, GI2, GI5, RF1, WA4)	
Fields:	17		
Total Number of Nests:	141		
Total Depredated Nests	73		
Percentage of Nests Depredated:	52%		
Predator Species:			Percentage Depredated by Species:
Coyotes	3		4%
Red Foxes	10		14%
Raccoons	5		7%
Striped Skunks	24		33%
American Badgers	5		7%
Minks	3		4%
Weasels	1		1%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	1		1%
Gulls	0		0%
Multiple (List)	1		1%
Unknown	9		12%
Unsure	11		15%

		Total	**100%**
STEVENS COUNTY (149)			
Study Areas:	**4**	**(FR2, HO2, PE5, SC1)**	
Fields:	**5**		
Total Number of Nests:	**157**		
Total Depredated Nests	**88**		
Percentage of Nests Depredated:	**56%**		
Predator Species:			**Percentage Depredated by Species:**
Coyotes	**1**		**1%**
Red Foxes	**14**		**16%**
Raccoons	**9**		**10%**
Striped Skunks	**23**		**26%**
American Badgers	**9**		**10%**
Minks	**0**		**0%**
Weasels	**0**		**0%**
Franklin's Ground Squirrels	**1**		**1%**
Black Billed Magpies	**0**		**0%**
American Crows	**0**		**0%**
Gulls	**0**		**0%**
Multiple (List)	**0**		**0%**
Unknown	**21**		**24%**
Unsure	**10**		**11%**
		Total	**100%**
SWIFT COUNTY (151)			
Study Areas:	**3**	**(CL9, FAH, MON)**	
Fields:	**3**		
Total Number of Nests:	**11**		
Total Depredated Nests	**4**		
Percentage of Nests Depredated:	**36%**		
Predator Species:			**Percentage Depredated by Species:**
Coyotes	**0**		**0%**
Red Foxes	**0**		**0%**
Raccoons	**0**		**0%**
Striped Skunks	**0**		**0%**
American Badgers	**2**		**50%**
Minks	**1**		**25%**
Weasels	**0**		**0%**
Franklin's Ground Squirrels	**0**		**0%**
Black Billed Magpies	**0**		**0%**
American Crows	**0**		**0%**
Gulls	**0**		**0%**
Multiple (List)	**0**		**0%**
Unknown	**1**		**25%**
Unsure	**0**		**0%**
		Total	**100%**

APPENDIX B, TABLE 3. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	**BA8**		
Fields:	**021, 032, 036**		
Total Number of Nests:	**14**		
Total Depredated Nests	**7**		
Percentage of Nests Depredated:	**50%**		
Predator Species:			**Percentage Depredated by Species:**
Coyotes	**0**		**0%**
Red Foxes	**1**		**14%**
Raccoons	**3**		**43%**
Striped Skunks	**1**		**14%**
American Badgers	**0**		**0%**
Minks	**0**		**0%**
Weasels	**0**		**0%**
Franklin's Ground Squirrels	**0**		**0%**
Black Billed Magpies	**0**		**0%**
American Crows	**0**		**0%**
Gulls	**0**		**0%**
Multiple (List)	**0**		**0%**
Unknown	**2**		**29%**
Unsure (List)	**0**		**0%**
		Total	**100%**

APPENDIX B, TABLE 4. STUDY DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	BA9			
Fields:	001, 012, P12			
Total Number of Nests:	7			
Total Depredated Nests	1			
Percentage of Nests Depredated:	14%			
Predator Species:			Percentage Depredated by Species:	
Coyotes	0		0%	
Red Foxes	0		0%	
Raccoons	0		0%	
Striped Skunks	0		0%	
American Badgers	0		0%	
Minks	0		0%	
Weasels	0		0%	
Franklin's Ground Squirrels	0		0%	
Black Billed Magpies	0		0%	
American Crows	0		0%	
Gulls	0		0%	
Multiple (List)	0		0%	
Unknown	0		0%	
Unsure (List)	1		100%	mink/weasel
		Total	100%	

APPENDIX B, TABLE 5. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**BS9**			
Fields:	**B53, B57, MN1, MN5**			
Total Number of Nests:	**98**			
Total Depredated Nests	**48**			
Percentage of Nests Depredated:	**49%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**2**		**4%**	
Red Foxes	**3**		**6%**	
Raccoons	**6**		**13%**	
Striped Skunks	**13**		**27%**	
American Badgers	**6**		**13%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**1**		**2%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**2**		**4%**	**coyote and skunk (2)**
Unknown	**9**		**19%**	
Unsure (List)	**6**		**13%**	**weasel/crow (3); skunk/raccoon (3)**
		Total	**100%**	

APPENDIX B, TABLE 6. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	CF5		
Fields:	085, 088		
Total Number of Nests:	3		
Total Depredated Nests	3		
Percentage of Nests Depredated:	100%		
Predator Species:			Percentage Depredated by Species:
Coyotes	2		67%
Red Foxes	0		0%
Raccoons	0		0%
Striped Skunks	1		33%
American Badgers	0		0%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	0		0%
Unsure (List)	0		0%
		Total	100%

APPENDIX B, TABLE 7. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	**CF7**		
Fields:	**108**		
Total Number of Nests:	**1**		
Total Depredated Nests	**1**		
Percentage of Nests Depredated:	**100%**		
Predator Species:			**Percentage Depredated by Species:**
Coyotes	**0**		**0%**
Red Foxes	**0**		**0%**
Raccoons	**0**		**0%**
Striped Skunks	**0**		**0%**
American Badgers	**0**		**0%**
Minks	**1**		**100%**
Weasels	**0**		**0%**
Franklin's Ground Squirrels	**0**		**0%**
Black Billed Magpies	**0**		**0%**
American Crows	**0**		**0%**
Gulls	**0**		**0%**
Multiple (List)	**0**		**0%**
Unknown	**0**		**0%**
Unsure (List)	**0**		**0%**
		Total	**100%**

APPENDIX B, TABLE 8. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	CL9		
Fields:	SW4		
Total Number of Nests:	7		
Total Depredated Nests	3		
Percentage of Nests Depredated:	43%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	0		0%
Raccoons	0		0%
Striped Skunks	0		0%
American Badgers	2		67%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	1		33%
Unsure (List)	0		0%
		Total	100%

APPENDIX B, TABLE 9. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	FAH		
Fields:	602		
Total Number of Nests:	3		
Total Depredated Nests	1		
Percentage of Nests Depredated:	33%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	0		0%
Raccoons	0		0%
Striped Skunks	0		0%
American Badgers	0		0%
Minks	1		100%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	0		0%
Unsure (List)	0		0%
		Total	100%

APPENDIX B, TABLE 10. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	**FR2**		
Fields:	**703**		
Total Number of Nests:	**1**		
Total Depredated Nests	**1**		
Percentage of Nests Depredated:	**100%**		
Predator Species:			**Percentage Depredated by Species:**
Coyotes	**0**		**0%**
Red Foxes	**0**		**0%**
Raccoons	**0**		**0%**
Striped Skunks	**1**		**100%**
American Badgers	**0**		**0%**
Minks	**0**		**0%**
Weasels	**0**		**0%**
Franklin's Ground Squirrels	**0**		**0%**
Black Billed Magpies	**0**		**0%**
American Crows	**0**		**0%**
Gulls	**0**		**0%**
Multiple (List)	**0**		**0%**
Unknown	**0**		**0%**
Unsure (List)	**0**		**0%**
		Total	**100%**

APPENDIX B, TABLE 11. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	GI2		
Fields:	134, 138		
Total Number of Nests:	17		
Total Depredated Nests	11		
Percentage of Nests Depredated:	65%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	5		45%
Raccoons	0		0%
Striped Skunks	4		36%
American Badgers	0		0%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	2		18%
Unsure (List)	0		0%
		Total	100%

APPENDIX B, TABLE 12. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**GI5**			
Fields:	**145, 146, 147**			
Total Number of Nests:	**4**			
Total Depredated Nests	**4**			
Percentage of Nests Depredated:	**100%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**0**		**0%**	
Red Foxes	**0**		**0%**	
Raccoons	**0**		**0%**	
Striped Skunks	**1**		**25%**	
American Badgers	**0**		**0%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**0**		**0%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**1**		**25%**	
Gulls	**0**		**0%**	
Multiple (List)	**0**		**0%**	
Unknown	**1**		**25%**	
Unsure (List)	**1**		**25%**	**mink/crow (1)**
		Total	**100%**	

APPENDIX B, TABLE 13. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	HO2		
Fields:	701, 702		
Total Number of Nests:	22		
Total Depredated Nests	0		
Percentage of Nests Depredated:	0%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	0		0%
Raccoons	0		0%
Striped Skunks	0		0%
American Badgers	0		0%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	0		0%
Unsure (List)	0		0%
		Total	0%

APPENDIX B, TABLE 14. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	MON		
Fields:	601		
Total Number of Nests:	1		
Total Depredated Nests	0		
Percentage of Nests Depredated:	0%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	0		0%
Raccoons	0		0%
Striped Skunks	0		0%
American Badgers	0		0%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	0		0%
Unsure (List)	0		0%
		Total	0%

APPENDIX B, TABLE 15. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**OT7**			
Fields:	**267, 274, 279, MN2**			
Total Number of Nests:	**43**			
Total Depredated Nests	**25**			
Percentage of Nests Depredated:	**58%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**1**		**4%**	
Red Foxes	**2**		**8%**	
Raccoons	**4**		**16%**	
Striped Skunks	**7**		**28%**	
American Badgers	**3**		**12%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**0**		**0%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**0**		**0%**	
Unknown	**2**		**8%**	
Unsure (List)	**6**		**24%**	**mink/crow (2); skunk/raccoon (4)**
		Total	**100%**	

APPENDIX B, TABLE 16. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**OT8**			
Fields:	**281, B02, B12**			
Total Number of Nests:	**71**			
Total Depredated Nests	**40**			
Percentage of Nests Depredated:	**56%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**2**		**5%**	
Red Foxes	**2**		**5%**	
Raccoons	**10**		**25%**	
Striped Skunks	**5**		**13%**	
American Badgers	**6**		**15%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**0**		**0%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**3**		**8%**	**coyote and raccoon (1); mink and ? (1); unknown (1)**
Unknown	**6**		**15%**	
Unsure (List)	**6**		**15%**	**skunk/raccoon (4); mink/weasel (1); mink/crow (1)**
		Total	**100%**	

APPENDIX B, TABLE 17. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**PE5**			
Fields:	**S03, S45**			
Total Number of Nests:	**120**			
Total Depredated Nests	**83**			
Percentage of Nests Depredated:	**69%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**1**		**1%**	
Red Foxes	**14**		**17%**	
Raccoons	**8**		**10%**	
Striped Skunks	**20**		**24%**	
American Badgers	**8**		**10%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**1**		**1%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**0**		**0%**	
Unknown	**21**		**25%**	
Unsure (List)	**10**		**12%**	**mink/crow (5); weasel/FGS (1); skunk/raccoon (2); mink/coyote (1); mink/weasel (1)**
		Total	**100%**	

APPENDIX B, TABLE 18. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**RF1**			
Fields:	**603, P08**			
Total Number of Nests:	**25**			
Total Depredated Nests	**12**			
Percentage of Nests Depredated:	**48%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**0**		**0%**	
Red Foxes	**2**		**17%**	
Raccoons	**0**		**0%**	
Striped Skunks	**4**		**33%**	
American Badgers	**1**		**8%**	
Minks	**0**		**0%**	
Weasels	**0**		**0%**	
Franklin's Ground Squirrels	**0**		**0%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**0**		**0%**	
Unknown	**3**		**25%**	
Unsure (List)	**2**		**17%**	**mink/weasel (1); skunk/raccoon (1)**
		Total	**100%**	

APPENDIX B, TABLE 19. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION			
Study Area:	SC1		
Fields:	704		
Total Number of Nests:	14		
Total Depredated Nests	4		
Percentage of Nests Depredated:	29%		
Predator Species:			Percentage Depredated by Species:
Coyotes	0		0%
Red Foxes	0		0%
Raccoons	1		25%
Striped Skunks	2		50%
American Badgers	1		25%
Minks	0		0%
Weasels	0		0%
Franklin's Ground Squirrels	0		0%
Black Billed Magpies	0		0%
American Crows	0		0%
Gulls	0		0%
Multiple (List)	0		0%
Unknown	0		0%
Unsure (List)	0		0%
		Total	100%

APPENDIX B, TABLE 20. STUDY AREA DEPREDATION

STUDY AREA DEPREDATION				
Study Area:	**WA4**			
Fields:	**P19**			
Total Number of Nests:	**70**			
Total Depredated Nests	**34**			
Percentage of Nests Depredated:	**49%**			
Predator Species:			**Percentage Depredated by Species:**	
Coyotes	**1**		**3%**	
Red Foxes	**2**		**6%**	
Raccoons	**2**		**6%**	
Striped Skunks	**13**		**38%**	
American Badgers	**4**		**12%**	
Minks	**2**		**6%**	
Weasels	**1**		**3%**	
Franklin's Ground Squirrels	**0**		**0%**	
Black Billed Magpies	**0**		**0%**	
American Crows	**0**		**0%**	
Gulls	**0**		**0%**	
Multiple (List)	**1**		**3%**	**unknown (1)**
Unknown	**1**		**3%**	
Unsure (List)	**7**		**21%**	**mink/crow (4); skunk/raccoon (2); skunk/? (1)**
		Total	**100%**	

APPENDIX C. DISTANCE (m) FROM NEST TO HOSTILE HABITAT STRUCTURE

Study Area	Field Number	Nest Number	Fate	Cause	H2O	Linear	Trees	Stationary	Tracks	open
BA8	021	002	1	-		100			7	
BA8	021	004	1	-					7	
BA8	021	006	3	1	50			100		
BA8	021	008	1	-			50			
BA8	021	012	3	6						
BA8	032	001	3	1	50					
BA8	032	003	1	-	8	25				
BA8	036	001	3	1	30	4				
BA8	036	002	3	1	100				0.14	
BA8	036	003	3	1		4				
BA8	036	004	1	-	60		60		7	
BA8	036	006	3	1	15		15		1	
BA8	036	008	3	6						
BA8	036	101	3	1		45				
BA9	1	002	3	1	50		50 (2)			
BA9	001	004	3	6						
BA9	001	006	1	-					0.1	
BA9	012	001	2	9						
BA9	012	002	1	-	10	50 (2)	50			
BA9	012	004	1	-			8 (2)			
BA9	P12	001	5	-						
BS9	B53	006	1	-		100				
BS9	B53	008	3	1			50			
BS9	B53	050	2	6						
BS9	B53	138	3	1						x
BS9	B53	140	3	1						x
BS9	B53	142	3	1						x
BS9	B53	146	1	-						x
BS9	B53	148	1	-		7				
BS9	B53	150	3	1	0				0	
BS9	B53	152	1	-		10				
BS9	B53	154	3	1		2				
BS9	B53	156	3	1						x
BS9	B53	158	1	-					4	
BS9	B57	001	1	-	50	75				
BS9	B57	002	1	-		30		100		
BS9	B57	003	2	6						
BS9	B57	004	1	-		50				
BS9	B57	005	3	1		150 (2)				
BS9	B57	006	1	-		15 ; 50				
BS9	B57	007	3	1						x
BS9	B57	050	3	1	10					
BS9	B57	051	3	1		50				
BS9	B57	101	1	-	1		5			
BS9	B57	102	3	1		4				
BS9	B57	103	1	-	1	15				
BS9	B57	104	1	-		30				
BS9	B57	105	3	1	0					
BS9	B57	106	3	1		18				
BS9	B57	107	1	-	1					
BS9	B57	108	1	-		50				
BS9	B57	109	2	9						
BS9	B57	110	3	1		15			2	
BS9	B57	111	3	1	12					

BS9	B57	112	3	1	45					
BS9	B57	113	3	1	15	10				
BS9	B57	114	3	1	50			150		
BS9	B57	115	1	-	100	15				
BS9	B57	116	3	1	30					
BS9	B57	117	3	1	60	8				
BS9	B57	118	2	9						
BS9	B57	119	1	-	100			8	1	
BS9	B57	120	2	9						
BS9	B57	121	3	1	30 (2)					
BS9	B57	122	3	1	3	4				
BS9	B57	123	2	6						
BS9	B57	124	1	-		8				
BS9	B57	126	3	1	15	10				
BS9	B57	128	3	1	40					
BS9	B57	130	3	1		100	25 ; 15			
BS9	B57	132	1	-	50	100				
BS9	B57	134	1	-	70					
BS9	B57	136	3	1	70					
BS9	B57	138	3	1	30	50				
BS9	B57	140	3	1		50				
BS9	B57	142	1	-	30	50				
BS9	B57	144	3	1	0 ; 120	120				
BS9	B57	146	1	-	20					
BS9	MN1	001	1	-		0	50			
BS9	MN1	002	3	1	90	60	55			
BS9	MN1	101	1	-	25	25	25			
BS9	MN1	103	3	1	35	35	35		2	
BS9	MN1	105	1	-	50					
BS9	MN1	107	1	-	30					
BS9	MN1	109	3	1	30					
BS9	MN1	111	3	1	20	20	20			
BS9	MN1	113	3	1	50 ; 20					
BS9	MN1	115	3	6						
BS9	MN5	002	3	1						x
BS9	MN5	003	1	-						
BS9	MN5	004	5	-						
BS9	MN5	010	3	1		100			0.2	
BS9	MN5	051	3	1						x
BS9	MN5	052	3	1						x
BS9	MN5	101	3	1						
BS9	MN5	102	1	-				20		
BS9	MN5	103	1	-						
BS9	MN5	104	1	-		30				
BS9	MN5	105	1	-						
BS9	MN5	106	1	1		50				
BS9	MN5	107	3	1						
BS9	MN5	108	1	-	50	50				
BS9	MN5	109	3	1						
BS9	MN5	110	3	1						x
BS9	MN5	111	3	1						
BS9	MN5	112	3	1					5	
BS9	MN5	114	3	1						x
BS9	MN5	116	1	-						x
BS9	MN5	118	1	-						x
BS9	MN5	120	3	1					2	
BS9	MN5	122	1	-				20		
BS9	MN5	124	1	-						x
BS9	MN5	126	1	-					6	
BS9	MN5	128	1	-	18 (2)					

BS9	MN5	130	1	-	18					
BS9	MN5	132	3	1	10					
BS9	MN5	134	1	-				10		
BS9	MN5	136	1	-			7			
BS9	MN5	144	2	9						
CF5	085	001	3	1	10	100	10			
CF5	085	003	3	1		100				
CF5	088	002	3	1						hill
CF7	108	002	3	1						hill
CL9	SW4	001	3	1	0		50 (1); 25 (1)			
CL9	SW4	002	3	1			25			
CL9	SW4	102	1	-		80				
CL9	SW4	161	1	-						p lot
CL9	SW4	201	1	-					0	
CL9	SW4	203	1	-	20				0	
CL9	SW4	205	3	1	30	15			2	hill
FAH	602	002	1	-		50				
FAH	602	004	2	8						
FAH	602	102	3	1	15			5 (2)		
FR2	703	002	3	1						
GI2	134	002	1	-				18		
GI2	134	004	3	1		50	50			
GI2	134	006	1	-					10	hill
GI2	134	101	3	1	50		50			
GI2	134	102	1	-						x
GI2	134	103	3	1	45		45			
GI2	138	002	3	1		18				
GI2	138	004	3	1	20				1;0.4	
GI2	138	006	3	1					3	
GI2	138	008	3	1					0.2	
GI2	138	010	3	1	18 (1); 100	10	100			ridge
GI2	138	101	3	1		25	25			
GI2	138	102	3	1	18	18				
GI2	138	103	1	-	50		10			
GI2	138	104	3	1	25	5				
GI2	138	105	3	6						
GI2	138	107	1	-	35		40			
GI5	145	001	3	1		1				base of hill
GI5	146	002	3	1	0	7				
GI5	147	001	3	1	45	35				
GI5	147	003	3	1			18			
H02	701	002	1	-						
H02	701	004	1	-						
H02	701	006	1	-						
H02	701	008	1	-						
H02	701	010	1	-						
H02	701	012	1	-						
H02	701	014	1	-						
H02	701	016	1	-						
H02	701	018	1	-						
H02	701	020	1	-						
H02	701	022	1	-						

H02	701	024	1	-						
H02	701	026	1	-						
H02	701	028	1	-						
H02	701	030	1	-						
H02	701	034	1							
H02	701	036	1	-						
H02	701	102	1	-						
H02	701	104	1	-						
H02	701	199	3	9						
H02	702	001	1	-		12	22 treeline			
H02	702	003	3	1	15				0.4	
MON	601	002	2	-						
OT7	267	005	1	-				12	0.4	
OT7	267	101	1	-	18		18			
OT7	267	102	1	-						x
OT7	267	103	3	1		7	7			
OT7	274	011	3	1		12				
OT7	279	003	1	-				100 (2)		
OT7	279	005	1	-	13	50				
OT7	279	007	3	1	12	10 ; 50		10		
OT7	279	101	2	9						
OT7	279	103	1	-	15					
OT7	279	105	1	-			12			
OT7	MN2	001	3	1	50	100		7		
OT7	MN2	002	3	1	100		50			
OT7	MN2	003	1	-		50	50			
OT7	MN2	004	1	-						x
OT7	MN2	009	3	1		0				
OT7	MN2	011	2	9						
OT7	MN2	101	1			0				
OT7	MN2	102	3	1		7		5		
OT7	MN2	103	3	1		30	10			
OT7	MN2	104	3	1			7			
OT7	MN2	105	3	1						x
OT7	MN2	106	3	1			12			
OT7	MN2	107	3	1		30				
OT7	MN2	108	1						5	
OT7	MN2	109	3	1						
OT7	MN2	110	1	-	50		8			
OT7	MN2	111	3	1					0	
OT7	MN2	112	1	-	50				5	
OT7	MN2	114	3	1	30	10	30	10		
OT7	MN2	116	3	1						x
OT7	MN2	118	1	-	30				4	
OT7	MN2	120	3	1	70					
OT7	MN2	122	3	1	70	100				
OT7	MN2	124	3	1	0	20				
OT7	MN2	126	3	1	70	70	15			
OT7	MN2	128	3	1	20	15			15	
OT7	MN2	130	1	-	85	2			1	
OT7	MN2	132	3	1	50		40			
OT7	MN2	134	3	1			20			
OT7	MN2	136	3	1	85					
OT7	MN2	140	3	1				4		
OT7	MN2	142	3	1	17	17				
OT8	281	102	3	1						
OT8	281	104	1	-						

OT8	281	106	3	1						
OT8	281	108	3	1						
OT8	281	110	1	-						
OT8	281	112	3	1						
OT8	281	114	1							
OT8	281	116	1	-						
OT8	281	118	1	-						
OT8	281	120	1	-						
OT8	281	122	3	1						
OT8	281	124	3	1						
OT8	281	126	1	-						
OT8	281	128	1	-						
OT8	281	130	1	-						
OT8	B02	001	3	1	10				0.6	
OT8	B02	002	3	1	150					
OT8	B02	003	3	1		10	18			
OT8	B02	004	3	1	100					
OT8	B02	006	3	1	100					
OT8	B02	008	2	9						
OT8	B02	010	1	-						x
OT8	B02	012	3	1			50			
OT8	B02	014	3	1			13			
OT8	B02	016	3	1	0					
OT8	B02	018	3	1	0	100	100			
OT8	B02	101	3	1						
OT8	B02	102	1	-	50					hill
OT8	B02	103	3	1						
OT8	B02	104	3	1	50					
OT8	B02	105	3	1						
OT8	B02	106	1	-	100	50	40			
OT8	B02	108	3	1						
OT8	B02	110	3	1	50					
OT8	B02	112	3	1						x
OT8	B02	114	1	-						x
OT8	B02	116	3	1			13			
OT8	B02	118	1	-	50		50		3	
OT8	B02	120	1	-	50		50			
OT8	B02	122	1	-						x
OT8	B02	124	1	-	60					
OT8	B02	126	3	1						x
OT8	B02	128	3	1						x
OT8	B02	130	2	8						
OT8	B02	132	3	1						x
OT8	B02	134	1	-	20				0.2	
OT8	B02	136	3	1						x
OT8	B02	138	3	1	33					
OT8	B02	140	3	1	75					
OT8	B02	142	5							
OT8	B02	144	2	6						
OT8	B02	146	1	-				50		
OT8	B02	148	1		100					
OT8	B02	198	1							
OT8	B02	199	3	1	25				0	
OT8	B02	201	3	1			1		1	
OT8	B12	005	1	-		50				
OT8	B12	007	1	-		50				
OT8	B12	009	1	-					0.3	x
OT8	B12	011	1	-	1					
OT8	B12	013	3	1	50	50 (2)				
OT8	B12	020	3	1						

OT8	B12	021	3	1					0.5	x
OT8	B12	022	1	-						x
OT8	B12	023	3	1		5		10		
OT8	B12	031	3	1					1	
OT8	B12	101	3	1	50		50			
OT8	B12	103	1	-			13 ; 35			
OT8	B12	105	3	1			35 (3)		3	
OT8	B12	107	3	1			10			
OT8	B12	109	1	-	50		10			
PE5	S03	002	3	1	12					
PE5	S03	004	2	1						
PE5	S03	006	3	1			12		2	
PE5	S03	008	3	1		50	50			
PE5	S03	101	3	1						
PE5	S03	103	3	6						
PE5	S03	105	1	-	50	8				
PE5	S03	107	3	1						
PE5	S03	109	1	-		15	15			
PE5	S45	001	3	1	10		12			
PE5	S45	002	2	9						
PE5	S45	003	3	1	20		10 ; 150			
PE5	S45	004	3	1	20	7		7		
PE5	S45	005	3	1	10		100			
PE5	S45	006	1	-		4			3	
PE5	S45	007	1	-	0	10	25			
PE5	S45	008	3	1	10					
PE5	S45	009	3	1	3		50			
PE5	S45	010	3	1	30				3	
PE5	S45	011	3	1	10		50			
PE5	S45	012	3	1	8				6	
PE5	S45	013	3	1	10		50			
PE5	S45	014	3	1	50	5				
PE5	S45	015	3	1	20		10			
PE5	S45	016	3	1	22	5				
PE5	S45	017	3	1	10		30			
PE5	S45	018	1	-	17					
PE5	S45	019	3	1	20		70			
PE5	S45	020	3	1	50	5			2	
PE5	S45	021	3	1	30					
PE5	S45	022	3	1	50			8		
PE5	S45	023	3	1						
PE5	S45	024	1	-						x
PE5	S45	025	3	1						
PE5	S45	026	1	-		0		18	1	
PE5	S45	027	3	1						
PE5	S45	028	3	1	18			50		
PE5	S45	029	3	1						
PE5	S45	030	1	-						x
PE5	S45	031	3	1						
PE5	S45	032	3	6						
PE5	S45	033	3	1						
PE5	S45	034	3	1	3				0.1	
PE5	S45	035	3	1						
PE5	S45	036	3	1	3				1	
PE5	S45	037	1	-						
PE5	S45	038	3	1					1	ridge
PE5	S45	039	1	-						
PE5	S45	040	3	1	10				5	
PE5	S45	041	3	1						

PE5	S45	042	3	1	10	8			1	
PE5	S45	043	1	-						
PE5	S45	044	3	1		100				
PE5	S45	045	3	1						
PE5	S45	046	3	1	50		30			
PE5	S45	047	3	1						
PE5	S45	048	3	1	50				0.4	
PE5	S45	049	1	-						
PE5	S45	050	3	1	5				4	
PE5	S45	051	1	-						
PE5	S45	052	3	1	50					
PE5	S45	053	3	1						
PE5	S45	054	3	1		8			0.1	
PE5	S45	055	3	1						
PE5	S45	056	3	1						x
PE5	S45	057	3	1						
PE5	S45	058	3	1						x
PE5	S45	059	3	1						
PE5	S45	060	2	9						
PE5	S45	061	1	-						
PE5	S45	062	3	1						
PE5	S45	063	3	1						
PE5	S45	064	3	1						x
PE5	S45	065	3	1		0				
PE5	S45	066	2	9						
PE5	S45	067	1							
PE5	S45	068	3	1	10	25				
PE5	S45	069	3	1						
PE5	S45	070	3	1						
PE5	S45	071	3	1						
PE5	S45	095	3	1	45					
PE5	S45	097	2	6						
PE5	S45	099	3	1			12		0.3	
PE5	S45	101	3	1						
PE5	S45	102	1	-		1				
PE5	S45	103	1	-						
PE5	S45	104	3	1	25					
PE5	S45	105	1							
PE5	S45	106	1							
PE5	S45	107	1							
PE5	S45	108	3	1	25					
PE5	S45	110	1		80					
PE5	S45	112	3	1		5				
PE5	S45	114	3	1						
PE5	S45	116	1	-	60					
PE5	S45	118	3	1	5				3	
PE5	S45	120	3	1	80				3	
PE5	S45	122	1	-		35				
PE5	S45	124	1	-	40		150			
PE5	S45	126	1	-	80	50				
PE5	S45	128	3	1	5	15				
PE5	S45	152	3	1	8					
PE5	S45	154	1		18					
PE5	S45	156	1	-	18					
PE5	S45	158	3	1		100				
PE5	S45	201	3	1	7	8				
PE5	S45	203	3	1	5					
PE5	S45	205	3	1						x
PE5	S45	207	3	1	5				1	
PE5	S45	209	3	1	7	50				

PE5	S45	211	3	1	2	50				
PE5	S45	213	1	-		18				
PE5	S45	215	3	1	20	150				
PE5	S45	217	1	-	35	100	100			
PE5	S45	301	3	1	25					
PE5	S45	303	2	6						
PE5	S45	305	3	1		100				
PE5	S45	307	3	1		20				
PE5	S45	309	3	1	50					
PE5	S45	311	3	1	100	35				
RF1	603	002	1	-	200					
RF1	603	004	3	1	200					
RF1	P08	001	1	-		50				hill
RF1	P08	002	3	1	100	17	100			
RF1	P08	003	3	1		11			1	
RF1	P08	004	1	-	50	17 ; 10	50	10		
RF1	P08	005	1	-		11				
RF1	P08	006	3	1		8 ; 50	8			
RF1	P08	007	3	1	12		7			hill
RF1	P08	008	3	1	0	13				
RF1	P08	009	3	1	33	8				
RF1	P08	010	3	1	17		17		2	
RF1	P08	012	3	1	17	17 ; 50				
RF1	P08	014	1	-	30		50		2	
RF1	P08	016	1	-					2	hill
RF1	P08	018	1	-			50		2	hill
RF1	P08	020	1	-						x
RF1	P08	022	1	-	35		65			
RF1	P08	101	3	1		5	5			hill
RF1	P08	102	3	1						
RF1	P08	103	1	-	50					
RF1	P08	104	3	1	70					
RF1	P08	106	1	-	80					hill
RF1	P08	108	1	-						hill
RF1	P08	110	1	-	50					hill
SC1	704	001	1	-		0		5		
SC1	704	002	1	-						x
SC1	704	003	3	1	17		17			
SC1	704	004	1	-	5					
SC1	704	005	1	-	50	0 ; 8				
SC1	704	006	1	-					2	
SC1	704	007	3	1						x
SC1	704	008	1	-			45	10		
SC1	704	009	3	1	2				0.2	
SC1	704	010	1	-						x
SC1	704	011	3	1	0				0.2	
SC1	704	012	1	-	5	4 ; 5				
SC1	704	013	5	5		20				
SC1	704	014	1	-		17	17			
WA4	P19	001	3	1	0					
WA4	P19	002	2	9						
WA4	P19	003	3	1	15	15	15			
WA4	P19	004	3	1	18 ; 100	18 ; 100	18 ; 100			
WA4	P19	005	1	-	30	30	30			
WA4	P19	006	3	1	18 ; 33	18 ; 33	18 ; 33			
WA4	P19	007	3	1	24	7	10			
WA4	P19	008	3	6						

WA4	P19	009	3	1	8		8			
WA4	P19	010	3	1	12 (2)		12			7 from 008
WA4	P19	011	3	1	0	10	10	150		
WA4	P19	012	3	1	18 ; 20		10		1	
WA4	P19	013	3	1	0					
WA4	P19	014	3	1	30	30	30			
WA4	P19	015	3	1			11			
WA4	P19	016	3	1	7		7		2.5	
WA4	P19	017	3	1						
WA4	P19	018	5	-						
WA4	P19	019	1	-						
WA4	P19	020	3	1		50			1	
WA4	P19	022	1	-		50			1	
WA4	P19	024	1	-						x
WA4	P19	026	3	1					3	
WA4	P19	028	1	-					3	
WA4	P19	030	3	1		10				
WA4	P19	032	1	-	7			3		
WA4	P19	034	1	-	11 ; 18			5		
WA4	P19	036	3	1	18		18			
WA4	P19	038	1	-	card					
WA4	P19	040	3	6						
WA4	P19	042	3	1	25					
WA4	P19	044	3	1	33					
WA4	P19	046	1	-		7				
WA4	P19	048	3	1						
WA4	P19	050	3	1						
WA4	P19	051	2	9						
WA4	P19	053	1	-					2	
WA4	P19	055	3	1		6		40		
WA4	P19	099	3	6						
WA4	P19	102	1	-	18	18	18			
WA4	P19	104	3	1					4	
WA4	P19	106	1	-		20				
WA4	P19	108	1	-		25				
WA4	P19	110	1	-		65				
WA4	P19	112	1	-		27				
WA4	P19	114	3	1		85				
WA4	P19	116	3	1		85				
WA4	P19	118	3	1			150			
WA4	P19	120	1	-	20					
WA4	P19	122	1	-	80		50			
WA4	P19	124	1	-	40					
WA4	P19	161	1	-						
WA4	P19	163	1	-	50	3	3			
WA4	P19	165	3	1						
WA4	P19	167	1	-	20					
WA4	P19	169	3	1						
WA4	P19	171	1	-						
WA4	P19	175	3	1	18					
WA4	P19	177	3	1	18					
WA4	P19	179	1	-		5				
WA4	P19	181	3	1		25				
WA4	P19	183	1	-						
WA4	P19	185	3	1						
WA4	P19	187	1	-		30				
WA4	P19	189	1	-	20					
WA4	P19	191	1	-	20					
WA4	P19	193	3	1	25				1	
WA4	P19	195	3	1					0.3	

WA4	P19	197	1	-	20	7 ; 14	3			
WA4	P19	199	1	-		10 ; 20				