

PROGRESS REPORT
1989 GREAT LAKES BEAR HABITAT STUDY

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Seven hundred and ninety five black bear scats were collected and analyzed in 1989, more than doubling the 335 of 1988. This was made possible by the efforts of 154 field personnel representing all 7 National Forests, 2 State Departments of Natural Resources, 1 National Park, and 1 Indian Reservation (Table 1). It was also made possible by eleventh-hour funding from the U.S. Forest Service, the National Fish and Wildlife Foundation, the U.S. Fish and Wildlife Service, the Wildlife Research Institute, the Max McGraw Wildlife Foundation, 4 National Forests, and 3 paper companies. Many thanks to these people, agency leaders, organizations, and the people who worked behind the scenes to coordinate the funding.

For this progress report, we tabulated scat contents by National Forest, Indian Reservation, National Park, State, and Bailey's Ecoregions (Table 2 and Figs. 1 and 2). The scat content tables are longer this year because we included percent frequency as well as percent volume.

Grass and ants were important spring and early summer foods in all three Ecoregions (2111, 2112, and 2113). Later in the year, the two most important foods were wild sarsaparilla berries and blueberries in Ecoregion 2111, cherries and blueberries in Ecoregion 2112, and beechnuts and cherries in Ecoregion 2113. Berry survey forms are still coming in, and we are waiting for the last of these to be turned in before trying to interpret differences in diet between 1988 and 1989.

We also are still working on unknowns and are seeking the help of several specialists in that effort. For macroscopic plant fragments, we are working with Dr. Anita Cholewa, Curator of the Herbarium at the University of Minnesota. For microscopic plant fragments (mush, rather than pieces of leaves), we are working with Dr. Bruce Davitt of Washington State University. Dr. Davitt has developed a method for identifying plants from cell shapes. For seed identification, we are working with the Anthropology Department of Michigan State University. For hair identification (mostly neonate hair), we are seeking the help of mammalogists from the United States and Canada.

We have more vegetative unknowns than have been reported in most other studies because we departed from the common practice of assuming that the vegetative mush in scats is similar in composition to the identifiable plant fragments. We took this cautious approach because we learned from our habituated bears that some succulents do not appear in scats as identifiable fragments and can only be identified in scats by microscopic examination of the plant cells. Fortunately, bears cannot digest the cellulose of cell walls.

In 1989, scats were collected throughout spring, summer, and fall rather than only in summer as in 1988. Thus, the efforts of the 154 field personnel in 1989 added greatly to our knowledge of bear habitat needs in the Great Lakes region.

The objective of this work is to provide information that forest managers can easily use to make informed decisions concerning black bear habitat in the North Central States. The steps toward this are straightforward:

1. Identify important foods in scats.
2. Determine the cover types that produce those foods.
3. Determine the forest management practices that produce those cover types.

To proceed through steps 2 and 3, we will need the help of forest ecologists in each National Forest or Ecoregion. Our goal is to refine the "Black Bear Habitat Suitability Index Model" (Rogers and Allen 1987) for use in each National Forest and Ecoregion.

This is the first widespread effort of this kind. Everyone's cooperation has already made it a success. Some of the scat collectors like Adrian Miller (81 scats), Sharon Hutkowski (57), Bill Route (38), Stanley Johns (35), Hugh Dougher (29), Steve Kolbach (28), Marty Williams (22), Doug Wagner (20), and Jerry Mohlman (20) became household names around the lab. We remember Mike Bablick for sending in the largest scat (1,731 grams, 3.8 lbs).

The scat collection phase has now ended. Cooperators can erase their search images for scats. The post office can now deliver to North Central without opening their vehicle windows. I can finally tell the mailman that his suspicions about the box contents were correct. Sally Scott is returning to school to get a teaching certificate after seeing more bear scats than almost anyone in the world. She and the rest of us thank everyone for making this first phase of the project a success with 1,130 scats.

We will continue to work with specialists to identify unknowns and will eventually consult with forest ecologists to put the results in a form useful to managers.



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States:	
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Table 1 BEAR SCAT COLLECTORS 1989

of Scats Collected

WISCONSIN (state forests, county forests and private lands)

M. Winski	1
Jeff Wilson	6
Carl McIlquham	5
Paul Peterson	2
Adrian Miller	1
J. Mizzi	1
Steve Jackson	6
Sam Moore	3
Cliff Wiita	3
Sharon Larson	.5
Rob Dall	1.5
Fred Fouse	2
Pat Berringer	5
R. Amundson	1
Gary Dunsmore	1
A. Belleman	1
James Vokolek	1
Bob Schare	2
Linda Parker	1
Dave Evenson	1
Cliff Knudsen	3
Adrian Wydeven	1
W. Cox	1
Total Scats Collected	50

MICHIGAN (state forests, county forests and private lands)

Mrs. Lunning	6
Doug Wagner	20
Stephen Rodock	1
Doug Lunning	8
Mike Koss	18
J. Wilson	1
Tom Bach	1
Carl Brousseau	13
John Moon	18
Larry Visser	3
Alan Asp	2
Rob Aho	13
Glen Matthews	3
Terry Gouza	3
Tom Daves	1
Bob Aldrich	2
Jerry Mohlman	20
Russ Nelson	1
John Hendrickson	3
W. Loope	1
Stoll	3
Wilcox	1
Craig Outwater	1
Jensen	1
Total Scats Collected	144

VOYAGEURS NATIONAL PARK

Bill Route	37.5
Karin Kozié	1
Hugh Dougher	29
Sharon Hutkowski	47
Paul Nordeen	9
Marty Stage	10
Jay Liggett	9
Bruce Malloy	2
Peter Gogan	3
Deb Clancy	1
Dave Soleim	1
Linda Fuselier	23.5

Total Scat Collected	173

SUPERIOR NATIONAL FOREST

Shawn Paul	1
Lynn Rogers	2
Tara Tyrrell	3
John Luepke	1
Gary Jepson	3
Paul Smith	1
Steve Watson	6
John Avery	2
Ellen Hawkins	1
Gary Jepser	1
John Aures	1
Greg Wilker	2
Andy Royle	4
Janie Crannell	.5
John Todd	.5
Kyran Kunkel	1
Karin Kozié	7
Evan Sandstede	1
Jenny Pearson	1
Andrea Benson	1

Total Scat Collected	40

OTTAWA NATIONAL FOREST

Wigand	1
Kenton Marking Crew	13
Milan Williams	3
Inmate Crew	3
Steve Kolbach	2
Floyd Meyers	10
Stan Johns	35
Karen shaffer	14
Lani Cichy	7
Deb Clancy	13
John Holmes	9
L. Kariainen	7
Glen Wankel	9
Joni Bossardt	1
Paul Busch	7
Jerry Edde	2
Rick Chiochios	6
B. Peacock	1
Cindy Brown	1
Marilyn Keifenheim	2
Bob Williams	2
David Franzen	5
Larry Mellstrom	6
Rupport	1

Total Scat Collected	160

MENOMINEE INDIAN RESERVATION

Adrian Miller	81
Steve Margitan	1
Paul Peterson	1

Total Scat Collected	83

HURON-MANISTEE NATIONAL FOREST

Marty Williams	22
Damien Lunning	3
Holland	.5
P. Huber	1
Paul Schmidtke	.5
David Reff	.5
Mark Patterson	1
George Irvine	1
Marlene Haason	1
Bednarski	1
Michealski	6
Rex Ennis	4
Ulassis	1
Hough	1
D. Munson	1.5

Total Scats Collected	45

CHIPPEWA NATIONAL FOREST

R.W. Paddock	1.5
Bob Salmonson	1
Norm Matson	7.5
Bob White	1
B. Paulson	.5
K. Bruns	1.5

Total Scats Collected	13

CHEQUAMEGON NATIONAL FOREST

Micheal Bablick	2
Wisconsin Conservation	3
Jeff Wilson	1
Dean Granholm	2
Susanne Adams	1
Steve Kolbach	2

Total Scats Collected	11

NICOLET NATIONAL FOREST

James Ashbrenner	2
Joe Kastenhok	1
Janet Mizzi	2.5
Greg Maser	1
Paul Peterson	1
Jack Stinski	2
Steve Kolbach	28
Randy Smits	2
Kim Broullire	2.5
M. Steck	3
Randy Saltenberger	1
Gary Zimmer	1
Peczynski	1
Fred Fouse	1

Total Scats Collected	49

HIAWATHA NATIONAL FOREST

Kevin Doran	6.8
Dennis Neitzke	4
Tom Moris	2.5
Joe Carrick	3
Becky Boyer	2.3
Kelle Zach	5.5
Chris Thorton	.5
Tom Kurtz	2
Girard	.3

Total Scats Collected	27

Table 2. Contents of 795 black bear scats collected in the Great Lakes Region, 1989

ECOLOGICAL REGION 2111

Items	% Volume	% Frequency
ASH SEED	0.004	0.439
CEDAR	0.004	0.439
CHERRY SPP. SEEDS	0.004	0.439
HAWTHORN SPP. SEEDS	0.004	0.439
QUERCUS SPP. ACORN SHELLS	0.004	0.439
SPHAGNUM MOSS	0.004	0.439
UNKNOWN BUD CASES	0.004	0.439
EGG SHELLS	0.009	0.439
JACK IN THE PULPIT CORM SKINS	0.009	0.439
JUNIFER SEEDS	0.009	0.439
UNKNOWN BUDS	0.009	0.439
FAWN HOOF	0.013	0.439
HONEYSUCKLE LEAVES	0.013	0.439
SWEET FERN FRUIT BURS	0.013	0.439
STRAWBERRY LEAVES	0.013	0.439
WILD LETTUCE LEAVES	0.013	0.439
GRASS SEED	0.018	0.877
WOODY DEBRIS	0.018	0.439
INTERRUPTED FERN LEAVES	0.022	0.439
UNKNOWN FERN	0.022	0.439
WATERMELON SEEDS	0.022	0.439
BUNCHBERRIES	0.026	0.439
INSECT LARVAE	0.026	0.877
ARCTOSTAPHYLOS LEAVES	0.031	0.877
PEANUT SHELLS	0.031	0.439
WOODCHICK HAIR	0.035	0.439
ASPEN TWIGS	0.044	0.439
WILLOW CATKINS	0.044	0.439
BUNCHBERRY SEEDS	0.048	0.877
RUBUS SPP. LEAVES	0.048	0.877
UNKNOWN CATKINS	0.061	2.193
WILLOW BUD CASES	0.066	0.439
STRAWBERRY SEEDS	0.075	0.439
BIRCH SPP. LEAVES	0.088	0.439
UNKNOWN FERN LEAVES	0.088	0.877
BANEBERRY SEEDS	0.110	0.877
CANTELOUP SEEDS	0.110	0.439
ALUMINUM FOIL	0.114	0.439
RHAMNUS SPP. SEEDS	0.123	1.316
PAPER	0.132	0.877
HONEYSUCKLE SEED	0.167	0.439
PINE NEEDLES	0.219	0.439
INSECT BODY SEGMENTS	0.228	1.316
ANIMAL SKIN	0.263	1.316
FISH BONE	0.276	0.439
BEEETLES	0.303	1.316
ANT PUPAE	0.311	4.386
ASPEN BUD CASES	0.368	4.386
UNKNOWN SEEDS	0.368	4.386
BEAR HAIR	0.373	0.877
WILD CALLA STEMS	0.382	0.877
CORN KERNALS	0.417	0.439
ASPEN LEAF STEMS	0.425	1.316

DOGWOOD SPP. SEEDS	0.425	0.877
CRAYFISH	0.439	0.439
INTERRUPTED FERN STEMS	0.439	0.439
JACK IN THE PULPIT LEAVES	0.439	0.439
ARCTOSTAPHYLOS SPP. SEEDS	0.443	0.877
PEAVINE STEMS	0.443	1.316
BLUEBERRY SPP. LEAVES	0.447	11.404
BONE FRAGMENTS	0.482	4.386
RUBUS SPP. SEEDS	0.535	3.070
SERVICEBERRY SPP. SEEDS	0.561	3.947
BLUEBERRY SPP. BERRIES	0.741	3.070
GRAVEL	0.768	1.316
UNKNOWN STEMS	0.794	2.632
UNKNOWN LEAVES	0.807	1.754
OATS	0.829	0.877
SUNFLOWER SEEDS	1.070	1.754
FISH SCALES	1.114	2.632
UNKNOWN ANIMAL HAIR	1.175	6.140
CLOVER SPP. LEAVES	1.456	3.509
FAWN AND DEER HAIR	1.934	5.263
PLASTIC	1.974	3.509
HORNETS	2.285	9.211
PEAVINE SPP. LEAVES	2.425	6.140
ASPEN CATKINS	3.961	6.579
WILD CALLA LEAVES	4.482	8.333
UNKNOWN VEGETATION	4.518	14.035
CATERPILLARS	4.759	8.772
UNKNOWN	5.298	9.211
ANTS	6.518	35.088
THOROUGHLY DIGESTED PLANT MAT.	6.996	8.333
WILD SARSAPARILLA SEEDS	7.224	21.053
BLUEBERRY SPP. SEEDS	8.627	16.226
GRASS SPP.	9.184	34.211
ASPEN LEAVES	10.776	15.789

Number of Scats: 228

ECOLOGICAL REGION 2112

Items	% Volume	% Frequency
DEER TOOTH	0.003	0.302
CEDAR	0.006	0.302
PINE CONE SCALES	0.006	0.302
WOODY DEBRIS	0.009	0.302
BEAKED HAZELNUT HUSK	0.012	0.302
APPLE SPP. FRUIT SKINS	0.015	0.302
BIRD FEET	0.015	0.302
CLOVER FLOWERS	0.015	0.604
CANADIAN PLUM FRUIT SKINS	0.015	0.302
GRASS SEED	0.015	0.906
PEAR SEEDS	0.015	0.302
SPHAGNUM MOSS	0.015	0.302
BETLES	0.018	0.302
CHOKEBERRY SEEDS	0.027	0.302
EGG SHELLS	0.030	0.302
RUBUS SPP. FRUIT	0.030	0.302
UNKNOWN FERN LEAVES	0.030	1.208
UNKNOWN CATKINS	0.033	0.604
SERVICEBERRY SPP. LEAVES	0.045	0.604
UNKNOWN FLOWER	0.054	1.813
HARE BONE FRAGMENTS	0.060	0.302
MAPLE SPP. SAMARAS	0.060	1.511
STRAWBERRY SEEDS	0.060	0.302
WILD CALLA STEMS	0.060	0.302
ASPEN BUD CASES	0.073	0.604
RIBES SEEDS	0.073	0.604
ELDERBERRY SEEDS	0.076	0.302
DOGWOOD SPP. SEEDS	0.085	0.604
UNKNOWN BUD CASES	0.091	0.302
OATS	0.094	0.906
ANT PUPAE	0.097	1.511
CHERRY LEAVES	0.106	0.906
MAIANthemum CANADENSIS LEAVES	0.106	0.604
BEAR HAIR	0.121	0.604
PEAR FRUIT SKIN	0.121	0.302
SWEET FLAG IRIS	0.121	0.302
VIBURNUM SPP. SEEDS	0.121	0.302
BIRD BONES	0.130	0.302
PLASTIC	0.136	0.604
TRAP BAIT	0.151	0.302
ANIMAL SKIN	0.175	1.511
SAMBUCUS SPP. SEEDS	0.175	0.302
ASPEN LEAVES	0.184	0.604
FEATHERS	0.196	2.115
MOUNTAIN ASH SEEDS	0.196	0.302
BONE FRAGMENTS	0.208	2.115
INSECT LARVAE	0.227	0.302
UNKNOWN SEEDS	0.227	1.511
PEAVINE STEMS	0.239	0.302
ASPEN CATKINS	0.242	0.302
APPLE SPP. FRUIT PIECES	0.281	0.302
HARE HAIR	0.287	0.906
BRACKEN FERN	0.305	1.511

APPLE SPP. SEEDS	0.329	2.417
JACK IN THE PULPIT CORM SKINS	0.338	3.323
BEECH BUD CASES	0.347	1.208
RHAMNUS SPP. SEEDS	0.350	2.115
BLUEBERRY SPP. BERRIES	0.356	1.511
MAPLE SPP. LEAVES	0.356	1.208
BLUEBERRY SPP. LEAVES	0.390	2.417
WILD LETTUCE LEAVES	0.417	0.906
HAWKWEED SPP. LEAVES	0.444	1.511
INSECT BODY SEGMENTS	0.474	1.511
UNKNOWN NUT MEAT	0.495	0.604
UNKNOWN FRUIT SKINS	0.511	1.511
QUERCUS SPP. ACORN SHELLS	0.514	2.115
BEAKED HAZELNUT SHELLS	0.580	2.417
BEECH LEAVES	0.610	1.208
FAWN AND DEER HAIR	0.647	3.625
HORNETS	0.782	6.042
WILD SARSAPARILLA SEEDS	0.882	3.625
PEAVINE SPP. LEAVES	0.912	2.417
CORN KERNALS	1.148	1.208
CLOVER SPP. LEAVES	1.218	2.719
HAWTHORN SPP. SEEDS	1.251	2.417
JACK IN THE PULPIT LEAVES	1.296	2.719
GRASSHOPPERS	1.320	4.230
SERVICEBERRY SPP. SEEDS	1.393	3.625
JACK IN THE PULPIT STEMS	1.405	2.719
WINTERBERRY SEEDS	1.508	3.021
UNKNOWN ANIMAL HAIR	1.650	6.949
SWEET CICELY LEAVES	2.236	4.230
WILD CALLA LEAVES	2.269	3.021
UNKNOWN STEMS	2.556	9.366
RUBUS SPP. SEEDS	2.580	9.970
UNKNOWN	2.595	5.740
UNKNOWN VEGETATION	2.924	9.063
BLUEBERRY SPP. SEEDS	3.042	7.251
ANTS	3.341	16.918
THOROUGHLY DIGESTED PLANT MAT.	6.792	7.553
GRASS SPP.	9.882	25.076
CHERRY SPP. SEEDS	34.550	41.692

Number of Scats: 331

ECOLOGICAL RESEARCH FILES

Items	% Volume	% Frequency
ANIMAL CLAWS	0.004	0.424
BLUEBERRY SPP. SEEDS	0.004	0.424
HARE NAILS	0.004	0.424
BEEES	0.008	0.424
HEMLOCK NEEDLES	0.008	0.424
HEMLOCK SEEDS	0.008	0.424
APPLE STEM	0.013	0.424
BLUEBERRY SPP. LEAVES	0.013	0.424
FEATHERS	0.013	0.424
STRING	0.013	0.424
ANIMAL SKIN	0.017	0.424
UNKNOWN BRACHTS	0.017	1.271
UNKNOWN FLOWER	0.017	0.847
BEECH LEAVES	0.021	1.271
BEAKED HAZELNUT MEAT	0.021	0.424
MAPLE SPP. SAMARAS	0.021	1.271
SMALL RODENT HAIR	0.021	0.424
UNKNOWN BERRIES	0.021	0.424
GRASSHOPPERS	0.025	0.424
BUNCHBERRY LEAVES	0.030	0.424
EGG SHELLS	0.030	0.424
RHAMNUS SPP. SEEDS	0.030	0.424
ASPEN BUD CASES	0.038	2.542
HARE HAIR	0.038	0.424
HAWKWEED SPP. LEAVES	0.042	0.424
WILLOW CATKINS	0.042	0.424
BEAR HAIR	0.047	1.695
CANADIAN PLUM SEEDS	0.051	0.424
STRAWBERRY LEAVES	0.051	0.847
MAPLE SPP. LEAVES	0.064	0.847
PEAVINE SPP. LEAVES	0.064	0.847
UNKNOWN BARK	0.064	0.424
CIGARETT BUTTS	0.068	0.424
HONEYCOMB	0.068	0.424
PAPER	0.102	0.847
HARE BONE FRAGMENTS	0.106	0.424
BEECH BUD CASES	0.114	3.390
UNKNOWN FRUIT SKINS	0.119	1.271
UNKNOWN LEAVES	0.123	0.847
BLUEBERRY SPP. BERRIES	0.131	1.271
MUSSEL SHELLS	0.148	0.424
DUCKWEED	0.157	0.847
WOODY DEBRIS	0.157	2.542
SPHAGNUM MOSS	0.169	0.424
CLOVER SPP. LEAVES	0.186	0.847
ANT PUPAE	0.191	0.847
HONEYSUCKLE SEEDS	0.199	0.424
RIBES SEEDS	0.212	0.847
APPLE SPP. SEEDS	0.216	1.271
HAWTHORN SPP. SEEDS	0.220	0.847
APPLE SPP. FRUIT PIECES	0.246	0.424
BONE FRAGMENTS	0.275	2.542
INTERRUPTED FERN STEMS	0.305	0.424

QUERCUS SPP. ACORN MEAT	0.331	0.424
QUERCUS SPP. ACORN SHELLS	0.373	1.695
RUBUS SPP. LEAVES	0.381	0.424
CATERPILLARS	0.424	0.424
BEAKED HAZELNUT HUSK	0.424	0.424
UNKNOWN CATKINS	0.424	0.424
INSECT LARVAE	0.441	1.271
ASPEN CATKINS	0.479	1.695
UNKNOWN BUDS	0.483	2.542
STRAWBERRY SEEDS	0.496	0.847
UNKNOWN FERN	0.496	1.271
FAWN AND DEER HAIR	0.508	2.119
PLASTIC	0.559	2.542
MOUNTAIN ASH SEEDS	0.576	2.119
VIBURNUM SPP. SEEDS	0.589	2.119
JACK IN THE PULPIT CORM SKINS	0.593	4.661
ASPEN LEAVES	0.669	3.390
JACK IN THE PULPIT LEAVES	0.771	1.695
SERVICEBERRY SPP. SEEDS	0.822	1.695
WILD CALLA STEMS	0.826	1.271
INSECT BODY SEGMENTS	0.860	1.271
BEETLES	0.898	2.966
UNKNOWN SEEDS	0.919	9.746
BRACKEN FERN	0.924	4.661
DOGWOOD SPP. SEEDS	0.941	2.119
BEAKED HAZELNUT SHELLS	0.962	3.814
SWEET CICELY LEAVES	1.195	1.695
WILD CALLA LEAVES	1.309	1.695
UNKNOWN ANIMAL HAIR	1.403	7.627
UNKNOWN STEMS	1.432	3.814
UNKNOWN VEGETATION	1.903	6.780
CORN KERNELS	1.907	2.119
HORNETS	2.102	6.356
RUBUS SPP. SEEDS	2.288	5.508
WINTERBERRY SEEDS	2.517	2.966
THOROUGHLY DIGESTED PLANT MAT.	3.271	5.085
WILD SARSAPARILLA SEEDS	5.407	11.441
UNKNOWN	5.864	10.593
ANTS	7.042	21.610
GRASS SPP.	9.047	32.627
CHERRY SPP. SEEDS	10.195	14.831
BEECH NUT HULLS	22.555	29.237

Number of Scats: 236

LOWER PENINSULA OF MICHIGAN, MAY 1989

Items	% Volume	% Frequency
BETLES	0.400	20.000
UNKNOWN SEEDS	0.600	20.000
UNKNOWN VEGETATION	1.000	20.000
STRAWBERRY LEAVES	2.000	20.000
UNKNOWN ANIMAL HAIR	2.400	40.000
UNKNOWN BARK	3.000	20.000
UNKNOWN BUDS	4.000	20.000
INSECT BODY SEGMENTS	6.600	20.000
GRASS SPP.	11.400	60.000
UNKNOWN STEMS	16.200	60.000
BRACKEN FERN	26.000	60.000
UNKNOWN	26.400	40.000

Number of Scats: 5

LOWER PENINSULA OF MICHIGAN, JUNE 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.053	5.263
ASPEN BUD CASES	0.105	10.526
BEAR HAIR	0.105	5.263
PLASTIC	0.105	5.263
ANIMAL SKIN	0.211	5.263
UNKNOWN BUDS	0.263	5.263
WOODY DEBRIS	0.263	5.263
ASPEN CATKINS	0.368	5.263
PEAVINE SPP. LEAVES	0.421	5.263
JACK IN THE PULPIT CORM SKINS	0.474	5.263
ASPEN LEAVES	1.632	15.789
DUCKWEED	1.842	5.263
BRACKEN FERN	3.368	26.316
UNKNOWN STEMS	3.737	5.263
QUERCUS SPP. ACORN SHELLS	4.000	10.526
INSECT BODY SEGMENTS	4.211	5.263
JACK IN THE PULPIT LEAVES	4.526	10.526
CATERPILLARS	5.263	5.263
BEAKED HAZELNUT HUSK	5.263	5.263
GRASS SPP.	5.737	36.842
UNKNOWN FERN	6.000	10.526
UNKNOWN VEGETATION	8.316	26.316
ANTS	10.211	31.579
THOROUGHLY DIGESTED PLANT MAT.	13.421	15.789
UNKNOWN	20.105	26.316

Number of Scats: 19

LOWER PENINSULA OF MICHIGAN, JULY 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.429	14.286
UNKNOWN SEEDS	0.571	14.286
BETLES	0.857	14.286
THOROUGHLY DIGESTED PLANT MAT.	1.571	14.286
GRASS SPP.	2.857	14.286
WOODY DEBRIS	2.857	14.286
ANTS	10.286	42.857
UNKNOWN STEMS	11.429	14.286
WILD SANSAPARILLA SEEDS	12.143	28.571
PLASTIC	12.714	14.286
SERVICEBERRY SPP. SEEDS	13.714	14.286
CORN KERNELS	14.286	14.286
UNKNOWN	16.286	28.571

Number of Scats: 7

LOWER PENINSULA OF MICHIGAN, AUGUST 1989

Items	% Volume	% Frequency
HORNETS	0.111	11.111
BRACKEN FERN	0.222	11.111
UNKNOWN FRUIT SKINS	0.333	11.111
WOODY DEBRIS	0.556	11.111
UNKNOWN STEMS	1.111	11.111
GRASS SPP.	2.000	33.333
JACK IN THE PULPIT CORM SKINS	2.778	11.111
WILD SANSAPARILLA SEEDS	3.667	22.222
UNKNOWN VEGETATION	6.000	33.333
MOUNTAIN ASH SEEDS	9.889	44.444
UNKNOWN	18.778	22.222
ANTS	26.778	55.556
CORN KERNELS	27.778	33.333

Number of Scats: 9

LOWER PENINSULA OF MICHIGAN, SEPTEMBER 1989

Items	% Volume	% Frequency
BEAKED HAZELNUT SHELLS	0.154	7.692
BEAR HAIR	0.231	7.692
UNKNOWN ANIMAL HAIR	0.231	7.692
UNKNOWN FERN	0.231	7.692
DOGWOOD SPP. SEEDS	0.308	7.692
BEAKED HAZELNUT MEAT	0.385	7.692
BUNCHBERRY LEAVES	0.538	7.692
BRACKEN FERN	0.769	7.692
QUERCUS SPP. ACORN SHELLS	0.923	15.385
UNKNOWN VEGETATION	1.385	7.692
SPHAGNUM MOSS	3.077	7.692
VIBURNUM SPP. SEEDS	3.231	15.385
MOUNTAIN ASH SEEDS	3.615	7.692
INTERRUPTED FERN STEMS	5.538	7.692
QUERCUS SPP. ACORN MEAT	6.000	7.692
UNKNOWN	7.462	7.692
CORN KERNELS	7.692	7.692
HORNETS	25.077	38.462
CHERRY SPP. SEEDS	33.154	38.462

Number of Scats : 13

LOWER PENINSULA OF MICHIGAN, OCTOBER 1989

Items	% Volume	% Frequency
SERVICEBERRY SPP. SEEDS	0.429	14.286
APPLE SPP. SEEDS	0.714	14.286
VIBURNUM SPP. SEEDS	1.429	14.286
HORNETS	13.571	14.286
CHERRY SPP. SEEDS	14.286	14.286
WINTERBERRY SEEDS	69.571	71.429

Number of Scats: 7

UPPER PENINSULA OF MICHIGAN, MAY 1989

Items	% Volume	% Frequency
ANIMAL SKIN	0.056	2.778
CEDAR	0.056	2.778
* UNKNOWN FERN LEAVES	0.056	2.778
SPHAGNUM MOSS	0.139	2.778
* FAWN AND DEER HAIR	0.167	5.556
PLASTIC	0.278	2.778
UNKNOWN FLOWER	0.278	8.333
* HAWKWEED SPP. LEAVES	0.417	2.778
MAPLE SPP. LEAVES	0.556	2.778
* JACK IN THE PULPIT CORM SKINS	0.611	5.556
* ASPEN BUD CASES	0.667	5.556
* ANTS	1.389	8.333
* PEAVINE SPP. LEAVES	1.389	5.556
* WILD CALLA LEAVES	1.806	2.778
* JACK IN THE PULPIT STEMS	1.944	5.556
UNKNOWN	2.139	11.111
* ASPEN CATKINS	2.222	2.778
* WILD LETTUCE LEAVES	2.222	2.778
BEECH BUD CASES	2.500	5.556
INSECT BODY SEGMENTS	2.500	2.778
* JACK IN THE PULPIT LEAVES	4.056	8.333
BEECH LEAVES	5.556	8.333
THOROUGHLY DIGESTED PLANT MAT.	5.667	11.111
UNKNOWN STEMS	5.944	36.111
UNKNOWN VEGETATION	11.500	27.778
* SWEET CICELY LEAVES	16.000	27.778
* GRASS SPP.	29.889	66.667

Number of Scats: 36

May

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UPPER PENINSULA OF MICHIGAN, JUNE 1989

Items	% Volume	% Frequency
* CLOVER FLOWERS	0.018	1.818
DEER TOOTH	0.018	1.818
UNKNOWN CATKINS	0.018	1.818
* UNKNOWN FERN LEAVES	0.036	1.818
* ANT PUPAE	0.055	1.818
UNKNOWN FLOWER	0.073	3.636
GRASS SEED	0.091	5.455
* MAPLE SPP. SAMARAS	0.091	3.636
PEAR SEEDS	0.091	1.818
* FEATHERS	0.127	1.818
* EGG SHELLS	0.182	1.818
* WILD LETTUCE LEAVES	0.327	1.818
ANIMAL SKIN	0.364	3.636
BEECH BUD CASES	0.364	1.818
CHERRY LEAVES	0.545	1.818
MAIANTHEMUM CANADENSIS LEAVES	0.636	3.636
* RUBUS SPP. SEEDS	0.691	5.455
* SWEET CICELY LEAVES	0.691	3.636
* INSECT BODY SEGMENTS	0.727	1.818
PEAR FRUIT SKIN	0.727	1.818
* SWEET FLAG IRIS	0.727	1.818
* BIRD BONES	0.782	1.818
* BONE FRAGMENTS	0.927	5.455
* PEAVINE STEMS	1.436	1.818
* JACK IN THE PULPIT CORM SKINS	1.545	14.545
UNKNOWN	1.818	1.818
MAPLE SPP. LEAVES	1.855	3.636
* HAWKWEED SPP. LEAVES	1.945	5.455
* FAWN AND DEER HAIR	2.273	5.455
* ANTS	2.327	21.818
UNKNOWN ANIMAL HAIR	2.418	3.636
UNKNOWN FRUIT SKINS	3.018	7.273
* PEAVINE SPP. LEAVES	3.182	7.273
UNKNOWN VEGETATION	3.927	10.909
THOROUGHLY DIGESTED PLANT MAT.	5.091	5.455
* JACK IN THE PULPIT LEAVES	5.145	10.909
* WILD CALLA LEAVES	6.182	7.273
* CLOVER SPP. LEAVES	7.145	10.909
* JACK IN THE PULPIT STEMS	7.182	12.727
* UNKNOWN STEMS	8.673	20.000
* GRASS SPP.	26.436	50.909

Number of Scats: 55

UPPER PENINSULA OF MICHIGAN, JULY 1989

Items	% Volume	% Frequency
ANIMAL SKIN	0.028	2.778
MAPLE SPP. LEAVES	0.028	2.778
UNKNOWN SEEDS	0.028	2.778
BEECH LEAVES	0.056	2.778
* CLOVER SPP. LEAVES	0.111	2.778
* CLOVER FLOWERS	0.111	2.778
UNKNOWN FLOWER	0.111	2.778
BEECH BUD CASES	0.139	2.778
* INSECT BODY SEGMENTS	0.139	5.556
* BONE FRAGMENTS	0.167	5.556
BEECHES	0.167	2.778
* UNKNOWN FERN LEAVES	0.167	5.556
MAPLE SPP. SAMARAS	0.361	5.556
* SERVICEBERRY SPP. LEAVES	0.389	2.778
BEAR HAIR	0.417	2.778
* WILD SARSAPARILLA SEEDS	0.444	8.333
* ANT PUPAE	0.472	5.556
BRACKEN FERN	0.694	2.778
ELDERBERRY SEEDS	0.694	2.778
* BEAKED HAZELNUT SHELLS	0.694	2.778
* RHAMNUS SPP. SEEDS	0.694	2.778
* FEATHERS	0.778	5.556
UNKNOWN BUD CASES	0.833	2.778
* HORNETS	0.944	5.556
TRAP BAIT	1.389	2.778
* CHERRY SPP. SEEDS	1.583	5.556
SAMBUCUS SPP. SEEDS	1.611	2.778
* HARE HAIR	1.667	2.778
* RUBUS SPP. SEEDS	1.861	8.333
* BLUEBERRY SPP. BERRIES	1.944	5.556
UNKNOWN STEMS	1.944	8.333
UNKNOWN ANIMAL HAIR	2.056	8.333
* SERVICEBERRY SPP. SEEDS	2.972	16.667
BLUEBERRY SPP. LEAVES	3.389	13.889
UNKNOWN VEGETATION	4.056	11.111
* WILD CALLA LEAVES	4.667	5.556
* GRASS SPP.	5.167	22.222
UNKNOWN	6.944	13.889
* GRASSHOPPERS	7.444	13.889
* BLUEBERRY SPP. SEEDS	8.528	22.222
THOROUGHLY DIGESTED PLANT MAT.	16.278	16.667
* ANTS	17.833	44.444

Number of Scats: 36

UPPER PENINSULA OF MICHIGAN, AUGUST 1989

Items	% Volume	% Frequency
* APPLE SPP. SEEDS	0.016	1.613
BLUEBERRY SPP. LEAVES	0.048	3.226
* CHERRY LEAVES	0.048	1.613
* BEAKED HAZELNUT HUSK	0.065	1.613
BIRD FEET	0.081	1.613
* RUBUS SPP. FRUIT	0.161	1.613
BONE FRAGMENTS	0.194	3.226
UNKNOWN STEMS	0.194	1.613
* DOGWOOD SPP. SEEDS	0.323	1.613
* HARE BONE FRAGMENTS	0.323	1.613
STRAWBERRY SEEDS	0.323	1.613
* RIBES SEEDS	0.387	3.226
* HAWKWEED SPP. LEAVES	0.403	1.613
* FAWN AND DEER HAIR	0.435	4.839
FEATHERS	0.484	6.452
ANIMAL SKIN	0.565	1.613
HARE HAIR	0.565	3.226
UNKNOWN SEEDS	0.661	3.226
* BLUEBERRY SPP. BERRIES	0.774	4.839
BRACKEN FERN	0.855	3.226
* MOUNTAIN ASH SEEDS	1.048	1.613
* QUERCUS SPP. ACORN SHELLS	1.065	3.065
UNKNOWN	1.161	4.839
UNKNOWN VEGETATION	1.274	9.677
* RHAMNUS SPP. SEEDS	1.468	9.677
* HORNETS	1.500	16.129
* WILD CALLA LEAVES	1.613	1.613
* GRASSHOPPERS	1.855	8.065
* GRASS SPP.	1.871	16.129
* HAWTHORN SPP. SEEDS	2.097	3.226
* BEAKED HAZELNUT SHELLS	2.500	9.677
* WILD SARSAPARILLA SEEDS	2.726	11.290
* ANTS	3.371	25.806
UNKNOWN ANIMAL HAIR	3.919	20.968
* SERVICEBERRY SPP. SEEDS	5.065	8.065
* BLUEBERRY SPP. SEEDS	8.613	20.968
* RUBUS SPP. SEEDS	11.355	33.871
THOROUGHLY DIGESTED PLANT MAT.	16.129	16.129
* CHERRY SPP. SEEDS	24.468	46.774

Nuber of Scats: 62

UPPER PENINSULA OF MICHIGAN, SEPTEMBER 1989

Items	% Volume	% Frequency
* BLUEBERRY SPP. LEAVES	0.056	1.408
* APPLE SPP. FRUIT SKINS	0.070	1.408
UNKNOWN STEMS	0.085	1.408
* FAWN AND DEER HAIR	0.099	1.408
* DOGWOOD SPP. SEEDS	0.113	1.408
* CHOKEBERRY SEEDS	0.127	1.408
* BEAKED HAZELNUT SHELLS	0.169	1.408
* ANTS	0.183	2.817
* WINTERBERRY SEEDS	0.183	2.817
* INSECT BODY SEGMENTS	0.310	1.408
* APPLE SPP. SEEDS	0.451	2.817
UNKNOWN SEEDS	0.451	1.408
* RUBUS SPP. SEEDS	0.620	7.042
* HAWTHORN SPP. SEEDS	0.676	2.817
GRASSHOPPERS	0.761	5.634
UNKNOWN ANIMAL HAIR	1.000	4.225
* BLUEBERRY SPP. SEEDS	1.042	1.408
* INSECT LARVAE	1.056	1.408
* GRASS SPP.	1.366	5.634
THOROUGHLY DIGESTED PLANT MAT.	1.408	1.408
* QUERCUS SPP. ACORN SHELLS	1.465	2.817
UNKNOWN	1.761	2.817
* HORNETS	1.845	9.859
UNKNOWN NUT MEAT	2.310	2.817
* CHERRY SPP. SEEDS	82.394	91.549

Number of Scats: 71

UPPER PENINSULA OF MICHIGAN, OCTOBER 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.038	1.923
OATS	0.212	3.846
BRACKEN FERN	0.385	1.923
* VIBURNUM SPP. SEEDS	0.769	1.923
* FAWN AND DEER HAIR	0.942	5.769
* APPLE SPP. SEEDS	1.231	3.846
THOROUGHLY DIGESTED PLANT MAT.	1.500	1.923
UNKNOWN	2.346	3.846
* HAWTHORN SPP. SEEDS	4.538	7.692
CORN KERNELS	7.308	7.692
* WINTERBERRY SEEDS	9.346	15.385
* CHERRY SPP. SEEDS	71.385	73.077

Number of Scats: 52

MINNESOTA, MAY 1989

Items	% Volume	% Frequency
GRASS SEED	0.024	2.439
UNKNOWN BUD CASES	0.024	2.439
BONE FRAGMENTS	0.073	2.439
WOODY DEBRIS	0.098	2.439
BLUEBERRY SPP. LEAVES	0.122	2.439
UNKNOWN STEMS	0.195	4.878
WOODCHICK HAIR	0.195	2.439
ASPEN TWIGS	0.244	2.439
RUBUS SPP. LEAVES	0.244	2.439
WILLOW CATKINS	0.244	2.439
ANTS	0.512	9.756
UNKNOWN SEEDS	0.561	4.878
ANIMAL SKIN	0.610	4.878
PEAVINE STEMS	0.780	2.439
ASPEN BUD CASES	1.073	12.195
FISH BONE	1.537	2.439
BETTERLES	1.683	7.317
UNKNOWN LEAVES	2.195	2.439
INTERRUPTED FERN STEMS	2.439	2.439
WILD CALLA LEAVES	2.439	2.439
UNKNOWN ANIMAL HAIR	2.878	4.878
CATERPILLARS	3.366	7.317
SUNFLOWER SEEDS	3.780	4.878
THOROUGHLY DIGESTED PLANT MAT.	4.146	7.317
UNKNOWN VEGETATION	4.171	7.317
PEAVINE SPP. LEAVES	4.268	7.317
CLOVER SPP. LEAVES	5.756	12.195
FISH SCALES	6.146	9.756
FAWN AND DEER HAIR	6.341	7.317
UNKNOWN	9.341	14.634
GRASS SPP.	10.098	36.585
ASPEN LEAVES	10.561	19.512
ASPEN CATKINS	13.854	14.634

Number of Scats: 41

MINNESOTA, JUNE 1989

Items	% Volume	% Frequency
ASH SEED	0.014	1.429
CEDAR	0.014	1.429
HAWTHORN SPP. SEEDS	0.014	1.429
INSECT LARVAE	0.014	1.429
RUBUS SPP. LEAVES	0.014	1.429
SPHAGNUM MOSS	0.014	1.429
UNKNOWN SEEDS	0.014	1.429
UNKNOWN BUDS	0.029	1.429
UNKNOWN CATKINS	0.029	1.429
FAWN HOOF	0.043	1.429
SWEET FERN FRUIT BURS	0.043	1.429
STRAWBERRY LEAVES	0.043	1.429
HORNETS	0.057	1.429
ARCTOSTAPHYLOS LEAVES	0.071	1.429
BLUEBERRY SPP. LEAVES	0.071	1.429
INTERRUPTED FERN LEAVES	0.071	1.429
ANT PUPAE	0.114	2.857
UNKNOWN FERN LEAVES	0.143	1.429
WILLOW BUD CASES	0.214	1.429
BIRCH SPP. LEAVES	0.286	1.429
BONE FRAGMENTS	0.429	10.000
INSECT BODY SEGMENTS	0.457	1.429
ANIMAL SKIN	0.500	1.429
HONEYSUCKLE SEED	0.543	1.429
ASPEN BUD CASES	0.571	7.143
PLASTIC	0.929	1.429
PEAVINE STEMS	0.986	2.857
UNKNOWN STEMS	1.043	4.286
UNKNOWN VEGETATION	1.129	8.571
CLOVER SPP. LEAVES	1.286	1.429
ASPEN LEAF STEMS	1.386	4.286
CRAYFISH	1.429	1.429
UNKNOWN ANIMAL HAIR	1.643	8.571
FAWN AND DEER HAIR	1.671	8.571
UNKNOWN	3.314	7.143
PEAVINE SPP. LEAVES	3.971	14.286
ANTS	4.214	24.286
ASPEN CATKINS	4.314	5.714
WILD CALLA LEAVES	6.486	14.286
THOROUGHLY DIGESTED PLANT MAT.	9.243	10.000
GRASS SPP.	12.086	35.714
CATERPILLARS	12.143	22.857
ASPEN LEAVES	28.914	40.000

Number of Scats: 69

Items	% Volume	% Frequency
ARCTOSTAPHYLOS SPP. SEEDS	0.017	1.667
ARCTOSTAPHYLOS LEAVES	0.033	1.667
EGG SHELLS	0.033	1.667
FISH SCALES	0.033	3.333
UNKNOWN SEEDS	0.033	3.333
CLOVER SPP. LEAVES	0.050	1.667
HONEYSUCKLE LEAVES	0.050	1.667
WILD LETTUCE LEAVES	0.050	1.667
INSECT LARVAE	0.083	1.667
UNKNOWN FERN	0.083	1.667
PEANUT SHELLS	0.117	1.667
PAPER	0.150	1.667
UNKNOWN FERN LEAVES	0.167	1.667
UNKNOWN ANIMAL HAIR	0.183	6.667
UNKNOWN CATKINS	0.183	5.000
STRAWBERRY SEEDS	0.283	1.667
CANTELOUP SEEDS	0.417	1.667
ASPEN CATKINS	0.550	8.333
WILD CALLA LEAVES	0.833	3.333
ANT PUPAE	0.883	11.667
FAWN AND DEER HAIR	1.000	3.333
HORNETS	1.017	5.000
SERVICEBERRY SPP. SEEDS	1.050	11.667
BEAR HAIR	1.250	1.667
BLUEBERRY SPP. LEAVES	1.350	33.333
UNKNOWN LEAVES	1.567	5.000
CATERPILLARS	1.617	1.667
BLUEBERRY SPP. BERRIES	2.150	8.333
GRASS SPP.	2.483	25.000
UNKNOWN	3.550	8.333
PLASTIC	4.267	8.333
THOROUGHLY DIGESTED PLANT MAT.	4.633	6.667
UNKNOWN VEGETATION	5.967	18.333
ANTS	12.583	66.667
WILD SARSAPARILLA SEEDS	23.100	65.000
BLUEBERRY SPP. SEEDS	28.183	55.000

Number of Scats: 60

Items	% Volume	Frequency
CHERRY SPP. SEEDS	0.027	2.703
QUERCUS SPP. ACORN SHELLS	0.027	2.703
UNKNOWN CATKINS	0.027	2.703
JACK IN THE PULPIT CORM SKINS	0.054	2.703
GRASS SEED	0.081	2.703
FAWN AND DEER HAIR	0.108	2.703
RHAMNUS SPP. SEEDS	0.108	5.405
BUNCHBERRIES	0.162	2.703
ANT PUPAE	0.270	2.703
BONE FRAGMENTS	0.270	2.703
BLUEBERRY SPP. LEAVES	0.297	10.811
BUNCHBERRY SEEDS	0.297	5.405
INSECT BODY SEGMENTS	0.541	5.405
PAPER	0.568	2.703
UNKNOWN ANIMAL HAIR	0.649	5.405
BANEBERRY SEEDS	0.676	5.405
ALUMINUM FOIL	0.703	2.703
BLUEBERRY SPP. BERRIES	1.081	5.405
UNKNOWN SEEDS	1.243	8.108
PINE NEEDLES	1.351	2.703
SERVICEBERRY SPP. SEEDS	1.757	5.405
UNKNOWN	1.892	2.703
DOGWOOD SPP. SEEDS	2.622	5.405
ARCTOSTAPHYLOS SPP. SEEDS	2.703	2.703
PEAVINE SPP. LEAVES	2.703	2.703
RUBUS SPP. SEEDS	3.297	18.919
PLASTIC	3.486	5.405
WILD CALLA LEAVES	4.270	5.405
GRAVEL	4.459	5.405
WILD SARSAPARILLA SEEDS	5.000	21.622
OATS	5.108	5.405
GRASS SPP.	6.297	48.649
BLUEBERRY SPP. SEEDS	7.459	10.811
THOROUGHLY DIGESTED PLANT MAT.	8.108	8.108
ANTS	10.189	37.838
HORNETS	10.703	37.838
UNKNOWN VEGETATION	11.405	32.432

Number of Scats: 37

Items	% Volume	% Frequency
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JUNIPER SEEDS	0.105	5.263
CLOVER SPP. LEAVES	0.158	5.263
WATERMELON SEEDS	0.263	5.263
GRAVEL	0.526	5.263
UNKNOWN SEEDS	0.632	10.526
RHAMNUS SPP. SEEDS	1.263	5.263
ANTS	1.421	21.053
HORNETS	3.158	15.789
BONE FRAGMENTS	3.526	5.263
WILD SARSAPARILLA SEEDS	4.000	5.263
WILD CALLA STEMS	4.579	10.526
CORN KERNELS	5.000	5.263
CHERRY SPP. SEEDS	5.263	5.263
JACK IN THE PULPIT LEAVES	5.263	5.263
UNKNOWN STEMS	5.263	5.263
THOROUGHLY DIGESTED PLANT MAT.	10.526	10.526
WILD CALLA LEAVES	13.684	21.053
UNKNOWN	16.316	21.053
GRASS SPP.	19.053	21.053

Number of Scats: 19

WISCONSIN, MARCH 1989

Items	% Volume	% Frequency
BEECH NUT HULLS	100.000	100.000

Number of Scats: 4

WISCONSIN, APRIL 1989

Items	% Volume	% Frequency
HARE NAILS	0.029	2.941
ANTS	0.059	2.941
BEECH LEAVES	0.059	2.941
HEMLOCK NEEDLES	0.059	2.941
HEMLOCK SEEDS	0.059	2.941
UNKNOWN BRACHTS	0.088	5.882
BONE FRAGMENTS	0.324	5.882
FAWN AND DEER HAIR	0.353	2.941
PLASTIC	0.441	2.941
UNKNOWN SEEDS	0.676	35.294
UNKNOWN ANIMAL HAIR	1.441	11.765
UNKNOWN STEMS	2.353	2.941
THOROUGHLY DIGESTED PLANT MAT.	2.941	2.941
GRASS SPP.	16.647	58.824
BEECH NUT HULLS	74.471	94.118

Number of Scats: 34

WISCONSIN, MAY 1989

Items	% Volume	% Frequency
UNKNOWN BRACHTS	0.024	2.381
BEECH LEAVES	0.048	2.381
DUCKWEED	0.048	2.381
PINE CONE SCALES	0.048	2.381
STRAWBERRY LEAVES	0.048	2.381
UNKNOWN STEMS	0.048	2.381
WOODY DEBRIS	0.048	4.762
BRACKEN FERN	0.071	2.381
BEAR HAIR	0.071	2.381
PLASTIC	0.071	4.762
PEAVINE SPP. LEAVES	0.071	2.381
UNKNOWN FLOWER	0.071	2.381
UNKNOWN FRUIT SKINS	0.119	2.381
UNKNOWN LEAVES	0.119	2.381
UNKNOWN SEEDS	0.119	7.143
ASPEN BUD CASES	0.167	9.524
EGG SHELLS	0.167	2.381
JACK IN THE PULPIT CORM SKINS	0.167	4.762
BEECH BUD CASES	0.214	4.762
MAPLE SPP. LEAVES	0.238	2.381
SUNFLOWER SEEDS	0.238	2.381
WILLOW CATKINS	0.238	2.381
PAPER	0.571	4.762
ANTS	0.810	14.286
BONE FRAGMENTS	0.810	2.381
WILD LETTUCE LEAVES	0.952	2.381
CLOVER SPP. LEAVES	1.190	9.524
UNKNOWN VEGETATION	1.405	7.143
UNKNOWN BUDS	1.667	2.381
UNKNOWN ANIMAL HAIR	1.857	9.524
INSECT BODY SEGMENTS	2.143	2.381
WILD CALLA LEAVES	2.381	2.381
ASPEN CATKINS	2.524	7.143
UNKNOWN	2.786	11.905
THOROUGHLY DIGESTED PLANT MAT.	3.167	9.524
ASPEN LEAVES	4.476	16.667
SWEET CICELY LEAVES	9.714	14.286
GRASS SPP.	28.619	59.524
BEECH NUT HULLS	32.357	47.619

Number of Scats: 42

WISCONSIN, JUNE 1989

Items	% Volume	% Frequency
BEECH LEAVES	0.033	3.333
MAPLE SPP. SAMARAS	0.033	3.333
UNKNOWN FLOWER	0.033	3.333
WILD SARSAPARILLA SEEDS	0.033	3.333
ANT PUPAE	0.067	3.333
BEEES	0.067	3.333
HORNETS	0.067	3.333
UNKNOWN FRUIT SKINS	0.100	3.333
MAPLE SPP. LEAVES	0.167	3.333
BEAR HAIR	0.333	3.333
HAWKWEED SPP. LEAVES	0.333	3.333
BRACKEN FERN	0.400	3.333
CIGARETT BUTTS	0.533	3.333
HONEYCOMB	0.533	3.333
UNKNOWN STEMS	0.533	6.667
UNKNOWN BUDS	0.567	6.667
BEECH BUD CASES	0.600	20.000
BONE FRAGMENTS	0.667	10.000
PLASTIC	0.767	3.333
INSECT LARVAE	0.800	3.333
UNKNOWN ANIMAL HAIR	1.000	10.000
PEAVINE SPP. LEAVES	2.467	3.333
SUNFLOWER SEEDS	2.633	3.333
BEAKED HAZELNUT SHELLS	2.833	3.333
THOROUGHLY DIGESTED PLANT MAT.	2.933	3.333
RUBUS SPP. LEAVES	3.000	3.333
JACK IN THE PULPIT CORM SKINS	3.133	23.333
JACK IN THE PULPIT LEAVES	3.200	6.667
FAWN AND DEER HAIR	3.233	3.333
UNKNOWN	3.733	6.667
UNKNOWN VEGETATION	4.300	10.000
WILD CALLA LEAVES	5.000	6.667
BEEETLES	6.767	13.333
WILD CALLA STEMS	7.167	13.333
ANTS	10.367	40.000
GRASS SPP.	10.500	33.333
BEECH NUT HULLS	21.067	30.000

Number of Scats: 30

WISCONSIN, JULY 1989

Items	% Volume	% Frequency
BEETLES	0.037	3.704
SERVICEBERRY SPP. LEAVES	0.037	3.704
UNKNOWN SEEDS	0.037	3.704
UNKNOWN BUDS	0.074	3.704
BLUEBERRY SPP. LEAVES	0.111	3.704
BEAR HAIR	0.111	3.704
FEATHERS	0.111	3.704
HORNETS	0.111	3.704
RUBUS SPP. SEEDS	0.111	7.407
STRING	0.111	3.704
RIBES SEEDS	0.185	3.704
UNKNOWN BERRIES	0.185	3.704
GRASSHOPPERS	0.222	3.704
PEAVINE SPP. LEAVES	0.259	3.704
JACK IN THE PULPIT CORM SKINS	0.370	3.704
BLUEBERRY SPP. SEEDS	0.481	7.407
UNKNOWN	0.704	11.111
UNKNOWN FRUIT SKINS	0.741	3.704
UNKNOWN LEAVES	0.889	3.704
BLUEBERRY SPP. BERRIES	1.148	11.111
ANT PUPAE	1.296	7.407
PLASTIC	1.296	3.704
HONEYSUCKLE SEEDS	1.741	3.704
UNKNOWN STEMS	2.407	3.704
WILD CALLA LEAVES	3.111	7.407
DOGWOOD SPP. SEEDS	3.333	3.704
STRAWBERRY SEEDS	3.704	3.704
THOROUGHLY DIGESTED PLANT MAT.	3.704	3.704
UNKNOWN CATKINS	3.704	3.704
CHERRY SPP. SEEDS	3.741	7.407
UNKNOWN ANIMAL HAIR	4.593	14.815
SERVICEBERRY SPP. SEEDS	5.000	11.111
UNKNOWN VEGETATION	5.074	11.111
GRASS SPP.	7.667	25.926
ANTS	20.259	48.148
WILD SARSAPARILLA SEEDS	23.333	51.852

Number of Scats: 27

WISCONSIN, AUGUST 1989

Items	% Volume	% Frequency
ANIMAL CLAWS	0.026	2.632
CHERRY LEAVES	0.053	2.632
FAWN AND DEER HAIR	0.053	2.632
UNKNOWN VEGETATION	0.053	2.632
APPLE SPP. SEEDS	0.132	5.263
SMALL RODENT HAIR	0.132	2.632
RHAMNUS SPP. SEEDS	0.184	2.632
WOODY DEBRIS	0.211	5.263
HARE HAIR	0.237	2.632
UNKNOWN CATKINS	0.263	2.632
STRAWBERRY SEEDS	0.447	2.632
ANT PUPAE	0.526	2.632
OATS	0.526	2.632
BEAR HAIR	0.658	2.632
HARE BONE FRAGMENTS	0.658	2.632
UNKNOWN	0.789	2.632
MUSSEL SHELLS	0.921	2.632
RIBES SEEDS	1.184	2.632
HORNETS	1.368	15.789
HAWTHORN SPP. SEEDS	1.368	5.263
WILD CALLA LEAVES	1.395	2.632
UNKNOWN ANIMAL HAIR	1.579	5.263
GRASS SPP.	1.921	28.947
BLUEBERRY SPP. SEEDS	2.105	2.632
THOROUGHLY DIGESTED PLANT MAT.	2.237	2.632
BEAKED HAZELNUT SHELLS	3.474	15.789
UNKNOWN SEEDS	4.737	13.158
BEECH NUT HULLS	7.895	7.895
ANTS	8.842	34.211
RUBUS SPP. SEEDS	14.158	31.579
WILD SARSAPARILLA SEEDS	15.421	26.316
CHERRY SPP. SEEDS	25.184	50.000

Number of Scats: 38

WISCONSIN, SEPTEMBER 1989

Items	% Volume	% Frequency
UNKNOWN SEEDS	0.118	5.882
APPLE STEM	0.176	5.882
BEAKED HAZELNUT SHELLS	0.471	5.882
FAWN AND DEER HAIR	0.529	11.765
CANADIAN PLUM SEEDS	0.706	5.882
HORNETS	1.059	5.882
APPLE SPP. SEEDS	2.706	11.765
APPLE SPP. FRUIT PIECES	3.412	5.882
INSECT LARVAE	4.706	11.765
VIBURNUM SPP. SEEDS	5.118	11.765
WINTERBERRY SEEDS	6.294	11.765
UNKNOWN	7.353	11.765
DOGWOOD SPP. SEEDS	7.529	17.647
CHERRY SPP. SEEDS	59.824	64.706

Number of Scats: 17

WISCONSIN, OCTOBER 1989

Items	% Volume	% Frequency
UNKNOWN	100.000	100.000

Number of Scats: 1

CHEQUAMEGON NATIONAL FOREST, MAY 1989

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Items	% Volume	% Frequency
UNKNOWN STEMS	0.667	33.333
PAPER	6.667	33.333
UNKNOWN VEGETATION	16.000	33.333
SWEET CICELY LEAVES	16.667	33.333
GRASS SPP.	26.667	33.333
WILD CALLA LEAVES	33.333	33.333

Number of Scats: 3

CHEQUAMEGON NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
UNKNOWN BUDS	7.500	50.000
GRASS SPP.	92.500	100.000

Number of Scats: 2

CHEQUAMEGON NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
HORNETS	1.333	16.667
HARE HAIR	1.500	16.667
STRAWBERRY SEEDS	2.833	16.667
HARE BONE FRAGMENTS	4.167	16.667
MUSSEL SHELLS	5.833	16.667
HAWTHORN SPP. SEEDS	8.333	16.667
RUBUS SPP. SEEDS	14.167	33.333
ANTS	14.333	33.333
CHERRY SPP. SEEDS	16.833	50.000
WILD SARSAPARILLA SEEDS	31.000	50.000

Number of Scats: 6

CHIPPEWA NATIONAL FOREST, MAY 1989

Items	% Volume	% Frequency
ANTS	0.429	14.286
BLUEBERRY SPP. LEAVES	0.714	14.286
UNKNOWN	0.714	14.286
WOODCHICK HAIR	1.143	14.286
ASPEN TWIGS	1.429	14.286
WILLOW CATKINS	1.429	14.286
CLOVER SPP. LEAVES	2.286	14.286
ASPEN BUD CASES	3.000	42.857
UNKNOWN VEGETATION	7.143	14.286
GRASS SPP.	8.714	14.286
WILD CALLA LEAVES	14.286	14.286
ASPEN LEAVES	58.714	85.714

Number of Scats: 7

CHIPPEWA NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
ANTS	3.000	100.000
ANT PUPAE	7.000	100.000
CLOVER SPP. LEAVES	90.000	100.000

Number of Scats: 1

CHIPPEWA NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
WILD SARSAPARILLA SEEDS	13.000	100.000
ANTS	87.000	100.000

Number of Scats: 1

CHIPPEWA NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
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RUBUS SPP. SEEDS	0.333	33.333
BUNCHBERRY SEEDS	0.667	33.333
GRASS SPP.	1.000	33.333
ANTS	2.333	66.667
HORNETS	4.333	66.667
UNKNOWN SEEDS	6.667	33.333
UNKNOWN VEGETATION	21.667	33.333
OATS	63.000	66.667

Number of Scats: 3

CHIPPEWA NATIONAL FOREST, SEPTEMBER 1989

Items	% Volume	% Frequency
-----	-----	-----
UNKNOWN STEMS	100.000	100.000

Number of Scats: 1

HIAWATHA NATIONAL FOREST, MAY 1989

Items	% Volume	% Frequency
ANTS	0.333	16.667
PEAVINE SPP. LEAVES	8.333	33.333
UNKNOWN	10.833	33.333
THOROUGHLY DIGESTED PLANT MAT.	14.833	16.667
BEECH BUD CASES	15.000	33.333
GRASS SPP.	17.333	66.667
BEECH LEAVES	33.333	50.000

Number of Scats: 6

HIAWATHA NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
UNKNOWN FERN LEAVES	0.200	10.000
PEAVINE SPP. LEAVES	0.500	10.000
ANTS	0.800	30.000
CLOVER SPP. LEAVES	1.200	10.000
MAPLE SPP. LEAVES	1.500	10.000
BEECH BUD CASES	2.000	10.000
UNKNOWN STEMS	5.900	20.000
PEAVINE STEMS	7.900	10.000
THOROUGHLY DIGESTED PLANT MAT.	8.000	10.000
UNKNOWN ANIMAL HAIR	8.000	10.000
UNKNOWN VEGETATION	9.100	20.000
UNKNOWN FRUIT SKINS	9.700	10.000
WILD CALLA LEAVES	10.000	10.000
GRASS SPP.	34.700	60.000

Number of Scats: 10

HIAWATHA NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
MAPLE SPP. LEAVES	0.167	16.667
BEECH LEAVES	0.333	16.667
INSECT BODY SEGMENTS	0.500	16.667
UNKNOWN FLOWER	0.667	16.667
BEECH BUD CASES	0.833	16.667
UNKNOWN FERN LEAVES	0.833	16.667
UNKNOWN STEMS	0.833	16.667
BEETLES	1.000	16.667
MAPLE SPP. SAMARAS	2.167	33.333
BLUEBERRY SPP. SEEDS	3.333	16.667
UNKNOWN BUD CASES	5.000	16.667
GRASS SPP.	13.333	16.667
THOROUGHLY DIGESTED PLANT MAT.	31.000	33.333
UNKNOWN	40.000	50.000

Number of Scats: 6

HIAWATHA NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
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BRACKEN FERN	0.750	25.000
UNKNOWN ANIMAL HAIR	3.750	50.000
CHERRY SPP. SEEDS	25.000	25.000
THOROUGHLY DIGESTED PLANT MAT.	25.000	25.000
SERVICEBERRY SPP. SEEDS	45.500	50.000

Number of Scats: 4

HIAWATHA NATIONAL FOREST, SEPTEMBER 1989

Items	% Volume	% Frequency
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CHERRY SPP. SEEDS	100.000	100.000

Number of Scats: 1

HURON-MANISTEE NATIONAL FOREST, MAY 1989

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Items	% Volume	% Frequency
BETTER	0.667	33.333
GRASS SPP.	0.667	33.333
UNKNOWN SEEDS	1.000	33.333
UNKNOWN VEGETATION	1.667	33.333
UNKNOWN STEMS	3.667	66.667
UNKNOWN ANIMAL HAIR	4.000	66.667
UNKNOWN BARK	5.000	33.333
UNKNOWN BUDS	6.667	33.333
INSECT BODY SEGMENTS	11.000	33.333
BRACKEN FERN	21.667	66.667
UNKNOWN	44.000	66.667

Number of Scats: 3

HURON-MANISTEE NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.056	5.556
ASPEN BUD CASES	0.111	11.111
ANIMAL SKIN	0.222	5.556
UNKNOWN BUDS	0.278	5.556
WOODY DEBRIS	0.278	5.556
ASPEN CATKINS	0.389	5.556
PEAVINE SPP. LEAVES	0.444	5.556
JACK IN THE PULPIT CORM SKINS	0.500	5.556
ASPEN LEAVES	1.556	11.111
DUCKWEED	1.944	5.556
BRACKEN FERN	3.556	27.778
QUERCUS SPP. ACORN SHELLS	4.222	11.111
INSECT BODY SEGMENTS	4.444	5.556
JACK IN THE PULPIT LEAVES	4.778	11.111
CATERPILLARS	5.556	5.556
BEAKED HAZELNUT HUSK	5.556	5.556
GRASS SPP.	6.056	38.889
UNKNOWN FERN	6.333	11.111
UNKNOWN VEGETATION	8.778	27.778
ANTS	9.556	27.778
THOROUGHLY DIGESTED PLANT MAT.	14.167	16.667
UNKNOWN	21.222	27.778

Number of Scats: 18

HURON-MANISTEE NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.750	25.000
UNKNOWN SEEDS	1.000	25.000
BETTERLES	1.500	25.000
WILD SANSAPARILLA SEEDS	1.750	25.000
THOROUGHLY DIGESTED PLANT MAT.	2.750	25.000
WOODY DEBRIS	5.000	25.000
ANTS	12.500	50.000
PLASTIC	22.250	25.000
SERVICEBERRY SPP. SEEDS	24.000	25.000
UNKNOWN	28.500	50.000

Number of Scats: 4

HURON-MANISTEE NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
HORNETS	0.500	50.000
BRACKEN FERN	1.000	50.000
MOUNTAIN ASH SEEDS	1.500	50.000
JACK IN THE PULPIT CORM SKINS	12.500	50.000
UNKNOWN	84.500	100.000

Number of Scats: 2

HURON-MANISTEE NATIONAL FOREST, SEPTEMBER 1989

Items	% Volume	% Frequency
BEAR HAIR	0.273	9.091
UNKNOWN ANIMAL HAIR	0.273	9.091
UNKNOWN FERN	0.273	9.091
DOGWOOD SPP. SEEDS	0.364	9.091
BUNCHBERRY LEAVES	0.636	9.091
BRACKEN FERN	0.909	9.091
QUERCUS SPP. ACORN SHELLS	1.091	18.182
UNKNOWN VEGETATION	1.636	9.091
SPHAGNUM MOSS	3.636	9.091
VIBURNUM SPP. SEEDS	3.818	18.182
MOUNTAIN ASH SEEDS	4.273	9.091
INTERRUPTED FERN STEMS	6.545	9.091
QUERCUS SPP. ACORN MEAT	7.091	9.091
UNKNOWN	8.818	9.091
CORN KERNALS	9.091	9.091
HORNETS	14.909	27.273
CHERRY SPP. SEEDS	36.364	36.364

Number of Scats: 11

HURON-MANISTEE NATIONAL FOREST, OCTOBER 1989

Items	% Volume	% Frequency
SERVICEBERRY SPP. SEEDS	0.429	14.286
APPLE SPP. SEEDS	0.714	14.286
VIBURNUM SPP. SEEDS	1.429	14.286
HORNETS	13.571	14.286
CHERRY SPP. SEEDS	14.286	14.286
WINTERBERRY SEEDS	69.571	71.429

Number of Scats: 7

NICOLET NATIONAL FOREST, APRIL 1989

Items	% Volume	% Frequency
BONE FRAGMENTS	3.000	100.000
GRASS SPP.	5.000	100.000
FAWN AND DEER HAIR	12.000	100.000
UNKNOWN STEMS	80.000	100.000

Number of Scats: 1

NICOLET NATIONAL FOREST, MAY 1989

Items	% Volume	% Frequency
ASPEN LEAVES	0.429	14.286
PAPER	0.571	14.286
ASPEN BUD CASES	0.714	28.571
UNKNOWN FRUIT SKINS	0.714	14.286
UNKNOWN LEAVES	0.714	14.286
ANTS	3.143	57.143
CLOVER SPP. LEAVES	4.143	14.286
UNKNOWN BUDS	10.000	14.286
UNKNOWN	12.857	14.286
THOROUGHLY DIGESTED PLANT MAT.	13.857	28.571
GRASS SPP.	23.857	100.000
SWEET CICELY LEAVES	29.000	42.857

Number of Scats: 7

NICOLET NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
MAPLE SPP. SAMARAS	0.143	14.286
UNKNOWN FLOWER	0.143	14.286
UNKNOWN BUDS	0.286	14.286
BONE FRAGMENTS	1.000	14.286
UNKNOWN ANIMAL HAIR	3.000	14.286
INSECT LARVAE	3.429	14.286
GRASS SPP.	4.429	28.571
JACK IN THE PULPIT CORM SKINS	7.000	57.143
ANTS	10.714	42.857
WILD CALLA LEAVES	11.286	14.286
JACK IN THE PULPIT LEAVES	13.714	28.571
UNKNOWN VEGETATION	14.286	14.286
BEETLES	14.571	28.571
UNKNOWN	16.000	28.571

Number of Scats: 7

NICOLET NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
BETLES	0.091	9.091
CHERRY SPP. SEEDS	0.091	9.091
UNKNOWN BUDS	0.182	9.091
BLUEBERRY SPP. LEAVES	0.273	9.091
UNKNOWN	0.455	9.091
PEAVINE SPP. LEAVES	0.636	9.091
JACK IN THE PULPIT CORM SKINS	0.909	9.091
BLUEBERRY SPP. BERRIES	1.818	9.091
UNKNOWN FRUIT SKINS	1.818	9.091
GRASS SPP.	3.273	9.091
UNKNOWN VEGETATION	6.727	9.091
WILD CALLA LEAVES	7.000	9.091
DOGWOOD SPP. SEEDS	8.182	9.091
STRAWBERRY SEEDS	9.091	9.091
THOROUGHLY DIGESTED PLANT MAT.	9.091	9.091
UNKNOWN ANIMAL HAIR	9.364	18.182
ANTS	16.364	45.455
WILD SARSAPARILLA SEEDS	24.636	54.545

Number of Scats: 11

NICOLET NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
ANIMAL CLAWS	0.067	6.667
FAWN AND DEER HAIR	0.133	6.667
HAWTHORN SPP. SEEDS	0.133	6.667
WOODY DEBRIS	0.333	6.667
RHAMNUS SPP. SEEDS	0.467	6.667
ANT PUPAE	1.333	6.667
UNKNOWN	2.000	6.667
HORNETS	2.067	13.333
GRASS SPP.	2.733	33.333
RIBES SEEDS	3.000	6.667
UNKNOWN ANIMAL HAIR	3.333	6.667
WILD CALLA LEAVES	3.533	6.667
THOROUGHLY DIGESTED PLANT MAT.	5.667	6.667
UNKNOWN SEEDS	6.333	26.667
ANTS	7.000	26.667
BEAKED HAZELNUT SHELLS	8.800	40.000
RUBUS SPP. SEEDS	14.400	40.000
WILD SARSAPARILLA SEEDS	17.000	26.667
CHERRY SPP. SEEDS	21.667	46.667

Number of Scats: 15

NICOLET NATIONAL FOREST, SEPTEMBER 1989

Items	% Volume	% Frequency
APPLE STEM	0.375	12.500
APPLE SPP. SEEDS	0.500	12.500
FAWN AND DEER HAIR	1.125	25.000
HORNETS	2.250	12.500
INSECT LARVAE	9.375	12.500
UNKNOWN	15.625	25.000
CHERRY SPP. SEEDS	70.750	75.000

Number of Scats: 8

Items	% Volume	% Frequency
GRASS SPP.	100.000	100.000

Number of scats: 1

OTTAWA NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
EGG SHELLS	1.000	10.000
UNKNOWN FRUIT SKINS	2.500	10.000
MAIANthemum CANADENSIS LEAVES	3.000	10.000
BONE FRAGMENTS	4.000	10.000
SWEET FLAG IRIS	4.000	10.000
FAWN AND DEER HAIR	6.000	10.000
UNKNOWN STEMS	19.300	20.000
THOROUGHLY DIGESTED PLANT MAT.	20.000	20.000
WILD CALLA LEAVES	20.000	20.000
GRASS SPP.	20.200	40.000

Number of Scats: 10

OTTAWA NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
ANIMAL SKIN	0.048	4.762
INSECT BODY SEGMENTS	0.095	4.762
UNKNOWN	0.095	4.762
WILD SARSAPARILLA SEEDS	0.095	4.762
BONE FRAGMENTS	0.238	4.762
SERVICEBERRY SPP. LEAVES	0.667	4.762
ANT PUPAE	0.810	9.524
RUBUS SPP. SEEDS	0.810	9.524
GRASS SPP.	1.048	14.286
ELDERBERRY SEEDS	1.190	4.762
BEAKED HAZELNUT SHELLS	1.190	4.762
FEATHERS	1.333	9.524
UNKNOWN ANIMAL HAIR	1.524	9.524
HORNETS	1.619	9.524
BLUEBERRY SPP. BERRIES	2.143	4.762
CHERRY SPP. SEEDS	2.714	9.524
HARE HAIR	2.857	4.762
WILD CALLA LEAVES	3.476	4.762
SERVICEBERRY SPP. SEEDS	4.048	23.810
UNKNOWN VEGETATION	5.524	9.524
BLUEBERRY SPP. LEAVES	5.571	19.048
GRASSHOPPERS	12.667	19.048
BLUEBERRY SPP. SEEDS	12.714	28.571
ANTS	13.476	42.857
THOROUGHLY DIGESTED PLANT MAT.	19.048	19.048

Number of Scats: 21

OTTAWA NATIONAL FOREST, AUGUST 1989

Items	% Volume	% Frequency
APPLE SPP. SEEDS	0.026	2.632
BLUEBERRY SPP. LEAVES	0.026	2.632
BEAKED HAZELNUT HUSK	0.105	2.632
BLUEBERRY SPP. BERRIES	0.263	2.632
RUBUS SPP. FRUIT	0.263	2.632
BONE FRAGMENTS	0.316	5.263
FEATHERS	0.342	7.895
RIBES SEEDS	0.474	2.632
FAWN AND DEER HAIR	0.526	5.263
HARE HAIR	0.526	2.632
STRAWBERRY SEEDS	0.526	2.632
HAWKWEED SPP. LEAVES	0.658	2.632
RHAMNUS SPP. SEEDS	0.789	2.632
HORNETS	0.868	7.895
ANIMAL SKIN	0.921	2.632
QUERCUS SPP. ACORN SHELLS	0.921	2.632
UNKNOWN SEEDS	1.053	2.632
WILD SARSAPARILLA SEEDS	1.237	7.895
BRACKEN FERN	1.316	2.632
GRASS SPP.	1.711	13.158
MOUNTAIN ASH SEEDS	1.711	2.632
UNKNOWN	1.868	5.263
UNKNOWN VEGETATION	1.895	13.158
GRASSHOPPERS	2.105	10.526
ANTS	2.500	13.158
BEAKED HAZELNUT SHELLS	2.500	5.263
WILD CALLA LEAVES	2.632	2.632
UNKNOWN ANIMAL HAIR	3.500	23.684
BLUEBERRY SPP. SEEDS	9.763	21.053
RUBUS SPP. SEEDS	16.500	39.474
CHERRY SPP. SEEDS	18.474	39.474
THOROUGHLY DIGESTED PLANT MAT.	23.684	23.684

Number of Scats: 38

SUPERIOR NATIONAL FOREST, MAY 1989

Items	% Volume	% Frequency
ANTS	0.286	14.286
CATERPILLARS	0.429	14.286
UNKNOWN STEMS	0.714	14.286
RUBUS SPP. LEAVES	1.429	14.286
ASPEN LEAVES	2.857	14.286
UNKNOWN SEEDS	3.286	28.571
PEAVINE STEMS	4.571	14.286
UNKNOWN ANIMAL HAIR	6.429	14.286
PEAVINE SPP. LEAVES	9.286	14.286
GRASS SPP.	11.429	42.857
UNKNOWN LEAVES	12.857	14.286
SUNFLOWER SEEDS	22.143	28.571
CLOVER SPP. LEAVES	24.286	42.857

Number of Scats: 7

SUPERIOR NATIONAL FOREST, JUNE 1989

Items	% Volume	% Frequency
INSECT LARVAE	0.143	14.286
CATERPILLARS	0.286	14.286
FAWN AND DEER HAIR	0.714	14.286
UNKNOWN ANIMAL HAIR	1.429	14.286
ANTS	2.000	57.143
UNKNOWN VEGETATION	2.857	14.286
UNKNOWN STEMS	6.429	14.286
PEAVINE STEMS	9.857	28.571
ASPEN LEAVES	11.429	28.571
CRAYFISH	14.286	14.286
PEAVINE SPP. LEAVES	23.857	42.857
GRASS SPP.	26.714	71.429

Number of Scats: 7

SUPERIOR NATIONAL FOREST, JULY 1989

Items	% Volume	% Frequency
UNKNOWN SEEDS	0.077	7.692
HONEYSUCKLE LEAVES	0.231	7.692
SERVICEBERRY SPP. SEEDS	0.231	15.385
UNKNOWN ANIMAL HAIR	0.231	7.692
UNKNOWN CATKINS	0.385	7.692
PAPER	0.692	7.692
PLASTIC	0.846	7.692
STRAWBERRY SEEDS	1.308	7.692
BLUEBERRY SPP. LEAVES	1.538	30.769
FAWN AND DEER HAIR	1.538	7.692
HORNETS	2.154	7.692
UNKNOWN VEGETATION	3.923	7.692
UNKNOWN LEAVES	6.846	15.385
GRASS SPP.	8.000	46.154
BLUEBERRY SPP. BERRIES	9.077	23.077
ANTS	11.385	69.231
THOROUGHLY DIGESTED PLANT MAT.	12.538	15.385
BLUEBERRY SPP. SEEDS	18.154	30.769
WILD SARSAPARILLA SEEDS	20.846	53.846

Number of Scats: 13

SUPERIOR NATIONAL FOREST, AUGUST 1989

Items	% Volume	Frequency
CHERRY SPP. SEEDS	0.125	12.500
QUERCUS SPP. ACORN SHELLS	0.125	12.500
UNKNOWN CATKINS	0.125	12.500
JACK IN THE PULPIT CORM SKINS	0.250	12.500
RHAMNUS SPP. SEEDS	0.250	12.500
BUNCHBERRIES	0.750	12.500
BLUEBERRY SPP. LEAVES	1.000	37.500
BUNCHBERRY SEEDS	1.125	12.500
ANT PUPAE	1.250	12.500
BONE FRAGMENTS	1.250	12.500
BLUEBERRY SPP. BERRIES	1.875	12.500
GRASS SPP.	2.250	75.000
INSECT BODY SEGMENTS	2.500	25.000
UNKNOWN VEGETATION	8.000	37.500
ANTS	8.125	25.000
SERVICEBERRY SPP. SEEDS	8.125	25.000
RUBUS SPP. SEEDS	8.125	50.000
WILD SARSAPARILLA SEEDS	9.875	62.500
BLUEBERRY SPP. SEEDS	20.750	25.000
HORNETS	24.125	50.000

Number of Scats: 8

SUPERIOR NATIONAL FOREST, SEPTEMBER 1989

Items	% Volume	% Frequency
HORNETS	1.400	20.000
RHAMNUS SPP. SEEDS	4.800	20.000
WILD SARSAPARILLA SEEDS	15.200	20.000
GRASS SPP.	38.600	40.000
THOROUGHLY DIGESTED PLANT MAT.	40.000	40.000

Number of Scats: 5

MENOMINEE INDIAN RESERVATION, MARCH 1989

Items	% Volume	% Frequency
BEECH NUT HULLS	100.000	100.000

Number of Scats: 4

MENOMINEE INDIAN RESERVATION, APRIL 1989

Items	% Volume	% Frequency
HARE NAILS	0.029	2.941
ANTS	0.059	2.941
BEECH LEAVES	0.059	2.941
HEMLOCK NEEDLES	0.059	2.941
HEMLOCK SEEDS	0.059	2.941
UNKNOWN BRACHTS	0.088	5.882
BONE FRAGMENTS	0.235	2.941
PLASTIC	0.441	2.941
UNKNOWN SEEDS	0.676	35.294
UNKNOWN ANIMAL HAIR	1.441	11.765
THOROUGHLY DIGESTED PLANT MAT.	2.941	2.941
GRASS SPP.	16.500	55.882
BEECH NUT HULLS	77.412	97.059

Number of Scats: 34

MENOMINEE INDIAN RESERVATION, MAY 1989

Items	% Volume	% Frequency
UNKNOWN BRACHTS	0.045	4.545
BEECH LEAVES	0.091	4.545
DUCKWEED	0.091	4.545
JACK IN THE PULPIT CORM SKINS	0.091	4.545
WOODY DEBRIS	0.091	9.091
BEAR HAIR	0.136	4.545
PLASTIC	0.136	9.091
UNKNOWN FLOWER	0.136	4.545
ASPEN LEAVES	0.227	4.545
UNKNOWN SEEDS	0.227	13.636
ASPEN CATKINS	0.318	9.091
EGG SHELLS	0.318	4.545
BEECH BUD CASES	0.409	9.091
MAPLE SPP. LEAVES	0.455	4.545
UNKNOWN VEGETATION	0.500	9.091
UNKNOWN	0.545	13.636
THOROUGHLY DIGESTED PLANT MAT.	0.955	4.545
BONE FRAGMENTS	1.545	4.545
UNKNOWN ANIMAL HAIR	3.318	13.636
SWEET CICELY LEAVES	3.591	4.545
GRASS SPP.	25.000	50.000
BEECH NUT HULLS	61.773	90.909

Number of Scats: 22

MENOMINEE INDIAN RESERVATION, JUNE 1989

Items	% Volume	% Frequency
BEECH LEAVES	0.083	8.333
HORNETS	0.167	8.333
MAPLE SPP. LEAVES	0.417	8.333
BONE FRAGMENTS	0.833	8.333
CIGARETT BUTTS	1.333	8.333
UNKNOWN STEMS	1.333	16.667
BEECH BUD CASES	1.500	50.000
PLASTIC	1.917	8.333
UNKNOWN VEGETATION	2.417	16.667
GRASS SPP.	5.750	33.333
BEAKED HAZELNUT SHELLS	7.083	8.333
RUBUS SPP. LEAVES	7.500	8.333
BEETLES	8.417	16.667
ANTS	8.583	16.667
BEECH NUT HULLS	52.667	75.000

Number of Scats: 12

MENOMINEE INDIAN RESERVATION, JULY 1989

Items	% Volume	% Frequency
FEATHERS	0.600	20.000
GRASSHOPPERS	1.200	20.000
UNKNOWN ANIMAL HAIR	1.200	20.000
CHERRY SPP. SEEDS	20.000	20.000
UNKNOWN CATKINS	20.000	20.000
WILD SARSAPARILLA SEEDS	27.000	40.000
GRASS SPP.	30.000	40.000

Number of Scats: 5

MENOMINEE INDIAN RESERVATION, AUGUST 1989

Items	% Volume	% Frequency
ANTS	13.333	16.667
WILD SARSAPARILLA SEEDS	16.667	16.667
CHERRY SPP. SEEDS	20.000	33.333
BEECH NUT HULLS	50.000	50.000

Number of Scats: 6

Items	% Volume	% Frequency
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GRASS SEED	0.037	3.704
UNKNOWN BUD CASES	0.037	3.704
ASPEN LEAVES	0.074	3.704
BONE FRAGMENTS	0.111	3.704
UNKNOWN STEMS	0.111	3.704
WOODY DEBRIS	0.148	3.704
ANTS	0.593	7.407
ASPEN BUD CASES	0.852	7.407
ANIMAL SKIN	0.926	7.407
CLOVER SPP. LEAVES	1.852	3.704
FISH BONE	2.333	3.704
BEEETLES	2.556	11.111
UNKNOWN ANIMAL HAIR	2.704	3.704
INTERRUPTED FERN STEMS	3.704	3.704
PEAVINE SPP. LEAVES	4.074	7.407
UNKNOWN VEGETATION	4.481	7.407
CATERPILLARS	5.000	7.407
THOROUGHLY DIGESTED PLANT MAT.	6.296	11.111
FISH SCALES	9.333	14.815
FAWN AND DEER HAIR	9.630	11.111
GRASS SPP.	10.111	40.741
UNKNOWN	14.000	18.519
ASPEN CATKINS	21.037	22.222

Number of Scats: 27

VOYAGEURS NATIONAL PARK, JUNE 1989

Items	% Volume	% Frequency
ANT PUPAE	0.016	1.613
ASH SEED	0.016	1.613
CEDAR	0.016	1.613
HAWTHORN SPP. SEEDS	0.016	1.613
RUBUS SPP. LEAVES	0.016	1.613
SPHAGNUM MOSS	0.016	1.613
UNKNOWN SEEDS	0.016	1.613
UNKNOWN BUDS	0.032	1.613
UNKNOWN CATKINS	0.032	1.613
FAWN HOOF	0.048	1.613
SWEET FERN FRUIT BURS	0.048	1.613
STRAWBERRY LEAVES	0.048	1.613
HORNETS	0.065	1.613
ARCTOSTAPHYLOS LEAVES	0.081	1.613
BLUEBERRY SPP. LEAVES	0.081	1.613
INTERRUPTED FERN LEAVES	0.081	1.613
UNKNOWN FERN LEAVES	0.161	1.613
WILLOW BUD CASES	0.242	1.613
BIRCH SPP. LEAVES	0.323	1.613
UNKNOWN STEMS	0.452	3.226
BONE FRAGMENTS	0.484	11.290
INSECT BODY SEGMENTS	0.516	1.613
ANIMAL SKIN	0.565	1.613
HONEYSUCKLE SEED	0.613	1.613
ASPEN BUD CASES	0.645	8.065
UNKNOWN VEGETATION	0.952	8.065
PLASTIC	1.048	1.613
ASPEN LEAF STEMS	1.565	4.839
UNKNOWN ANIMAL HAIR	1.694	8.065
PEAVINE SPP. LEAVES	1.790	11.290
FAWN AND DEER HAIR	1.806	8.065
UNKNOWN	3.742	8.065
ANTS	4.484	19.355
ASPEN CATKINS	4.871	6.452
WILD CALLA LEAVES	7.323	16.129
THOROUGHLY DIGESTED PLANT MAT.	10.435	11.290
GRASS SPP.	10.629	32.258
CATERPILLARS	13.677	24.194
ASPEN LEAVES	31.355	41.935

Number of Scats: 62

VOYAGEURS NATIONAL PARK, JULY 1989

Items	% Volume	% Frequency
ARCTOSTAPHYLOS SPP. SEEDS	0.022	2.174
UNKNOWN SEEDS	0.022	2.174
ARCTOSTAPHYLOS LEAVES	0.043	2.174
EGG SHELLS	0.043	2.174
FISH SCALES	0.043	4.348
CLOVER SPP. LEAVES	0.065	2.174
WILD LETTUCE LEAVES	0.065	2.174
INSECT LARVAE	0.109	2.174
UNKNOWN FERN	0.109	2.174
UNKNOWN LEAVES	0.109	2.174
UNKNOWN CATKINS	0.130	4.348
PEANUT SHELLS	0.152	2.174
UNKNOWN ANIMAL HAIR	0.174	6.522
UNKNOWN FERN LEAVES	0.217	2.174
BLUEBERRY SPP. BERRIES	0.239	4.348
CANTELOUP SEEDS	0.543	2.174
ASPEN CATKINS	0.717	10.870
HORNETS	0.717	4.348
FAWN AND DEER HAIR	0.870	2.174
GRASS SPP.	0.978	19.565
WILD CALLA LEAVES	1.087	4.348
ANT PUPAE	1.152	15.217
SERVICEBERRY SPP. SEEDS	1.304	10.870
BLUEBERRY SPP. LEAVES	1.326	34.783
BEAR HAIR	1.630	2.174
CATERPILLARS	2.109	2.174
THOROUGHLY DIGESTED PLANT MAT.	2.500	4.348
UNKNOWN	4.630	10.870
PLASTIC	5.326	8.696
UNKNOWN VEGETATION	6.674	21.739
ANTS	11.304	65.217
WILD SARSAPARILLA SEEDS	23.957	67.391
BLUEBERRY SPP. SEEDS	31.630	63.043

Number of Scats: 46

VOYAGEURS NATIONAL PARK, AUGUST 1989

Items	% Volume	% Frequency
RHAMNUS SPP. SEEDS	0.077	3.846
BLUEBERRY SPP. LEAVES	0.115	3.846
GRASS SEED	0.115	3.846
FAWN AND DEER HAIR	0.154	3.846
PAPER	0.808	3.846
UNKNOWN ANIMAL HAIR	0.923	7.692
BANEBERRY SEEDS	0.962	7.692
BLUEBERRY SPP. BERRIES	0.962	3.846
ALUMINUM FOIL	1.000	3.846
UNKNOWN SEEDS	1.000	7.692
PINE NEEDLES	1.923	3.846
RUBUS SPP. SEEDS	2.154	7.692
UNKNOWN	2.692	3.846
DOGWOOD SPP. SEEDS	3.731	7.692
ARCTOSTAPHYLOS SPP. SEEDS	3.846	3.846
PEAVINE SPP. LEAVES	3.846	3.846
WILD SANSAPARILLA SEEDS	4.077	11.538
BLUEBERRY SPP. SEEDS	4.231	7.692
PLASTIC	4.962	7.692
WILD CALLA LEAVES	6.077	7.692
GRAVEL	6.346	7.692
HORNETS	7.308	30.769
GRASS SPP.	8.154	42.308
UNKNOWN VEGETATION	11.269	30.769
ANTS	11.538	38.462
THOROUGHLY DIGESTED PLANT MAT.	11.538	11.538

Number of Scats: 26

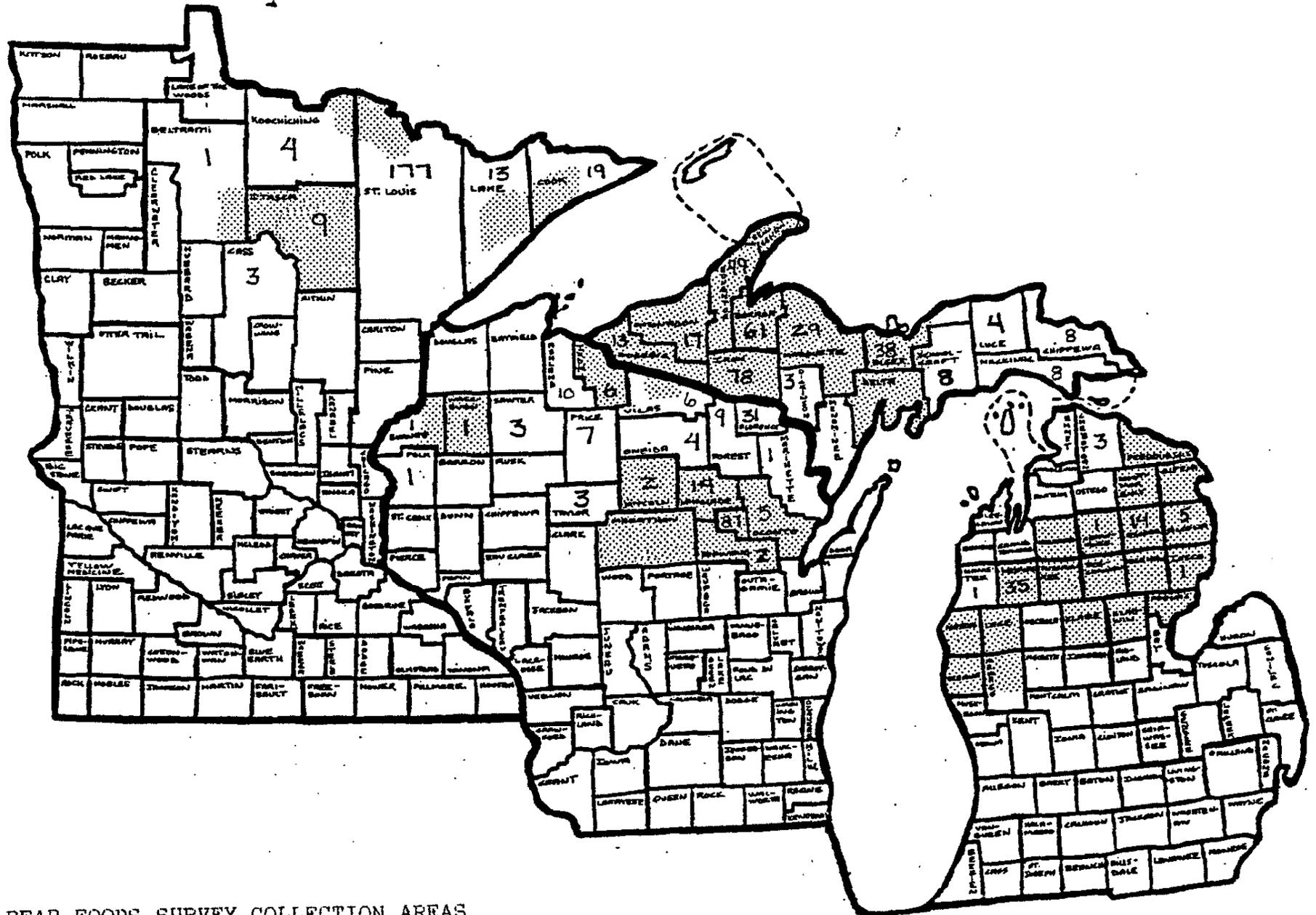
VOYAGEURS NATIONAL PARK, SEPTEMBER 1989

Items	% Volume	% Frequency
CLOVER SPP. LEAVES	0.250	8.333
JUNIFER SEEDS	0.417	8.333
WATERMELON SEEDS	0.417	8.333
GRAVEL	0.833	8.333
UNKNOWN SEEDS	1.000	16.667
ANTS	2.250	33.333
HORNETS	4.417	16.667
BONE FRAGMENTS	5.583	8.333
WILD CALLA STEMS	7.250	16.667
CORN KERNALS	7.917	8.333
JACK IN THE PULPIT LEAVES	8.333	8.333
GRASS SPP.	14.083	16.667
WILD CALLA LEAVES	21.667	33.333
UNKNOWN	25.833	33.333

Number of Scats: 12

BLACK BEAR FOODS SURVEY AND SCAT COLLECTION SITES FOR 1989

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BEAR FOODS SURVEY COLLECTION AREAS
 (Number represents scat sample size for that county)

FIGURE 2

BAILEY'S ECOREGIONS USED IN BLACK BEAR SCAT ANALYSIS 1989
2111, 2112, 2113

