

Pollen data from a 5-meter Upper Pleistocene Lacustrine Section
from Walker Lake, Coconino County,
Arizona

by

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This report is preliminary and has not been edited for
conformity with U. S. Geological Survey editorial standards
and stratigraphic nomenclature.

Introduction

Walker Lake, Arizona, lies in the bottom of a small volcanic cinder cone at an elevation of about 2500 m in the San Francisco Peaks volcanic field (Figure 1). The modern lake is quite shallow and occupies only the center of the depression. During upper Pleistocene time, however, the lake was considerably larger and deeper, and a sequence of lake muds was deposited that is at least 5 m thick and extends well away from the modern lake margin towards the crater rim.

The deposition of lake sediments of the Upper Pleistocene lake was interrupted by a fall of 1-2m of volcanic cinders from a crater several km distant. The top of the lake sediments has yielded a radiocarbon age of $15,440 \pm 250$ BP (A-1199; Long and Muller, 1981) which should closely approximate the time of the cinder fall. The cinder layer is in turn overlain by about 1 m of dark soil that appears to be developed in aeolian silt and is equivalent in age to the lacustrine sediments above the cinder layer in the existing pond.

In 1976 a pit was dug on the south side of the lake in order to examine and sample the lake sediments for pollen and paleomagnetic studies. Pollen samples were removed from the wall of the pit as a series of monoliths 5 cm square and 25 cm long. These monoliths were continuously sampled at a 1 cm sampling interval for pollen analysis. Each sample consisted of a 1-cm thick slice with a volume of 4 cm³. This report presents the raw pollen counts for 500 samples that cover a stratigraphic range of 503 cm (Appendix B).

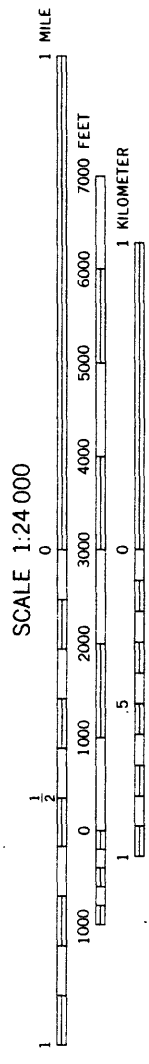
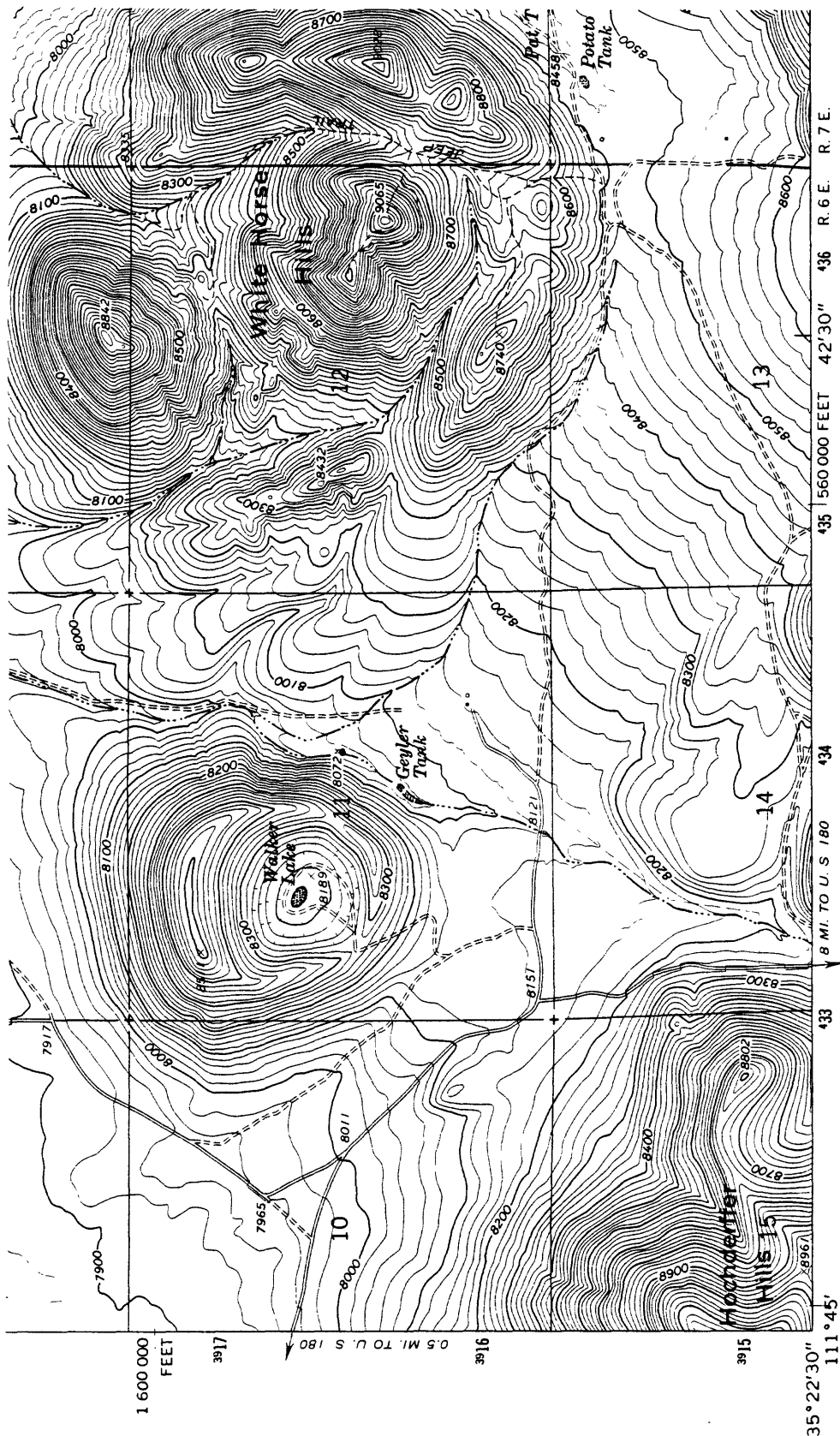
The depth datum used here refers to the top of the lake sediments and the bottom of the cinder layer. Leveling by S. Robinson in the reopened excavation in October, 1981, showed that the base of the cinder layer was about 70 cm above the lake surface at that time.

Pollen extraction was done using a modification of the acetylation, HF and chlorination process described by Hafsten (1961). Extractions were done on a volumetric basis to permit estimation of pollen concentrations, and particular care was taken to minimize losses of pollen during the decanting steps.

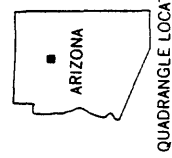
Pollen slides were prepared by diluting the extracted pollen sample to a known volume and then mounting one drop of the resulting mixture beneath a cover slip 22 mm square. The slide was estimated to contain the pollen from a volume of 1/80 cc of sediment. The amount of pollen on each slide was estimated by making a number of complete traverses across the cover slip until at least 200 fossil pollen grains (excluding Populus) were recorded. A sample ratio, SR, was then recorded for the sample along with the counts; the sample ratio was the width of the counted portion of the cover slip. The number of grains per cubic centimeter of sediment can be calculated by:

$$X \text{ (g cc}^{-1}\text{)} = y \cdot \frac{22}{SR} \cdot 80$$

where y is the number of grains counted and SR is the sample ratio.

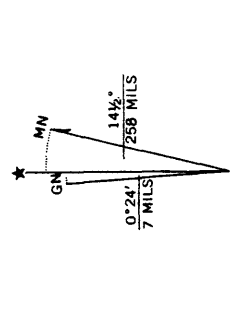


SCALE 1:24 000
 CONTOUR INTERVAL 20 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929



QUADRANGLE LOCATION

Figure 1.--Map showing location of Walker Lake. Reproduced from southwest corner of U.S.G.S. White Horse Hills 7½' Quadrangle.



UTM GRID AND 1966 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Notes on Variables

Pollen identifications were based primarily on a collection of reference material from local plants, supplemented by the pollen identification keys of Faegri and Iversen (1964) and Kapp (1969). A list of the variables counted is given in Appendix A. Most of the variable names are self-explanatory; specific notes are given below.

Pinus

Four species of Pinus are found in the Flagstaff area; these are P. ponderosa (ponderosa pine), P. flexilis (limber pine), P. aristata (bristlecone pine), and P. edulis (pinon pine). Two groups were established based on the modern pollen reference material. The first group included P. ponderosa and P. flexilis, and is referred to here as "large pine"; the other group includes P. aristata and P. edulis, and is referred to as "small pine". No attempt was made to identify pine grains as belonging to the subgenera Haploxyton or Diploxyton, although such a procedure should be able to distinguish between P. ponderosa (Diploxyton) and P. flexilis (Haploxyton). Similar shapes and sizes made it impractical to separate the two pollen types within each group. However, it may be safely assumed from modern geographic distributions that most "small pines" occurring with high frequencies of "Abies-Picea" pollen are P. aristata while those associated with warmer more xeric types are P. edulis.

Broken pieces of both types were counted only when a pollen grain or portion thereof could be identified regardless of the amount of broken bladder material. This may have resulted in a slight underrepresentation of "large Pinus" in zones where oxidation had occurred. "Small pinus" grains were much less subject to breakage.

Abies-Picea

Abies and Picea grains were identified to genus whenever possible; otherwise they were counted as "Abies-Picea". Fragments were counted as for "Pinus". For analysis of the data the counts for Abies, Picea, and Abies-Picea should be combined.

Pseudotsuga

This genus may be underrepresented since practically all grains found were collapsed and usually badly fragmented.

Tsuga

Not significant. Those found had continuous saccate fringes.

Quercus

No attempt was made to identify individual species but at the levels of greatest abundance several species appeared to be involved. Most common species throughout depth appeared to be Q. gambellii.

Populus

This pollen type was tallied but not included in the total used for a stopping criterion during counting because it is often not well preserved (Havinga, 1970) or is strongly underrepresented in the pollen rain by comparison with its abundance in the vegetation (Lichti-Fedorovitch and

Ritchie, 1965). Populus is included in the sum of total pollen shown on the count sheets, however.

Juniperus

Juniper pollen occurred only sporadically, even where other pollen types indicated it should be abundant. Differential preservation or low resistance to the extraction process may be responsible for this apparent anomaly (see, for example, Bradfield, 1973; Potter, 1967; Hevly, 1968; Havinga, 1970).

Compositae

Compositae were separated into Artemisia and "Other Compositae". Franseria was counted separately for many samples, but this procedure was not consistent, so the counts for Franseria and "Other Compositae" should be lumped together for analysis. Low-spine and high spine Compositae (Martin, 1963) were not separated.

Cheno-Ams

The Cheno-Am category includes pollen of the Chenopodiaceae and the related genus Amaranthus (Martin, 1963).

Miscellaneous

The miscellaneous category includes all unknown pollen grains and is included in the pollen sums shown in Appendix B. The "Unknowns" category was used for non-pollen unknowns, and is excluded from the pollen sum.

Pediastrum

The various forms of Pediastrum were counted as colonies and are excluded from the pollen sum. The "Pediastrum spore" category should be ignored.

Spores

Spores were noted separately where large specimens were encountered but counting was inconsistent since some slides revealed several thousand small spores during the course of counting 200 pollen grains. Such cases were recorded only as "abundant spores"; in the counts shown in the appendix, such counts are shown as 500 spores.

References Cited

- Bradfield, Maitland, 1973, Rock-cut cisterns and pollen "rain" in the vicinity of Old Oraibi, Arizona: Plateau, vol. 46, p. 68-71.
- Faegri, Knut, and Iversen, Johs., 1964, Textbook of Pollen Analysis, second revised edition: New York, Hafner, 237 p.
- Hafsten, U., 1961. Pleistocene development of vegetation and climate in the southern High Plains as evidenced by pollen analysis, in Wendorf, Fred, editor, Paleocology of the Llano Estacado: Fort Burgwin Research Center Publication No. 1, Museum of New Mexico Press, p. 59-91.
- Havinga, A. J., 1971, An experimental investigation into the decay of pollen and spores in various soil types, in Brooks, J., Grant, P. R., Muir, Marjorie, van Gijzel, P., and Shaw, G., editors, Sporopollenin: London, Academic Press, p. 446-479.
- Kapp, R. O., 1969, How to know pollen and spores: Dubuque, Iowa, W. C. Brown, 249 p.
- Lichti-Fedorovitch, Sigrid, and Ritchie, J. C., 1965, Contemporary pollen spectra in central Canada. II. The forest-grassland transition in Manitoba: Pollen et Spores, v. 7, p. 63-87.
- Long, Austin, and Muller, A. B., 1981. Arizona radiocarbon dates X: Radiocarbon, vol. 23, p. 191-217.
- Martin, Paul S., 1963. The Last 10,000 Years, a fossil pollen record of the American Southwest: Tucson, University of Arizona Press, 87 p.
- Potter, Loren, D., 1967, Differential pollen accumulation in water-tank sediments and adjacent soils: Ecology, vol. 48, p. 1041-1043.

APPENDIX A -- Variables counted

<u>Variable Number</u>	<u>Variable Name</u>
1	<u>Pinus, large</u>
2	<u>Pinus, small</u>
3	<u>Abies</u>
4	<u>Picea</u>
5	<u>Abies/Picea</u>
6	<u>Pseudotsuga</u>
7	<u>Tsuga</u>
8	<u>Quercus</u>
9	<u>Populus</u>
10	<u>Juniperus</u>
11	<u>Juglans</u>
12	<u>Alnus</u>
13	<u>Acer</u>
14	<u>Betula</u>
15	<u>Fraxinus</u>
16	<u>Artemisia</u>
17	<u>Franseria</u>
18	Other Compositae
19	Cheno-Ams
20	<u>Sarcobatus</u>
21	Gramineae
22	Saxifragaceae
23	<u>Berberis</u>
24	<u>Ephedra</u>
25	Rosaceae
26	Leguminosae
27	Cruciferae
28	<u>Malva</u>
29	<u>Plantago</u>
30	Nyctaginaceae
31	<u>Oxybaphus</u>
32	Polygonaceae
33	<u>Polygonum</u>
34	<u>Rhamnus</u>
35	Gentian
36	Cyperaceae
37	Miscellaneous
38	<u>Pediastrum boryanum</u>
39	<u>Pediastrum boryanum longifolium</u>
40	<u>Pediastrum araneosum</u>
41	<u>Pediastrum integrum</u>
42	<u>Pediastrum sculptatum</u>
43	<u>Pediastrum spore</u>
44	Spores
45	Unknowns

APPENDIX B: POLLEN COUNTS

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

1

Sample number	1	2	3	4	5
Sample depth (cm)	0.5	1.5	2.5	3.5	4.5
Sample ratio	7.8	11.7	15.6	7.8	3.9
Pinus, large	25	78	47	51	38
Pinus, small	9	24	33	56	29
Abies/Picea	0	1	3	5	7
Pseudotsuga	4	4	4	4	2
Quercus	5	13	9	15	9
Artemisia	49	39	47	47	67
Franseria-type	0	1	1	0	0
Other Compositae	65	95	76	57	21
Cheno-Ams	12	2	4	16	10
Sarcobatus	0	0	0	3	1
Gramineae	15	17	11	19	12
Saxifragaceae	0	2	1	0	0
Berberis	0	0	3	1	0
Ephedra	10	6	8	2	5
Miscellaneous	0	4	6	8	10
Pediastrum sculptatum	0	0	1	0	0
Unknowns	1	2	0	0	0
Total pollen	194	286	253	284	211

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

2

Sample number	6	7	8	9	10
Sample depth (cm)	5.5	6.5	7.5	8.5	9.5
Sample ratio	3.9	7.8	3.9	3.9	3.9
Pinus, large	48	57	44	54	62
Pinus, small	70	59	44	38	42
Abies/Picea	10	8	9	8	13
Pseudotsuga	0	3	4	1	2
Quercus	4	8	4	5	4
Artemisia	72	148	74	75	86
Franseria-type	1	2	5	9	3
Other Compositae	25	44	25	20	8
Cheno-Ams	17	31	13	19	17
Sarcobatus	2	1	4	1	2
Gramineae	9	19	28	24	17
Saxifragaceae	0	0	0	1	0
Berberis	1	0	2	2	2
Ephedra	1	4	3	4	1
Miscellaneous	2	20	9	13	6
Total pollen	262	404	268	274	265

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

3

Sample number	11	12	13	14	15
Sample depth (cm)	10.5	11.5	12.5	13.5	14.5
Sample ratio	3.9	3.9	7.8	3.9	7.8
Pinus, large	65	55	85	44	84
Pinus, small	55	39	86	44	66
Abies/Picea	5	14	13	8	14
Pseudotsuga	0	2	3	0	4
Quercus	8	4	6	5	11
Artemisia	76	123	136	82	134
Franseria-type	1	1	2	1	0
Other Compositae	3	11	8	9	16
Cheno-Ams	22	20	27	17	36
Gramineae	6	20	31	15	48
Berberis	1	0	0	1	1
Ephedra	2	3	7	2	3
Miscellaneous	12	4	6	3	9
Total pollen	256	296	410	231	426

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

4

Sample number	16	17	18	19	20
Sample depth (cm)	15.5	16.5	17.5	18.5	19.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	38	28	43	34	45
Pinus, small	33	40	46	27	33
Abies/Picea	5	9	6	6	9
Pseudotsuga	2	0	0	1	0
Quercus	6	13	5	6	8
Artemisia	77	96	72	94	96
Franseria-type	3	0	2	1	1
Other Compositae	14	8	14	9	12
Cheno-Ams	11	14	13	27	26
Sarcobatus	1	1	0	3	2
Gramineae	8	9	16	19	9
Saxifragaceae	1	2	0	0	1
Berberis	2	3	7	4	3
Ephedra	2	1	2	3	6
Miscellaneous	7	8	6	9	9
Total pollen	210	232	232	243	260

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

5

Sample number	21	22	23	24	25
Sample depth (cm)	20.5	21.5	22.5	23.5	24.5
Sample ratio	3.9	7.8	3.9	3.9	3.9
Pinus, large	48	86	48	47	42
Pinus, small	61	108	35	35	44
Abies/Picea	9	20	13	12	4
Pseudotsuga	1	3	0	0	0
Quercus	14	14	3	9	11
Artemisia	66	86	86	91	85
Franseria-type	1	0	0	3	0
Other Compositae	6	8	8	9	5
Cheno-Ams	23	20	17	22	21
Sarcobatus	1	0	1	1	0
Gramineae	6	9	10	24	18
Berberis	4	6	3	2	4
Ephedra	1	2	3	3	2
Miscellaneous	9	4	11	7	4
Total pollen	250	366	238	265	240

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

6

Sample number	26	27	28	29	30
Sample depth (cm)	25.5	26.5	27.5	28.5	29.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	42	40	50	47	31
Pinus, small	52	26	42	34	22
Abies/Picea	6	6	7	11	4
Pseudotsuga	3	0	2	0	0
Quercus	12	12	11	10	9
Artemisia	120	74	97	119	74
Franseria-type	2	1	1	0	6
Other Compositae	11	2	8	9	11
Cheno-Ams	12	31	14	21	20
Sarcobatus	1	2	2	1	1
Gramineae	13	12	7	20	16
Saxifragaceae	0	0	1	0	1
Berberis	4	0	5	0	3
Ephedra	1	2	0	3	3
Miscellaneous	5	1	5	2	2
Pediastrum boryanum	0	0	1	0	0
Total pollen	284	209	252	277	203

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

7

Sample number	31	32	33	34	35
Sample depth (cm)	30.5	31.5	32.5	33.5	34.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	72	38	39	39	66
Pinus, small	66	43	46	27	16
Abies/Picea	12	9	10	1	7
Pseudotsuqa	1	0	3	14	8
Quercus	21	7	12	13	12
Artemisia	95	71	96	74	87
Franseria-type	5	4	4	0	1
Other Compositae	15	8	7	9	11
Cheno-Ams	13	27	21	13	21
Sarcobatus	1	0	0	3	1
Gramineae	27	32	11	23	27
Saxifragaceae	1	0	0	0	0
Berberis	5	3	2	2	5
Ephedra	3	5	1	0	4
Miscellaneous	8	3	4	3	3
Pediastrum boryanum	0	0	0	0	2
Total pollen	345	250	256	221	269

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

8

Sample number	36	37	38	39	40
Sample depth (cm)	35.5	36.5	37.5	38.5	39.5
Sample ratio	3.9	3.9	3.9	3.9	7.8
Pinus, large	41	39	51	30	52
Pinus, small	27	29	40	26	45
Abies/Picea	12	6	4	4	4
Pseudotsuga	4	4	11	10	2
Quercus	11	13	11	4	4
Artemisia	72	68	97	79	118
Franseria-type	3	0	2	0	2
Other Compositae	8	8	12	10	11
Cheno-Ams	21	18	9	9	28
Sarcobatus	0	0	1	0	2
Gramineae	12	18	19	21	38
Saxifragaceae	1	0	0	0	0
Berberis	0	0	2	0	4
Ephedra	4	1	3	2	3
Miscellaneous	2	1	1	2	2
Ped. bory. longifol.	1	0	0	0	0
Total pollen	218	205	263	197	315

Walker Lake, Arizona - Pollen counts
 for 5-meter section below cinders

9

Sample number	41	42	43	44	45
Sample depth (cm)	40.5	41.5	42.5	43.5	44.5
Sample ratio	7.8	3.9	3.9	3.9	3.9
Pinus, large	56	36	36	49	43
Pinus, small	30	23	9	9	32
Abies/Picea	2	7	2	4	5
Pseudotsuga	11	4	16	4	5
Quercus	4	2	0	5	4
Artemisia	132	75	62	72	112
Franseria-type	1	0	0	2	3
Other Compositae	13	11	21	17	14
Cheno-Ams	28	13	24	14	20
Sarcobatus	1	0	2	0	0
Gramineae	29	23	56	76	39
Berberis	0	0	1	2	2
Ephedra	1	4	8	5	5
Miscellaneous	2	1	3	0	2
Pediastrum boryanum	0	0	1	3	0
Ped. bory. longifol.	0	0	0	1	0
Pediastrum integrum	0	0	0	2	0
Pediastrum sculptatum	0	0	0	0	2
Total pollen	310	199	240	259	286

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

10

Sample number	46	47	48	49	50
Sample depth (cm)	45.5	46.5	47.5	48.5	49.5
Sample ratio	3.9	3.9	7.8	3.9	7.8
Pinus, large	46	49	49	55	34
Pinus, small	29	33	24	34	15
Abies/Picea	7	1	2	6	9
Pseudotsuga	4	2	12	7	4
Quercus	1	3	8	6	4
Artemisia	66	60	89	105	56
Franseria-type	2	3	0	3	2
Other Compositae	13	14	15	22	6
Cheno-Ams	16	20	19	27	18
Sarcobatus	0	0	0	0	3
Gramineae	28	46	55	36	43
Berberis	5	1	0	0	0
Ephedra	2	2	7	7	8
Miscellaneous	5	2	2	6	1
Pediastrum boryanum	0	0	3	1	2
Ped. bory. longifol.	1	0	0	0	0
Pediastrum integrum	1	1	1	0	6
Pediastrum sculptatum	0	2	6	0	0
Total pollen	224	236	282	314	203

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

11

Sample number	51	52	53	54	55
Sample depth (cm)	50.5	51.5	52.5	53.5	54.5
Sample ratio	7.8	3.9	3.9	3.9	3.9
Pinus, large	70	49	51	56	41
Pinus, small	46	29	42	20	22
Abies/Picea	11	6	12	5	6
Pseudotsuga	2	2	2	5	4
Quercus	17	11	9	6	7
Artemisia	99	61	72	78	78
Franseria-type	2	3	0	2	4
Other Compositae	12	8	8	8	11
Cheno-Ams	22	16	20	20	16
Sarcobatus	0	0	0	1	0
Gramineae	43	25	39	27	32
Saxifragaceae	0	0	2	0	0
Berberis	0	0	1	2	0
Ephedra	4	3	2	5	14
Miscellaneous	6	1	2	3	0
Pediastrum integrum	5	2	0	0	0
Pediastrum sculptatum	3	1	1	0	0
Total pollen	334	214	262	238	235

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

12

Sample number	56	57	58	59	60
Sample depth (cm)	55.5	56.5	57.5	58.5	59.5
Sample ratio	7.8	3.9	3.9	7.8	7.8
Pinus, large	61	41	50	47	50
Pinus, small	38	33	40	38	42
Abies/Picea	5	3	3	7	3
Pseudotsuga	16	12	4	16	12
Quercus	9	5	4	13	10
Artemisia	87	46	76	76	80
Franseria-type	8	4	3	7	6
Other Compositae	16	6	13	20	16
Cheno-Ams	24	14	12	25	17
Sarcobatus	0	0	2	0	0
Gramineae	44	34	34	56	73
Saxifragaceae	0	1	0	1	2
Berberis	3	1	3	3	2
Ephedra	10	5	11	19	5
Miscellaneous	3	1	1	0	0
Pediastrum boryanum	0	0	1	0	0
Pediastrum integrum	0	0	0	1	0
Pediastrum sculptatum	1	0	0	0	0
Total pollen	324	206	256	328	318

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

13

Sample number	61	62	63	64	65
Sample depth (cm)	60.5	61.5	62.5	63.5	64.5
Sample ratio	3.9	7.8	7.8	3.9	7.8
Pinus, large	31	40	45	30	44
Pinus, small	14	10	19	10	21
Abies/Picea	1	5	1	5	5
Pseudotsuga	5	15	29	14	24
Quercus	7	6	7	6	9
Artemisia	55	51	99	42	72
Franseria-type	0	5	0	0	0
Other Compositae	5	17	21	15	10
Cheno-Ams	11	13	16	5	12
Sarcobatus	2	0	0	2	1
Gramineae	57	71	51	57	54
Saxifragaceae	0	1	0	0	0
Berberis	0	3	0	1	2
Ephedra	17	21	15	9	18
Miscellaneous	1	2	0	0	1
Pediastrum boryanum	0	0	0	0	1
Pediastrum integrum	0	0	0	0	1
Total pollen	206	260	303	196	273

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

14

Sample number	66	67	68	69	70
Sample depth (cm)	65.5	66.5	67.5	68.5	69.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	52	52	55	47	37
Pinus, small	23	27	17	16	16
Abies/Picea	6	16	6	9	7
Pseudotsuga	3	2	4	8	10
Quercus	2	3	7	4	4
Artemisia	62	85	73	38	70
Franseria-type	1	0	3	5	5
Other Compositae	10	9	11	14	13
Cheno-Ams	12	23	17	17	20
Sarcobatus	0	0	0	2	1
Gramineae	26	35	43	27	25
Saxifragaceae	0	0	1	0	0
Berberis	2	2	4	5	1
Fohedra	0	7	5	5	8
Miscellaneous	1	0	1	2	0
Pediastrum boryanum	0	0	0	1	0
Total pollen	200	261	247	249	217

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

15

Sample number	71	72	73	74	75
Sample depth (cm)	70.5	71.5	72.5	73.5	74.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	39	58	46	39	28
Pinus, small	11	20	12	13	15
Abies/Picea	7	16	11	7	8
Pseudotsuga	10	15	14	5	4
Quercus	1	9	6	4	2
Artemisia	56	58	77	59	75
Franseria-type	5	4	4	4	3
Other Compositae	16	11	8	12	16
Cheno-Ams	13	18	8	12	27
Sarcobatus	1	0	1	2	0
Gramineae	46	79	41	61	48
Saxifragaceae	2	0	0	1	3
Berberis	1	2	0	1	1
Ephedra	5	10	2	8	5
Miscellaneous	2	0	2	1	0
Pediastrum integrum	0	0	1	0	0
Total pollen	215	300	232	229	235

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

16

Sample number	76	77	78	79	80
Sample depth (cm)	75.5	76.5	77.5	78.5	79.5
Sample ratio	3.9	3.9	3.9	6.5	3.9
Pinus, large	36	44	48	41	35
Pinus, small	16	18	7	14	13
Abies	0	0	0	13	12
Picea	0	0	0	13	13
Abies/Picea	6	6	15	26	25
Pseudotsuga	1	8	19	3	1
Quercus	6	5	6	13	23
Populus	0	0	0	5	10
Acer	0	0	0	0	2
Artemisia	71	70	76	31	46
Franseria-type	2	3	1	52	18
Other Compositae	11	9	14	55	22
Cheno-Ams	16	10	21	0	27
Sarcobatus	3	1	3	0	0
Gramineae	43	50	51	0	10
Saxifragaceae	3	3	2	8	6
Ephedra	9	5	10	2	1
Rosaceae	0	0	0	8	0
Leguminosae	0	0	0	0	4
Cruciferae	0	0	0	0	29
Miscellaneous	2	0	1	0	0
Pediastrum boryanum	0	1	2	0	0
Spores	0	0	0	0	2
Unknowns	0	0	0	2	0
Total pollen	225	232	274	284	297

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

17

Sample number	81	82	83	84	85
Sample depth (cm)	80.5	81.5	82.5	83.5	84.5
Sample ratio	3.9	3.9	2.6	3.9	6.5
Pinus, large	24	25	34	36	26
Pinus, small	20	15	28	30	19
Abies	8	6	1	3	3
Picea	6	4	4	2	2
Abies/Picea	14	10	15	5	5
Pseudotsuga	3	5	2	2	1
Quercus	6	3	10	2	1
Populus	3	19	5	8	12
Juniperus	2	7	3	5	0
Juglans	2	0	2	4	1
Alnus	0	3	0	0	2
Artemisia	49	37	55	71	62
Franseria-type	16	26	11	7	8
Other Compositae	17	31	18	11	15
Cheno-Ams	13	19	16	27	23
Gramineae	34	9	7	25	15
Saxifragaceae	8	10	2	3	3
Berberis	1	6	6	9	10
Ephedra	6	1	1	6	3
Rosaceae	1	0	1	3	2
Leguminosae	4	6	5	2	5
Cruciferae	17	18	5	5	9
Malvaceae	0	0	1	0	0
Plantago	0	2	0	1	0
Spores	2	5	10	11	6
Total pollen	254	262	232	267	227

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

18

Sample number	86	87	88	89	90
Sample depth (cm)	85.5	86.5	87.5	88.5	89.5
Sample ratio	5.2	6.5	10.4	11.7	15.6
Pinus, large	26	39	37	25	46
Pinus, small	14	0	1	1	1
Abies	5	7	9	16	21
Picea	3	12	16	15	17
Abies/Picea	8	19	25	31	38
Pseudotsuga	4	1	1	0	0
Quercus	4	0	0	1	4
Populus	16	17	10	26	21
Juniperus	5	1	0	3	4
Juglans	2	0	0	0	0
Alnus	0	1	0	0	2
Artemisia	57	86	45	93	87
Franseria-type	15	9	17	2	5
Other Compositae	19	13	21	4	12
Cheno-Ams	44	39	33	24	33
Gramineae	8	6	13	3	1
Saxifragaceae	9	13	3	7	6
Berberis	2	5	7	8	9
Ephedra	0	0	0	0	1
Rosaceae	2	2	0	7	12
Leguminosae	6	3	2	0	1
Cruciferae	11	7	24	0	0
Malvaceae	0	0	0	1	0
Plantago	2	3	3	6	1
Spores	39	108	295	319	500
Total pollen	262	283	267	273	322

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

19

Sample number	91	92	93	94	95
Sample depth (cm)	90.5	91.5	92.5	93.5	94.5
Sample ratio	5.2	6.5	7.8	7.8	7.8
Pinus, large	23	35	25	40	32
Pinus, small	9	12	3	4	0
Abies	11	10	6	8	9
Picea	13	11	10	12	11
Abies/Picea	24	21	16	22	20
Pseudotsuga	2	2	3	4	0
Tsuga	0	0	0	0	1
Quercus	2	1	1	0	0
Populus	27	19	21	26	23
Juniperus	2	8	5	7	1
Juglans	0	0	0	1	1
Artemisia	66	71	84	71	73
Franseria-type	3	2	4	3	3
Other Compositae	11	7	12	12	8
Cheno-Ams	31	25	27	27	37
Gramineae	3	1	6	6	4
Saxifragaceae	3	1	2	9	0
Berberis	3	0	1	1	2
Ephedra	1	3	3	3	0
Rosaceae	11	5	14	9	11
Leguminosae	4	1	9	5	2
Cruciferae	13	9	5	13	25
Plantago	0	0	1	2	1
Spores	23	18	12	11	12
Total pollen	262	244	258	285	264

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

20

Sample number	96	97	98	99	100
Sample depth (cm)	95.5	96.5	97.5	98.5	99.5
Sample ratio	5.2	6.5	5.2	5.2	6.5
Pinus, large	29	39	48	29	43
Pinus, small	5	2	0	0	4
Abies	8	10	6	10	10
Picea	9	9	10	11	11
Abies/Picea	17	19	16	21	21
Pseudotsuga	1	2	0	0	0
Tsuga	1	0	0	0	0
Quercus	5	17	21	2	6
Populus	30	19	11	8	9
Juniperus	2	7	7	8	9
Artemisia	56	40	32	61	49
Franseria-type	5	5	12	4	7
Other Compositae	11	14	16	13	13
Cheno-Ams	27	22	28	17	24
Sarcobatus	2	1	4	1	2
Gramineae	8	4	4	9	7
Saxifragaceae	1	2	2	1	2
Berberis	1	1	2	3	1
Ephedra	0	0	0	3	2
Rosaceae	14	17	10	19	5
Leguminosae	7	13	9	4	6
Cruciferae	0	11	20	17	22
Malvaceae	1	0	0	0	0
Plantago	0	0	0	1	0
Spores	32	56	22	16	42
Total pollen	240	254	258	242	253

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

21

Sample number	101	102	103	104	105
Sample depth (cm)	100.5	101.5	102.5	103.5	104.5
Sample ratio	5.2	5.2	11.7	5.2	5.2
Pinus, large	35	56	42	45	50
Pinus, small	8	7	2	3	5
Abies	14	14	20	11	14
Picea	16	10	11	19	9
Abies/Picea	30	24	31	30	23
Pseudotsuga	1	0	0	0	1
Quercus	3	1	2	5	1
Populus	15	16	0	17	20
Juniperus	5	3	10	4	4
Betula	1	1	1	0	0
Artemisia	65	34	38	54	51
Franseria-type	7	8	8	10	12
Other Compositae	14	20	16	12	15
Cheno-Ams	31	21	20	17	26
Sarcobatus	2	3	4	2	1
Gramineae	13	11	16	14	15
Saxifragaceae	3	3	0	0	1
Berberis	0	0	0	0	2
Ephedra	4	3	1	0	0
Rosaceae	6	8	8	2	7
Leguminosae	8	6	14	9	3
Cruciferae	10	32	15	12	27
Malvaceae	1	0	0	0	0
Plantago	0	1	0	0	0
Spores	25	24	0	6	18
Total pollen	292	282	259	266	287

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

22

Sample number	106	107	108	109	110
Sample depth (cm)	105.5	106.5	107.5	108.5	109.5
Sample ratio	9.1	5.2	6.5	3.9	6.5
Pinus, large	42	54	48	37	38
Pinus, small	8	4	8	17	19
Abies	14	8	10	7	5
Picea	11	7	18	11	11
Abies/Picea	25	15	28	18	16
Pseudotsuga	2	4	1	0	3
Quercus	2	0	0	0	2
Populus	25	46	72	20	22
Juniperus	2	4	5	3	5
Betula	0	1	1	1	0
Artemisia	50	66	39	70	80
Franseria-type	11	1	4	4	1
Other Compositae	16	6	6	6	1
Cheno-Ams	25	15	37	35	27
Sarcobatus	0	2	1	1	1
Gramineae	6	15	17	22	16
Saxifragaceae	3	1	0	1	3
Berberis	0	1	0	0	0
Ephedra	1	1	0	2	0
Rosaceae	8	8	0	7	2
Leguminosae	4	10	3	1	7
Cruciferae	18	14	10	12	3
Spores	21	18	17	32	30
Total pollen	273	283	308	275	262

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

23

Sample number	111	112	113	114	115
Sample depth (cm)	110.5	111.5	112.5	113.5	114.5
Sample ratio	5.2	6.5	5.2	3.9	5.2
Pinus, large	40	39	22	27	25
Pinus, small	13	7	48	43	53
Abies	10	6	4	18	5
Picea	9	7	6	13	7
Abies/Picea	19	13	10	31	12
Pseudotsuga	1	2	0	1	1
Quercus	1	1	0	0	0
Populus	37	20	22	18	25
Juniperus	4	5	4	9	0
Betula	0	1	0	0	0
Artemisia	88	58	87	99	67
Franseria-type	0	4	2	6	6
Other Compositae	5	11	6	13	15
Cheno-Ams	21	22	21	33	22
Sarcobatus	1	1	0	1	0
Gramineae	0	16	11	16	8
Saxifragaceae	0	1	1	2	2
Berberis	0	0	1	1	1
Ephedra	0	0	1	2	0
Rosaceae	1	9	2	3	2
Leguminosae	1	5	1	2	1
Cruciferae	6	21	8	4	6
Spores	19	37	56	20	17
Total pollen	257	249	257	342	258

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

24

Sample number	116	117	118	119	120
Sample depth (cm)	115.5	116.5	117.5	118.5	119.5
Sample ratio	3.9	3.9	3.9	3.9	5.2
Pinus, large	31	20	30	20	25
Pinus, small	39	35	31	30	25
Abies	12	10	8	8	7
Picea	9	10	12	8	5
Abies/Picea	21	20	20	16	12
Quercus	0	3	1	1	1
Populus	20	14	14	23	21
Juniperus	2	4	5	5	9
Juglans	0	0	3	2	1
Alnus	2	0	0	0	0
Betula	0	0	0	0	1
Artemisia	94	70	89	66	59
Franseria-type	8	1	6	8	5
Other Compositae	17	8	9	13	9
Cheno-Ams	18	17	20	17	17
Sarcobatus	2	2	0	1	0
Gramineae	29	34	14	15	10
Saxifragaceae	2	2	0	2	1
Berberis	1	4	1	0	2
Ephedra	0	2	0	0	1
Rosaceae	4	2	2	4	12
Leguminosae	3	4	6	1	1
Cruciferae	0	8	3	10	26
Malvaceae	0	1	0	0	0
Plantago	0	0	0	1	0
Spores	15	12	69	39	54
Total pollen	314	271	274	251	250

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

25

Sample number	121	122	123	124	125
Sample depth (cm)	120.5	121.5	122.5	123.5	124.5
Sample ratio	3.9	5.2	5.2	3.9	2.6
Pinus, large	37	33	47	30	30
Pinus, small	46	39	57	23	15
Abies	13	10	3	7	13
Picea	11	6	8	6	11
Abies/Picea	24	16	11	13	24
Pseudotsuga	0	0	0	0	1
Quercus	3	1	9	4	1
Populus	16	24	23	15	9
Juniperus	9	2	5	5	6
Juglans	3	1	1	0	0
Alnus	0	0	1	0	0
Petula	4	0	0	0	1
Fraxinus	1	0	0	0	0
Artemisia	82	70	70	76	70
Franseria-type	3	2	9	18	4
Other Compositae	8	5	18	24	10
Cheno-Ams	36	15	19	25	19
Sarcobatus	0	0	0	1	0
Gramineae	24	19	14	10	8
Saxifragaceae	3	0	2	1	1
Berberis	1	0	0	0	2
Ephedra	1	0	1	2	7
Rosaceae	8	2	13	0	2
Leguminosae	1	2	0	7	3
Cruciferae	7	3	9	4	3
Plantago	0	0	0	1	0
Nyctaginaceae	0	1	0	0	0
Oxybaphus	1	0	0	0	0
Spores	32	4	47	45	16
Total pollen	342	251	320	272	240

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

26

Sample number	126	127	128	129	130
Sample depth (cm)	125.5	126.5	127.5	128.5	129.5
Sample ratio	3.9	3.9	3.9	2.6	3.9
Pinus, large	41	44	31	37	48
Pinus, small	6	17	8	12	8
Abies	17	17	14	26	16
Picea	17	18	30	20	32
Abies/Picea	34	35	44	46	48
Pseudotsuga	0	0	2	0	0
Quercus	3	1	1	1	1
Populus	11	6	8	3	8
Juniperus	9	4	3	3	4
Betula	1	0	0	0	0
Artemisia	86	86	70	81	65
Franseria-type	4	11	16	1	3
Other Compositae	5	22	23	3	3
Cheno-Ams	26	22	20	25	26
Sarcobatus	0	1	0	0	2
Gramineae	17	18	28	14	7
Saxifragaceae	1	2	2	3	1
Ephedra	2	2	1	1	0
Rosaceae	2	2	3	0	0
Leguminosae	4	4	5	1	2
Cruciferae	1	3	5	1	0
Spores	19	69	34	500	500
Total pollen	287	315	314	278	274

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

27

Sample number	131	132	133	134	135
Sample depth (cm)	130.5	131.5	132.5	133.5	134.5
Sample ratio	2.6	2.6	5.2	3.9	5.2
Pinus, large	48	56	48	60	45
Pinus, small	14	25	31	28	23
Abies	16	10	13	11	7
Picea	11	11	14	16	25
Abies/Picea	27	21	27	27	32
Pseudotsuga	1	0	0	0	1
Quercus	2	2	4	7	4
Populus	21	10	13	16	9
Juniperus	2	0	7	5	0
Juglans	1	1	0	0	0
Betula	1	0	4	1	0
Artemisia	54	35	47	68	65
Franseria-type	6	5	4	4	9
Other Compositae	10	13	10	7	15
Cheno-Ams	15	27	18	20	18
Sarcobatus	1	0	0	1	0
Gramineae	17	27	25	27	20
Saxifragaceae	0	2	4	1	7
Berberis	0	1	1	0	0
Ephedra	2	2	2	1	2
Rosaceae	2	1	0	2	0
Leguminosae	0	2	2	2	1
Cruciferae	3	12	8	4	4
Spores	8	12	25	42	39
Total pollen	254	263	282	308	287

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

28

Sample number	136	137	138	139	140
Sample depth (cm)	135.5	136.5	137.5	138.5	139.5
Sample ratio	5.2	5.2	6.5	2.6	3.9
Pinus, large	46	58	50	45	40
Pinus, small	18	14	32	22	22
Abies	13	12	7	9	6
Picea	34	17	11	17	27
Abies/Picea	47	29	18	26	33
Pseudotsuga	0	0	1	0	1
Quercus	4	2	1	2	0
Populus	27	12	25	10	9
Juniperus	0	3	3	0	3
Juglans	1	0	0	0	0
Alnus	0	0	2	0	0
Betula	2	0	0	0	1
Artemisia	77	77	73	77	60
Franseria-type	2	3	3	3	7
Other Compositae	6	6	12	6	9
Cheno-Ams	17	16	13	12	13
Gramineae	12	12	22	28	24
Saxifragaceae	2	0	5	3	3
Ephedra	0	0	2	3	0
Rosaceae	1	0	1	0	3
Leguminosae	1	2	2	5	1
Cruciferae	1	0	5	7	4
Plantago	0	0	1	0	0
Oxybaphus	0	0	1	0	0
Polygonaceae	0	0	0	3	0
Spores	500	500	43	10	13
Total pollen	311	263	290	278	266

walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

29

Sample number	141	142	143	144	145
Sample depth (cm)	140.5	141.5	142.5	143.5	144.5
Sample ratio	2.6	3.9	3.9	5.2	3.9
Pinus, large	32	38	29	25	39
Pinus, small	13	22	27	19	13
Abies	11	9	8	8	15
Picea	24	19	11	14	22
Abies/Picea	35	28	19	22	37
Pseudotsuga	0	2	0	0	1
Quercus	0	2	0	0	0
Populus	3	12	19	17	13
Juniperus	4	2	0	4	5
Juglans	0	1	1	0	0
Betula	1	6	0	0	3
Artemisia	57	57	50	67	96
Franseria-type	0	4	6	1	2
Other Compositae	5	8	9	22	7
Cheno-Ams	12	17	10	18	25
Sarcobatus	0	0	2	0	0
Gramineae	37	34	42	19	51
Saxifragaceae	0	3	1	1	2
Berberis	0	0	0	1	0
Ephedra	0	0	0	1	2
Rosaceae	2	0	1	2	3
Leguminosae	3	2	4	7	5
Cruciferae	1	3	8	3	5
Plantago	0	0	1	1	1
Polygonaceae	2	3	0	0	0
Spores	11	30	31	68	88
Total pollen	242	272	248	252	347

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

30

Sample number	146	147	148	149	150
Sample depth (cm)	145.5	146.5	147.5	148.5	149.5
Sample ratio	3.9	3.9	5.2	3.9	6.5
Pinus, large	28	31	36	27	34
Pinus, small	16	9	17	25	28
Abies	6	9	8	11	14
Picea	28	19	15	17	18
Abies/Picea	34	28	23	28	32
Pseudotsuga	1	0	0	2	2
Quercus	0	0	2	0	2
Populus	16	9	19	21	6
Juniperus	0	4	4	1	0
Juglans	0	0	2	3	2
Betula	1	0	4	4	3
Artemisia	80	86	80	64	33
Franseria-type	4	4	8	7	3
Other Compositae	9	10	12	12	5
Cheno-Ams	18	20	20	28	20
Sarcobatus	0	1	0	0	0
Gramineae	31	42	39	72	49
Saxifragaceae	3	2	5	1	0
Berberis	1	1	0	1	0
Ephedra	1	2	1	1	0
Rosaceae	0	1	5	1	1
Leguminosae	1	4	2	5	1
Cruciferae	8	3	12	7	2
Malvaceae	1	1	0	0	1
Plantago	2	1	0	0	0
Polygonaceae	0	0	1	0	2
Spores	8	26	500	500	500
Total pollen	289	287	315	338	258

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

31

Sample number	151	152	153	154	155
Sample depth (cm)	150.5	151.5	152.5	153.5	154.5
Sample ratio	5.2	5.2	7.8	5.2	3.9
Pinus, large	15	18	25	32	28
Pinus, small	12	13	16	9	11
Abies	13	18	9	9	5
Picea	26	21	25	22	17
Abies/Picea	39	39	34	31	22
Pseudotsuga	4	0	1	0	3
Quercus	6	6	4	12	7
Populus	1	8	5	8	3
Juniperus	6	8	7	9	1
Juglans	0	0	1	0	1
Betula	5	3	3	2	0
Artemisia	51	53	77	53	48
Franseria-type	7	5	5	3	5
Other Compositae	8	9	8	10	7
Cheno-Ams	13	30	14	18	11
Sarcobatus	2	0	0	0	0
Gramineae	72	42	57	105	48
Saxifragaceae	10	3	4	5	1
Berberis	0	1	0	0	0
Rosaceae	4	2	2	0	1
Leguminosae	6	7	1	3	5
Cruciferae	2	4	3	3	4
Malvaceae	0	0	0	0	1
Plantago	0	1	1	1	2
Polygonaceae	2	1	2	1	3
Miscellaneous	1	0	0	0	0
Spores	500	50	53	48	29
Pediastrum (undiff.)	0	0	4	1	3
Total pollen	305	292	304	336	234

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

32

Sample number	156	157	158	159	160
Sample depth (cm)	155.5	156.5	157.5	158.5	159.5
Sample ratio	5.2	3.9	3.9	3.9	2.6
Pinus, large	18	26	32	38	18
Pinus, small	11	21	36	33	19
Abies	5	5	3	12	7
Picea	13	14	7	8	7
Abies/Picea	18	19	10	20	14
Pseudotsuga	1	0	0	0	2
Quercus	11	1	1	5	5
Populus	1	3	5	4	2
Juniperus	3	6	6	6	3
Juglans	1	0	0	0	0
Betula	3	5	1	2	0
Artemisia	41	40	46	46	40
Franseria-type	7	4	4	5	5
Other Compositae	13	9	10	19	9
Cheno-Ams	11	17	11	21	5
Gramineae	77	75	90	55	136
Saxifragaceae	2	1	2	1	3
Berberis	0	0	0	2	1
Ephedra	0	4	1	0	0
Rosaceae	2	1	2	5	2
Leguminosae	4	2	1	1	1
Cruciferae	5	7	10	10	2
Malvaceae	0	0	1	0	0
Plantago	0	0	2	2	3
Oxybaphus	1	0	0	0	0
Polygonaceae	4	1	0	0	0
Spores	32	500	59	500	12
Pediastrum (undiff.)	2	1	11	1	5
Total pollen	252	261	281	295	284

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

33

Sample number	161	162	163	164	165
Sample depth (cm)	160.5	161.5	162.5	163.5	164.5
Sample ratio	3.9	1.3	3.9	6.5	3.9
Pinus, large	16	18	24	34	40
Pinus, small	24	28	25	22	35
Abies	3	3	4	9	2
Picea	7	4	6	8	13
Abies/Picea	10	7	10	17	15
Pseudotsuga	0	0	1	2	1
Tsuga	1	0	0	0	0
Quercus	0	1	1	1	5
Populus	1	0	7	4	4
Juniperus	2	0	3	3	0
Juglans	1	0	0	0	0
Betula	3	2	4	6	6
Artemisia	27	34	42	45	61
Franseria-type	3	5	9	4	8
Other Compositae	7	7	16	8	11
Cheno-Ams	11	6	18	24	20
Gramineae	124	117	66	52	73
Saxifragaceae	4	0	0	0	5
Ephedra	0	2	1	2	0
Rosaceae	2	2	1	2	1
Leguminosae	3	1	2	0	3
Cruciferae	4	2	3	8	10
Plantago	0	0	0	3	0
Polygonaceae	1	1	0	0	0
Cyperaceae	0	0	0	0	2
Miscellaneous	0	0	0	0	2
Spores	27	8	25	24	500
Pediastrum (undiff.)	3	0	2	0	0
Total pollen	254	240	243	254	317

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

34

Sample number	166	167	168	169	170
Sample depth (cm)	165.5	166.5	167.5	168.5	169.5
Sample ratio	3.9	3.9	5.2	2.6	3.9
Pinus, large	38	31	50	43	49
Pinus, small	26	22	30	35	39
Abies	8	3	2	1	1
Picea	13	13	10	18	17
Abies/Picea	21	16	12	19	18
Quercus	6	0	1	1	4
Populus	0	4	6	10	8
Juniperus	1	1	3	2	3
Betula	0	5	2	2	1
Artemisia	41	33	38	42	30
Franseria-type	3	6	2	6	3
Other Compositae	10	10	4	15	5
Cheno-Ams	15	5	16	12	16
Gramineae	82	78	79	112	86
Saxifragaceae	1	1	2	1	1
Berberis	1	0	2	0	0
Ephedra	0	0	0	1	0
Rosaceae	5	3	1	3	2
Leguminosae	0	1	1	2	1
Cruciferae	5	9	2	7	1
Plantago	1	1	0	0	0
Polygonaceae	0	0	0	1	1
Cyperaceae	1	0	0	0	0
Miscellaneous	2	4	1	1	1
Spores	18	9	23	24	26
Pediastrum (undiff.)	1	0	1	4	3
Total pollen	280	246	264	334	287

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

35

Sample number	171	172	173	174	175
Sample depth (cm)	170.5	171.5	172.5	173.5	174.5
Sample ratio	3.9	2.6	4.6	7.8	3.9
Pinus, large	57	34	59	84	67
Pinus, small	28	26	8	4	2
Abies	11	5	0	0	0
Picea	15	9	0	0	0
Abies/Picea	26	14	9	27	27
Pseudotsuga	0	0	3	1	1
Quercus	3	0	2	0	1
Populus	10	4	0	0	0
Juniperus	0	0	1	0	0
Acer	0	0	1	0	0
Betula	6	2	0	0	0
Artemisia	38	21	34	55	46
Franseria-type	2	2	0	0	0
Other Compositae	6	5	6	9	5
Cheno-Ams	15	11	12	20	9
Gramineae	58	81	110	94	65
Berberis	0	2	0	0	0
Leguminosae	1	0	0	0	0
Cruciferae	7	6	0	0	0
Plantago	2	0	0	0	0
Miscellaneous	2	0	1	3	0
Pediastrum boryanum	0	0	7	2	4
Pediastrum sculptatum	0	0	1	0	0
Spores	23	15	0	0	0
Pediastrum (undiff.)	2	0	0	0	0
Total pollen	287	222	246	297	223

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

36

Sample number	176	177	178	179	180
Sample depth (cm)	175.5	176.5	177.5	178.5	179.5
Sample ratio	9.1	9.1	9.1	7.8	3.9
Pinus, large	147	48	97	82	53
Pinus, small	4	26	16	6	10
Abies/Picea	16	9	13	12	9
Pseudotsuga	0	2	0	0	0
Quercus	0	9	12	10	14
Juniperus	1	3	6	3	0
Acer	2	3	0	4	9
Fraxinus	0	0	1	1	0
Artemisia	91	82	81	93	71
Other Compositae	25	18	13	14	17
Cheno-Ams	27	16	19	26	20
Gramineae	62	49	31	40	17
Ephedra	0	0	0	1	0
Miscellaneous	1	1	1	2	2
Pediastrum boryanum	0	2	0	2	2
Total pollen	376	266	290	294	222

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

37

Sample number	181	182	183	184	185
Sample depth (cm)	180.5	181.5	182.5	183.5	184.5
Sample ratio	9.1	3.2	3.9	9.1	6.5
Pinus, large	122	129	107	123	91
Pinus, small	1	18	13	17	18
Abies/Picea	20	18	25	16	16
Pseudotsuga	2	0	0	1	0
Quercus	8	21	3	9	15
Juniperus	0	2	0	0	1
Alnus	2	0	0	1	0
Acer	7	0	0	0	0
Betula	0	1	0	0	0
Fraxinus	0	2	0	1	0
Artemisia	119	98	68	112	84
Other Compositae	18	14	11	23	22
Cheno-Ams	26	21	24	64	35
Gramineae	54	11	12	47	32
Ephedra	2	1	0	2	0
Rhamnus	0	0	0	1	1
Miscellaneous	3	0	2	2	1
Pediastrum boryanum	1	1	2	2	0
Pediastrum sculptatum	2	0	0	0	0
Spores	0	1	0	1	0
Total pollen	384	336	265	419	316

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

38

Sample number	186	187	188	189	190
Sample depth (cm)	185.5	186.5	187.5	188.5	189.5
Sample ratio	6.5	3.9	3.9	7.8	2.5
Pinus, large	126	74	57	10	50
Pinus, small	13	15	11	2	23
Abies/Picea	15	11	10	2	15
Pseudotsuga	0	0	0	11	2
Quercus	8	15	27	3	17
Juniperus	1	0	0	0	0
Alnus	1	1	2	0	1
Acer	0	1	0	0	0
Artemisia	93	50	56	5	59
Other Compositae	18	6	9	28	12
Cheno-Ams	33	10	9	0	11
Gramineae	19	77	80	136	81
Saxifragaceae	1	0	0	0	0
Ephedra	0	0	0	2	0
Miscellaneous	0	0	5	12	0
Pediastrum boryanum	0	14	4	8	3
Pediastrum araneosum	0	0	1	0	0
Pediastrum integrum	0	0	0	1	0
Pediastrum sculptatum	0	1	0	3	0
Total pollen	328	260	266	211	271

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

39

Sample number	191	192	193	194	195
Sample depth (cm)	190.5	191.5	192.5	193.5	194.5
Sample ratio	6.5	19.5	3.9	15.6	7.8
Pinus, large	86	78	15	4	6
Pinus, small	18	8	6	1	2
Abies/Picea	21	16	10	1	0
Pseudotsuga	1	1	13	3	29
Quercus	30	5	5	6	9
Populus	0	36	0	0	0
Juniperus	2	0	0	0	0
Alnus	1	0	3	0	0
Betula	0	0	1	0	0
Fraxinus	0	0	2	0	0
Artemisia	69	27	13	0	3
Other Compositae	20	0	43	71	58
Cheno-Ams	19	1	0	0	0
Sarcobatus	0	0	0	0	5
Gramineae	48	73	91	132	104
Saxifragaceae	0	0	1	0	0
Ephedra	2	0	1	8	12
Rhamnus	0	2	0	0	0
Miscellaneous	0	1	2	10	7
Pediastrum boryanum	3	15	31	11	7
Pediastrum integrum	0	0	9	3	3
Pediastrum sculptatum	0	9	5	2	4
Total pollen	317	248	206	236	235

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

40

Sample number	196	197	198	199	200
Sample depth (cm)	195.5	196.5	197.5	198.5	199.5
Sample ratio	7.8	7.8	7.8	7.8	7.8
Pinus, large	0	2	12	5	5
Pinus, small	1	0	3	1	0
Abies/Picea	0	1	4	1	0
Pseudotsuga	15	32	10	16	24
Quercus	6	4	9	11	14
Artemisia	5	12	8	20	28
Other Compositae	41	51	34	81	36
Sarcobatus	1	0	0	0	0
Gramineae	94	108	106	134	134
Saxifragaceae	3	1	3	3	2
Berberis	1	0	0	0	3
Ephedra	22	24	21	8	1
Miscellaneous	9	7	12	3	8
Pediastrum boryanum	0	7	16	28	10
Ped. bory. longifol.	0	0	0	4	0
Pediastrum integrum	0	2	2	6	0
Pediastrum sculptatum	4	8	14	3	3
Total pollen	198	242	222	283	255

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

41

Sample number	201	202	203	204	205
Sample depth (cm)	200.5	201.5	202.5	203.5	204.5
Sample ratio	14.3	9.1	9.1	15.6	15.6
Pinus, large	64	46	78	20	13
Pinus, small	6	3	0	0	2
Abies/Picea	19	12	13	7	3
Pseudotsuga	0	0	6	0	0
Quercus	22	2	7	2	7
Juniperus	6	2	1	0	0
Alnus	1	0	2	0	0
Acer	0	1	1	0	0
Fraxinus	1	0	0	0	0
Artemisia	110	98	85	100	49
Franseria-type	0	0	0	1	3
Other Compositae	6	8	15	9	11
Cheno-Ams	20	13	28	0	0
Sarcobatus	0	0	0	2	0
Gramineae	27	13	30	34	29
Saxifragaceae	5	0	1	4	5
Ephedra	0	0	0	10	0
Cruciferae	0	2	0	0	0
Polygonum	0	2	0	0	0
Rhamnus	1	0	0	0	0
Miscellaneous	8	0	0	8	7
Pediastrum boryanum	12	3	9	33	18
Pediastrum integrum	0	0	0	11	18
Pediastrum sculptatum	0	0	0	4	1
Spores	1	4	2	0	0
Total pollen	296	202	267	197	129

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

42

Sample number	206	207	208	209	210
Sample depth (cm)	205.5	207.5	208.5	209.5	210.5
Sample ratio	22.0	3.9	7.8	11.7	7.8
Pinus, large	4	10	14	19	81
Pinus, small	0	2	4	6	13
Abies/Picea	0	1	3	2	22
Pseudotsuga	1	1	0	1	0
Quercus	6	2	4	9	5
Artemisia	62	170	127	140	139
Franseria-type	0	1	1	4	3
Other Compositae	16	16	9	12	19
Cheno-Ams	0	1	2	1	5
Sarcobatus	0	1	0	0	1
Gramineae	26	15	17	25	17
Saxifragaceae	4	5	3	5	4
Berberis	0	0	0	3	2
Ephedra	12	7	1	5	1
Miscellaneous	4	10	11	2	15
Pediastrum boryanum	5	8	6	9	2
Ped. bory. longifol.	0	1	0	2	0
Pediastrum integrum	5	3	6	5	0
Pediastrum sculptatum	3	0	2	2	0
Total pollen	135	242	196	234	327

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

43

Sample number	211	212	213	214	215
Sample depth (cm)	211.5	212.5	213.5	215.5	216.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	45	54	88	77	92
Pinus, small	12	12	11	17	11
Abies/Picea	10	17	28	34	14
Pseudotsuga	1	3	1	3	3
Quercus	0	1	2	1	4
Artemisia	116	127	204	144	121
Franseria-type	2	4	1	0	0
Other Compositae	7	8	14	15	17
Cheno-Ams	1	0	0	0	11
Sarcobatus	0	0	2	4	4
Gramineae	22	14	16	22	29
Saxifragaceae	0	2	2	1	1
Ephedra	1	2	0	3	1
Miscellaneous	2	0	0	0	3
Pediastrum boryanum	5	0	4	3	1
Ped. bory. longifol.	0	1	0	0	0
Pediastrum integrum	0	1	0	1	0
Pediastrum sculptatum	1	1	0	0	0
Total pollen	219	244	369	321	311

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

44

Sample number	216	217	218	219	220
Sample depth (cm)	217.5	218.5	219.5	220.5	221.5
Sample ratio	3.9	7.8	3.9	3.9	3.9
Pinus, large	37	46	44	102	31
Pinus, small	6	6	9	40	10
Abies/Picea	7	12	4	48	10
Pseudotsuga	4	6	0	2	3
Quercus	0	0	1	1	2
Artemisia	131	109	163	102	122
Other Compositae	4	5	14	18	10
Cheno-Ams	1	0	0	6	0
Sarcobatus	2	2	0	2	0
Gramineae	9	15	11	8	5
Saxifragaceae	1	0	1	1	2
Berberis	0	0	1	0	0
Ephedra	4	3	5	0	3
Miscellaneous	0	0	3	1	7
Pediastrum boryanum	1	8	10	2	12
Pediastrum integrum	0	1	4	1	2
Pediastrum sculptatum	3	1	2	0	3
Unknowns	1	0	1	0	0
Total pollen	206	204	256	331	205

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

45

Sample number	221	222	223	224	225
Sample depth (cm)	222.5	223.5	224.5	225.5	226.5
Sample ratio	3.9	7.8	3.9	4.6	7.8
Pinus, large	56	90	54	233	116
Pinus, small	25	42	31	1	55
Abies/Picea	22	14	16	12	34
Pseudotsuga	2	2	0	0	3
Quercus	1	0	0	16	2
Juniperus	0	0	0	5	0
Acer	0	0	0	4	0
Artemisia	124	68	50	46	41
Franseria-type	0	3	4	0	0
Other Compositae	15	19	10	6	9
Cheno-Ams	1	6	7	10	9
Sarcobatus	2	4	0	0	0
Gramineae	12	20	17	13	24
Saxifragaceae	3	5	0	0	3
Berberis	0	1	0	0	0
Ephedra	0	4	0	0	0
Miscellaneous	1	2	0	0	2
Pediastrum boryanum	10	9	8	1	5
Pediastrum integrum	0	2	0	0	0
Pediastrum sculptatum	1	1	0	0	0
Total pollen	264	280	189	346	298

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

46

Sample number	226	227	228	229	230
Sample depth (cm)	227.5	228.5	229.5	230.5	231.5
Sample ratio	3.9	7.8	3.9	2.0	3.9
Pinus, large	69	94	45	85	50
Pinus, small	26	24	26	39	41
Abies/Picea	13	13	20	15	12
Pseudotsuga	0	5	1	2	0
Quercus	3	0	3	5	5
Artemisia	47	65	58	84	50
Franseria-type	1	3	1	1	2
Other Compositae	7	11	9	11	2
Cheno-Ams	7	15	9	13	14
Sarcobatus	0	1	2	4	1
Gramineae	22	18	20	19	11
Saxifragaceae	0	0	6	1	5
Berberis	0	0	1	0	0
Ephedra	3	6	1	4	3
Miscellaneous	1	1	0	0	0
Pediastrum boryanum	17	15	6	17	6
Ped. bory. longifol.	0	0	0	1	0
Pediastrum integrum	0	1	0	0	0
Pediastrum sculptatum	1	0	0	0	0
Unknowns	0	0	1	1	1
Total pollen	199	256	202	283	196

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

47

Sample number	231	232	233	234	235
Sample depth (cm)	232.5	233.5	234.5	235.5	236.5
Sample ratio	3.9	3.9	4.6	3.9	3.9
Pinus, large	51	60	96	59	49
Pinus, small	34	33	1	22	35
Abies/Picea	15	5	4	14	15
Pseudotsuga	0	2	0	1	1
Quercus	3	1	3	8	1
Juniperus	0	0	2	0	0
Alnus	0	0	1	0	0
Acer	0	0	6	0	0
Retula	0	0	2	0	0
Artemisia	78	68	97	64	56
Franseria-type	2	1	0	4	0
Other Compositae	12	5	14	12	5
Cheno-Ams	9	8	22	11	8
Sarcobatus	0	0	0	4	1
Gramineae	18	13	15	18	20
Saxifragaceae	3	0	0	1	1
Berberis	0	1	0	2	0
Ephedra	0	2	0	2	2
Pediastrum boryanum	14	20	0	12	3
Pediastrum integrum	1	2	0	2	0
Unknowns	1	0	0	0	1
Total pollen	225	199	263	222	194

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

48

Sample number	236	237	238	239	240
Sample depth (cm)	237.5	238.5	239.5	240.5	241.5
Sample ratio	3.9	3.9	3.9	4.6	4.6
Pinus, large	58	65	60	140	115
Pinus, small	46	58	38	1	1
Picea	0	0	0	1	0
Abies/Picea	13	20	25	3	16
Pseudotsuga	0	3	0	1	2
Quercus	3	3	1	2	1
Juniperus	0	0	0	1	1
Alnus	0	0	0	4	0
Acer	0	0	0	0	1
Artemisia	43	35	49	29	44
Franseria-type	0	3	1	0	0
Other Compositae	4	9	5	7	11
Cheno-Ams	3	9	1	7	2
Sarcobatus	1	0	2	0	0
Gramineae	23	16	23	15	21
Saxifragaceae	1	4	1	0	0
Berberis	0	1	0	0	0
Ephedra	5	4	3	0	0
Gentian	0	0	0	0	1
Miscellaneous	0	0	1	0	0
Pediastrum boryanum	14	9	11	3	10
Pediastrum integrum	0	1	0	0	1
Unknowns	0	1	0	1	0
Total pollen	200	230	210	211	216

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

49

Sample number	241	242	243	244	245
Sample depth (cm)	242.5	243.5	244.5	245.5	246.5
Sample ratio	7.2	5.9	8.4	7.2	11.0
Pinus, large	104	119	73	52	51
Pinus, small	1	4	6	5	16
Abies/Picea	2	6	8	4	10
Pseudotsuga	2	0	8	4	0
Quercus	6	12	22	1	2
Populus	0	0	0	5	0
Juniperus	1	2	3	1	2
Acer	2	1	0	1	1
Artemisia	41	37	32	58	77
Other Compositae	11	9	5	11	13
Cheno-Ams	9	12	13	29	16
Gramineae	19	19	59	40	53
Ephedra	0	0	0	0	1
Pediastrum boryanum	7	0	7	7	19
Pediastrum araneosum	0	0	0	0	4
Pediastrum integrum	0	0	0	1	0
Pediastrum sculptatum	0	0	0	0	4
Spores	0	2	6	1	0
Total pollen	198	221	229	211	242

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

50

Sample number	246	247	248	249	250
Sample depth (cm)	247.5	248.5	249.5	250.5	251.5
Sample ratio	4.6	5.9	5.9	8.8	22.0
Pinus, large	66	80	76	90	66
Pinus, small	4	2	1	6	24
Abies	0	0	0	0	1
Picea	0	0	0	10	23
Abies/Picea	7	12	13	14	26
Pseudotsuga	4	1	0	8	7
Quercus	1	15	9	0	1
Populus	3	3	7	0	0
Juniperus	1	2	3	0	0
Alnus	2	1	0	0	0
Acer	9	10	8	0	0
Eetula	0	0	2	0	0
Artemisia	77	63	33	97	131
Other Compositae	13	11	17	13	22
Cheno-Ams	18	22	24	31	44
Gramineae	56	57	43	41	62
Saxifragaceae	0	0	0	12	7
Berberis	0	0	0	0	1
Cyperaceae	0	1	0	0	0
Miscellaneous	0	0	0	0	5
Pediastrum boryanum	9	11	7	1	0
Pediastrum araneosum	0	1	0	0	0
Pediastrum integrum	0	0	1	0	0
Pediastrum sculptatum	3	0	0	0	0
Unknowns	0	0	4	0	3
Total pollen	261	280	236	322	420

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

51

Sample number	251	252	253	254	255
Sample depth (cm)	252.5	253.5	254.5	255.5	257.5
Sample ratio	22.0	11.7	7.8	11.0	8.8
Pinus, large	62	108	55	76	93
Pinus, small	14	9	4	11	5
Abies	1	22	0	1	2
Picea	12	11	3	6	6
Abies/Picea	18	41	3	11	13
Pseudotsuga	1	4	4	1	1
Quercus	2	5	0	0	0
Artemisia	103	221	88	120	144
Franseria-type	0	0	6	0	0
Other Compositae	20	21	19	20	10
Cheno-Ams	32	43	26	29	26
Sarcobatus	1	0	0	0	0
Gramineae	81	112	58	80	33
Saxifragaceae	6	7	6	4	15
Berberis	0	2	1	0	0
Ephedra	0	0	1	4	1
Miscellaneous	7	10	18	18	5
Pediastrum boryanum	0	0	25	1	4
Pediastrum araneosum	0	0	2	0	0
Unknowns	1	3	1	3	0
Total pollen	360	616	292	381	354

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

52

Sample number	256	257	258	259	260
Sample depth (cm)	258.5	259.5	260.5	261.5	262.5
Sample ratio	11.6	10.5	22.0	15.6	19.5
Pinus, large	71	79	59	42	43
Pinus, small	3	1	1	0	2
Abies	0	2	1	0	0
Picea	0	2	1	4	2
Abies/Picea	10	8	14	14	5
Pseudotsuga	0	0	2	0	0
Artemisia	114	140	149	153	140
Franseria-type	0	7	2	2	0
Other Compositae	14	15	13	15	4
Cheno-Ams	17	36	20	28	24
Sarcobatus	0	0	2	0	0
Gramineae	31	37	31	29	41
Saxifragaceae	3	2	9	10	0
Berberis	1	0	0	0	0
Ephedra	1	0	0	0	0
Miscellaneous	6	2	8	0	0
Pediastrum boryanum	12	3	72	69	23
Ped. bory. longifol.	0	0	2	7	4
Pediastrum araneosum	0	0	11	8	2
Pediastrum integrum	0	0	1	1	0
Pediastrum sculptatum	0	0	3	2	0
Pediastrum soore	0	0	1	0	0
Unknowns	1	0	0	0	0
Total pollen	271	331	312	297	261

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

53

Sample number	261	262	263	264	265
Sample depth (cm)	263.5	264.5	265.5	266.5	267.5
Sample ratio	22.0	11.7	14.3	9.1	7.8
Pinus, large	33	111	91	66	61
Pinus, small	2	3	1	2	2
Abies	0	2	1	2	4
Picea	5	6	1	5	5
Abies/Picea	14	19	17	20	22
Pseudotsuga	0	3	1	1	2
Quercus	0	0	0	1	0
Artemisia	128	134	108	84	117
Franseria-type	2	1	6	3	4
Other Compositae	4	14	17	6	10
Cheno-Ams	23	26	23	22	27
Sarcobatus	3	3	0	0	1
Gramineae	40	34	24	22	37
Saxifragaceae	0	4	6	11	5
Berberis	5	9	1	0	0
Miscellaneous	1	0	7	5	0
Pediastrum boryanum	18	10	23	8	11
Ped. bory. longifol.	5	1	7	2	21
Pediastrum araneosum	1	0	3	1	0
Pediastrum sculptatum	0	0	0	0	1
Unknowns	0	1	0	0	0
Total pollen	260	369	304	250	297

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

54

Sample number	266	267	268	269	270
Sample depth (cm)	268.5	269.5	270.5	271.5	272.5
Sample ratio	7.8	7.8	7.8	7.8	3.9
Pinus, large	117	72	159	130	64
Pinus, small	3	2	4	2	6
Abies	2	0	7	6	1
Picea	3	3	5	6	3
Abies/Picea	31	11	34	32	22
Pseudotsuga	4	0	6	3	5
Quercus	0	1	0	0	0
Artemisia	121	101	171	122	81
Franseria-type	5	2	4	11	3
Other Compositae	11	9	26	23	9
Cheno-Ams	35	29	23	26	12
Sarcobatus	3	2	2	0	0
Gramineae	39	39	54	28	22
Saxifragaceae	6	4	7	22	2
Miscellaneous	0	0	3	7	0
Pediastrum boryanum	14	8	5	3	2
Ped. bory. longifol.	11	2	7	4	11
Pediastrum araneosum	0	2	0	0	0
Pediastrum integrum	0	2	0	0	2
Unknowns	0	1	0	0	0
Total pollen	380	275	505	418	230

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

55

Sample number	271	272	273	274	275
Sample depth (cm)	273.5	274.5	275.5	276.5	277.5
Sample ratio	7.8	7.8	15.6	7.8	11.7
Pinus, large	83	119	55	129	97
Pinus, small	3	3	0	2	2
Abies	3	1	0	0	2
Picea	7	1	1	3	3
Abies/Picea	26	13	1	13	14
Pseudotsuga	5	4	0	5	4
Quercus	5	4	4	5	0
Artemisia	85	112	99	117	102
Franseria-type	0	8	5	7	10
Other Compositae	8	18	15	11	15
Cheno-Ams	23	20	34	22	11
Sarcobatus	0	1	1	2	0
Gramineae	32	17	27	25	33
Saxifragaceae	2	1	1	2	1
Ephedra	1	0	0	0	1
Miscellaneous	6	7	2	0	4
Pediastrum boryanum	10	6	1	4	5
Ped. bory. longifol.	36	11	7	8	1
Pediastrum araneosum	3	0	1	0	0
Unknowns	0	0	0	1	0
Total pollen	289	329	245	343	299

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

56

Sample number	276	277	278	279	280
Sample depth (cm)	278.5	279.5	280.5	281.5	282.5
Sample ratio	7.8	7.8	5.2	3.9	11.7
Pinus, large	98	160	158	86	90
Pinus, small	2	2	3	0	2
Abies	0	1	2	3	4
Picea	0	4	6	4	7
Abies/Picea	6	14	30	21	37
Pseudotsuga	2	2	2	2	5
Quercus	0	0	7	9	0
Artemisia	81	90	72	57	81
Franseria-type	2	3	13	8	4
Other Compositae	6	8	29	13	4
Cheno-Ams	11	12	11	11	12
Sarcobatus	1	0	0	1	0
Gramineae	15	11	25	14	19
Saxifragaceae	2	0	1	3	4
Miscellaneous	2	7	2	1	2
Pediastrum boryanum	2	1	0	0	51
Ped. bory. longifol.	2	0	0	1	46
Pediastrum araneosum	0	0	0	0	14
Pediastrum integrum	0	0	0	0	9
Pediastrum sculptatum	0	0	0	0	6
Total pollen	228	314	361	233	271

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

57

Sample number	281	282	283	284	285
Sample depth (cm)	283.5	284.5	285.5	286.5	287.5
Sample ratio	11.7	15.6	13.0	11.7	11.7
Pinus, large	87	80	35	49	57
Pinus, small	5	5	1	0	0
Abies	1	5	4	1	2
Picea	1	4	7	10	8
Abies/Picea	25	43	42	38	52
Pseudotsuga	3	0	1	5	8
Quercus	3	8	7	16	12
Artemisia	91	110	79	60	48
Franseria-type	3	3	0	6	3
Other Compositae	8	15	11	16	8
Cheno-Ams	16	13	7	16	11
Gramineae	15	18	21	8	20
Saxifragaceae	1	2	2	5	1
Ephedra	0	3	0	0	1
Miscellaneous	0	0	2	2	2
Pediastrum boryanum	58	30	53	53	17
Ped. bory. longifol.	27	76	41	66	23
Pediastrum araneosum	12	4	10	22	11
Pediastrum integrum	15	10	18	41	24
Pediastrum sculptatum	9	1	3	26	42
Unknowns	0	1	0	1	0
Total pollen	259	309	219	232	233

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

58

Sample number	286	287	288	289	290
Sample depth (cm)	288.5	289.5	290.5	291.5	292.5
Sample ratio	15.6	15.6	11.7	20.8	19.5
Pinus, large	71	41	51	52	109
Pinus, small	2	1	0	1	0
Abies	4	2	3	2	1
Picea	3	4	4	1	6
Abies/Picea	28	54	33	52	66
Pseudotsuga	4	1	0	0	0
Quercus	16	5	10	3	3
Artemisia	43	92	94	82	52
Franseria-type	3	6	2	3	1
Other Compositae	7	10	7	11	8
Cheno-Ams	8	15	14	16	15
Gramineae	8	17	16	25	2
Saxifragaceae	8	4	2	3	1
Ephedra	1	0	0	1	3
Miscellaneous	1	0	2	2	2
Pediastrum boryanum	24	0	4	2	0
Ped. bory. longifol.	17	0	0	3	0
Pediastrum araneosum	2	0	2	0	1
Pediastrum integrum	9	0	0	2	0
Pediastrum sculptatum	9	0	0	5	1
Total pollen	207	252	238	254	269

walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

59

Sample number	291	292	293	294	295
Sample depth (cm)	293.5	294.5	295.5	296.5	297.5
Sample ratio	6.5	7.8	15.6	19.5	20.8
Pinus, large	127	247	217	139	151
Pinus, small	2	2	3	4	6
Abies	0	0	0	1	1
Picea	1	5	4	2	3
Abies/Picea	36	33	12	11	9
Pseudotsuga	0	2	0	0	2
Quercus	3	0	2	5	12
Artemisia	18	15	21	53	14
Franseria-type	2	2	0	0	0
Other Compositae	2	4	2	4	2
Cheno-Ams	8	2	2	9	4
Sarcobatus	0	0	1	0	0
Gramineae	4	3	1	7	3
Saxifragaceae	0	0	0	5	2
Ephedra	1	0	0	0	0
Miscellaneous	1	5	2	0	0
Pediastrum boryanum	0	1	1	12	3
Ped. bory. longifol.	0	0	0	18	6
Pediastrum araneosum	0	0	0	1	0
Pediastrum integrum	0	0	0	6	4
Pediastrum sculptatum	0	0	0	12	20
Total pollen	205	320	267	240	209

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

60

Sample number	296	297	298	299	300
Sample depth (cm)	298.5	299.5	300.5	301.5	302.5
Sample ratio	16.9	18.3	11.7	11.7	11.7
Pinus, large	91	125	88	85	167
Pinus, small	2	3	3	3	1
Abies	0	0	0	0	2
Picea	1	2	3	4	4
Abies/Picea	11	14	14	55	60
Pseudotsuga	0	1	0	0	0
Quercus	12	10	15	8	9
Artemisia	74	100	57	25	30
Franseria-type	3	7	10	7	1
Other Compositae	6	12	12	8	7
Cheno-Ams	10	29	10	12	5
Sarcobatus	0	1	0	0	1
Gramineae	11	14	12	10	9
Saxifragaceae	13	9	9	6	7
Berberis	0	0	0	0	1
Ephedra	0	0	0	1	0
Miscellaneous	0	3	0	2	3
Pediastrum boryanum	4	10	4	1	2
Ped. bory. longifol.	26	5	0	0	0
Pediastrum araneosum	15	0	2	0	0
Pediastrum integrum	4	3	0	0	0
Pediastrum sculptatum	13	16	2	0	0
Total pollen	234	330	233	226	307

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

61

Sample number	301	302	303	304	305
Sample depth (cm)	303.5	304.5	305.5	306.5	307.5
Sample ratio	19.5	13.0	14.3	11.7	20.8
Pinus, large	176	115	80	88	74
Pinus, small	3	0	3	2	5
Abies	1	3	1	2	2
Picea	2	5	1	8	5
Abies/Picea	64	75	58	58	43
Pseudotsuga	2	2	0	0	1
Quercus	10	3	2	3	13
Artemisia	48	64	66	91	66
Franseria-type	2	2	1	2	1
Other Compositae	9	9	2	5	2
Cheno-Ams	3	19	8	10	11
Gramineae	10	5	10	8	7
Saxifragaceae	1	3	2	2	2
Berberis	0	1	0	0	3
Miscellaneous	1	2	0	6	2
Pediastrum boryanum	2	5	1	15	2
Ped. bory. longifol.	0	0	0	8	2
Pediastrum araneosum	0	0	0	2	2
Pediastrum integrum	0	0	0	5	3
Pediastrum sculptatum	0	0	0	3	2
Unknowns	0	0	13	0	0
Total pollen	332	308	234	285	237

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

62

Sample number	306	307	308	309	310
Sample depth (cm)	308.5	309.5	310.5	311.5	312.5
Sample ratio	15.6	15.6	11.7	11.7	11.7
Pinus, large	72	79	78	88	179
Pinus, small	1	2	1	1	0
Abies	3	2	0	2	2
Picea	0	6	13	8	7
Abies/Picea	35	38	49	37	37
Pseudotsuga	1	2	1	1	1
Quercus	9	10	3	5	3
Artemisia	38	43	62	65	27
Franseria-type	5	3	4	2	2
Other Compositae	9	9	10	6	6
Cheno-Ams	13	8	21	14	6
Sarcobatus	0	0	0	0	1
Gramineae	7	29	12	23	12
Saxifragaceae	1	2	3	1	2
Berberis	4	4	5	0	0
Miscellaneous	13	11	5	1	0
Pediastrum boryanum	7	1	4	1	0
Ped. bory. longifol.	0	1	4	0	0
Pediastrum araneosum	4	0	0	0	0
Pediastrum integrum	0	2	1	0	0
Pediastrum sculptatum	3	0	1	0	0
Total pollen	211	248	267	254	285

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

63

Sample number	311	312	313	314	315
Sample depth (cm)	313.5	314.5	315.5	316.5	317.5
Sample ratio	7.8	7.8	11.7	15.6	11.7
Pinus, large	155	199	143	120	40
Pinus, small	1	2	2	1	16
Abies	1	1	6	1	2
Picea	4	4	2	0	0
Abies/Picea	19	39	27	5	4
Pseudotsuga	2	0	2	5	2
Quercus	10	5	7	15	2
Artemisia	18	15	20	49	80
Franseria-type	2	5	3	4	4
Other Compositae	4	12	8	13	12
Cheno-Ams	7	3	2	11	24
Sarcobatus	1	0	0	0	0
Gramineae	14	8	9	10	23
Saxifragaceae	1	1	0	1	2
Berberis	0	1	0	4	1
Ephedra	0	0	0	1	0
Miscellaneous	2	10	13	0	6
Pediastrum boryanum	0	0	0	2	16
Ped. bory. longifol.	0	0	0	0	6
Pediastrum araneosum	0	0	0	1	2
Pediastrum integrum	0	0	0	3	0
Pediastrum sculptatum	0	0	0	0	4
Total pollen	241	305	244	240	218

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

64

Sample number	316	317	318	319	320
Sample depth (cm)	318.5	319.5	320.5	321.5	322.5
Sample ratio	11.7	11.7	11.7	11.7	7.8
Pinus, large	81	78	52	58	58
Pinus, small	1	9	6	3	2
Abies	1	0	2	0	0
Picea	0	1	0	0	11
Abies/Picea	2	3	5	8	18
Pseudotsuaa	1	3	0	1	6
Quercus	11	15	9	10	0
Artemisia	88	96	93	79	80
Franseria-type	4	10	6	8	4
Other Compositae	12	19	10	24	13
Cheno-Ams	28	23	14	9	9
Gramineae	13	13	33	22	20
Saxifragaceae	2	3	1	7	3
Berberis	1	3	3	0	0
Ephedra	0	1	0	11	7
Miscellaneous	1	2	0	0	0
Pediastrum boryanum	31	42	43	50	80
Ped. bory. longifol.	5	8	23	27	38
Pediastrum araneosum	3	4	0	24	0
Pediastrum integrum	7	3	17	6	12
Pediastrum sculptatum	11	9	30	14	9
Total pollen	246	279	234	240	231

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

65

Sample number	321	322	323	324	325
Sample depth (cm)	323.5	324.5	325.5	326.5	327.5
Sample ratio	7.8	7.8	7.8	6.5	3.9
Pinus, large	70	83	75	135	91
Pinus, small	7	8	3	3	1
Abies/Picea	2	1	3	9	1
Pseudotsuga	10	4	8	13	5
Quercus	3	4	6	10	49
Artemisia	79	67	44	72	38
Franseria-type	2	1	5	6	4
Other Compositae	7	4	18	11	5
Cheno-Ams	9	4	6	4	6
Sarcobatus	0	0	0	5	0
Gramineae	12	27	24	26	28
Saxifragaceae	3	4	4	12	9
Ephedra	3	11	13	8	6
Pediastrum boryanum	34	59	48	4	2
Ped. bory. longifol.	20	33	14	4	0
Pediastrum araneosum	0	0	0	0	1
Pediastrum integrum	4	18	19	1	0
Pediastrum sculptatum	5	11	4	0	0
Total pollen	207	218	209	314	243

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

66

Sample number	326	327	328	329	330
Sample depth (cm)	328.5	329.5	330.5	331.5	332.5
Sample ratio	3.9	7.8	7.8	7.8	7.8
Pinus, large	96	133	121	144	105
Pinus, small	1	5	0	3	12
Abies/Picea	6	11	0	13	10
Pseudotsuga	4	9	5	16	9
Quercus	9	9	4	9	13
Artemisia	63	73	44	37	26
Franseria-type	3	6	1	5	3
Other Compositae	4	8	3	7	17
Cheno-Ams	3	6	3	4	1
Sarcobatus	0	4	0	0	3
Gramineae	13	29	19	13	17
Saxifragaceae	3	4	1	4	17
Ephedra	2	4	2	3	1
Pediastrum boryanum	0	1	2	0	0
Ped. bory. longifol.	0	0	1	0	2
Pediastrum araneosum	0	1	0	0	0
Pediastrum integrum	0	0	0	0	1
Pediastrum sculptatum	0	0	1	0	0
Total pollen	207	301	203	258	234

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

67

Sample number	331	332	333	334	335
Sample depth (cm)	333.5	334.5	335.5	336.5	337.5
Sample ratio	3.9	7.8	3.9	3.9	3.9
Pinus, large	86	93	91	69	95
Pinus, small	3	3	4	2	3
Abies/Picea	5	10	3	4	5
Pseudotsuga	22	27	21	29	27
Quercus	1	7	3	9	40
Artemisia	27	29	20	20	31
Franseria-type	1	4	4	4	4
Other Compositae	9	9	9	8	7
Cheno-Ams	2	3	3	4	7
Sarcobatus	2	2	3	1	1
Gramineae	34	52	47	47	84
Saxifragaceae	15	9	6	6	12
Berberis	0	2	0	1	1
Ephedra	4	3	4	6	8
Pediastrum boryanum	9	7	1	1	2
Ped. bory. longifol.	1	2	0	1	1
Pediastrum araneosum	2	0	2	1	0
Pediastrum integrum	0	5	1	6	2
Pediastrum sculptatum	6	2	7	7	11
Total pollen	211	253	218	210	325

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

68

Sample number	336	337	338	339	340
Sample depth (cm)	338.5	340.5	341.5	342.5	343.5
Sample ratio	3.9	7.8	7.8	7.8	7.8
Pinus, large	107	158	101	85	96
Pinus, small	0	9	22	85	128
Abies/Picea	9	3	7	11	4
Pseudotsuga	13	10	14	24	25
Quercus	14	10	6	3	25
Artemisia	18	31	17	20	37
Franseria-type	3	0	0	1	3
Other Compositae	5	0	1	4	6
Cheno-Ams	4	6	7	3	3
Sarcobatus	1	1	2	2	3
Gramineae	28	27	13	8	13
Saxifragaceae	1	5	1	0	3
Berberis	0	1	0	1	0
Ephedra	3	3	4	3	2
Pediastrum boryanum	0	2	1	0	1
Ped. bory. longifol.	0	1	0	0	0
Pediastrum sculptatum	1	0	4	2	2
Total pollen	206	264	195	250	348

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

69

Sample number	341	342	343	344	345
Sample depth (cm)	344.5	345.5	346.5	347.5	348.5
Sample ratio	3.9	3.9	7.8	7.8	7.8
Pinus, large	60	68	58	37	25
Pinus, small	74	64	92	65	61
Abies/Picea	9	1	2	1	0
Pseudotsuga	16	25	4	1	3
Quercus	3	7	13	25	30
Artemisia	19	18	32	47	47
Franseria-type	2	3	3	5	1
Other Compositae	2	4	5	7	3
Cheno-Ams	8	3	5	1	6
Sarcobatus	0	0	0	0	1
Gramineae	22	9	4	12	9
Saxifragaceae	0	0	4	12	8
Berberis	1	2	0	3	1
Ephedra	4	0	2	5	3
Miscellaneous	0	3	0	0	0
Pediastrum integrum	0	1	1	0	0
Pediastrum sculptatum	0	5	0	1	0
Total pollen	220	207	224	221	198

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

70

Sample number	346	347	348	349	350
Sample depth (cm)	349.5	350.5	351.5	352.5	353.5
Sample ratio	7.8	7.8	3.9	3.9	3.9
Pinus, large	31	29	14	11	8
Pinus, small	57	96	54	34	47
Pseudotsuga	3	4	4	4	5
Quercus	21	27	23	150	71
Artemisia	44	48	41	25	37
Franseria-type	6	5	1	1	2
Other Compositae	6	8	2	3	4
Cheno-Ams	6	10	7	1	6
Sarcobatus	2	3	2	3	1
Gramineae	14	10	30	50	22
Saxifragaceae	10	12	10	8	6
Berberis	2	5	3	1	0
Ephedra	5	6	5	2	4
Pediastrum boryanum	3	3	0	3	1
Ped. bory. longifol.	3	6	4	1	3
Pediastrum integrum	1	0	1	0	0
Pediastrum sculotatum	5	10	3	8	4
Unknowns	1	0	0	0	0
Total pollen	207	263	196	293	213

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

71

Sample number	351	352	353	354	355
Sample depth (cm)	354.5	355.5	356.5	357.5	358.5
Sample ratio	7.8	7.8	7.8	3.9	3.9
Pinus, large	8	14	9	41	10
Pinus, small	5	22	11	3	28
Abies/Picea	2	12	8	10	9
Pseudotsuga	7	3	0	1	1
Quercus	76	30	49	181	54
Artemisia	53	52	35	61	34
Franseria-type	0	1	3	4	1
Other Compositae	4	4	6	9	15
Cheno-Ams	4	3	2	1	4
Sarcobatus	4	3	2	1	0
Gramineae	17	37	53	109	21
Saxifragaceae	2	5	8	2	14
Berberis	0	1	0	0	0
Ephedra	13	9	25	13	19
Miscellaneous	3	3	0	0	0
Pediastrum boryanum	9	49	38	3	0
Ped. bory. longifol.	38	0	0	7	2
Pediastrum integrum	0	8	4	3	0
Pediastrum sculptatum	30	28	39	6	2
Total pollen	198	199	211	436	210

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

72

Sample number	356	357	358	359	360
Sample depth (cm)	359.5	360.5	361.5	362.5	363.5
Sample ratio	7.8	7.8	7.8	3.9	7.8
Pinus, large	3	34	13	21	26
Pinus, small	9	69	19	17	33
Abies/Picea	9	3	3	9	5
Pseudotsuga	1	3	1	3	4
Quercus	63	10	41	18	24
Artemisia	36	28	45	35	33
Franseria-type	0	2	0	1	4
Other Compositae	14	7	14	37	41
Cheno-Ams	0	5	3	2	4
Sarcobatus	3	0	1	0	0
Gramineae	35	12	55	12	20
Saxifragaceae	10	18	13	19	23
Berberis	0	1	0	1	0
Ephedra	18	5	35	24	20
Miscellaneous	4	1	4	1	0
Pediastrum boryanum	2	0	4	1	2
Ped. bory. longifol.	1	0	3	0	0
Pediastrum integrum	0	0	1	0	0
Pediastrum sculptatum	5	1	13	3	2
Total pollen	205	198	247	200	237

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

73

Sample number	361	362	363	364	365
Sample depth (cm)	364.5	365.5	366.5	367.5	368.5
Sample ratio	7.8	7.8	22.0	22.0	1.9
Pinus, large	15	38	22	10	273
Pinus, small	10	40	9	4	0
Abies/Picea	6	12	4	0	26
Pseudotsuga	4	5	5	4	1
Quercus	60	36	24	5	6
Juniperus	0	0	0	0	1
Artemisia	38	47	35	2	12
Franseria-type	3	1	3	1	0
Other Compositae	57	34	69	23	0
Cheno-Ams	1	3	4	0	4
Sarcobatus	1	1	0	0	0
Gramineae	23	19	15	10	0
Saxifragaceae	5	8	5	1	1
Ephedra	25	20	13	5	0
Miscellaneous	0	0	1	0	0
Pediastrum boryanum	2	0	1	1	0
Ped. bory. longifol.	6	3	9	0	0
Pediastrum integrum	0	0	1	2	0
Pediastrum sculptatum	3	6	15	2	0
Total pollen	248	264	209	65	324

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

74

Sample number	366	367	368	369	370
Sample depth (cm)	369.5	370.5	371.5	372.5	373.5
Sample ratio	11.7	22.0	22.0	22.0	22.0
Pinus, large	64	40	21	22	9
Pinus, small	160	72	13	73	20
Abies/Picea	3	0	0	1	1
Pseudotsuga	4	2	4	3	14
Quercus	10	12	7	8	17
Artemisia	17	38	19	25	41
Franseria-type	1	1	0	0	0
Other Compositae	9	18	0	63	78
Cheno-Ams	6	4	30	0	1
Sarcobatus	2	1	0	0	0
Gramineae	5	9	14	24	32
Saxifragaceae	15	20	9	13	15
Berberis	1	0	0	0	0
Ephedra	9	27	13	14	29
Miscellaneous	0	0	0	0	2
Pediastrum boryanum	0	0	1	0	1
Ped. bory. longifol.	0	0	0	0	1
Pediastrum integrum	0	0	0	0	2
Pediastrum sculptatum	0	0	0	2	6
Total pollen	306	244	130	246	259

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

75

Sample number	371	372	373	374	375
Sample depth (cm)	374.5	375.5	376.5	377.5	378.5
Sample ratio	22.0	15.6	22.0	15.6	3.9
Pinus, large	4	59	48	12	27
Pinus, small	6	19	2	26	30
Abies/Picea	1	0	0	1	4
Pseudotsuga	11	7	6	6	10
Quercus	25	16	9	23	10
Artemisia	11	24	17	31	48
Franseria-type	1	0	0	7	8
Other Compositae	51	56	21	23	16
Cheno-Ams	1	1	0	7	14
Sarcobatus	0	0	0	0	2
Gramineae	22	44	26	25	15
Saxifragaceae	11	30	12	40	28
Berberis	0	2	0	0	0
Ephedra	10	19	4	15	13
Miscellaneous	0	1	1	1	7
Pediastrum boryanum	1	5	3	5	2
Ped. bory. longifol.	17	7	10	15	7
Pediastrum integrum	0	0	0	1	0
Pediastrum sculptatum	16	22	8	15	7
Unknowns	0	0	0	21	38
Total pollen	154	278	146	217	232

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

76

Sample number	376	377	378	379	380
Sample depth (cm)	379.5	380.5	381.5	382.5	383.5
Sample ratio	7.8	11.7	7.8	22.0	7.8
Pinus, large	16	15	13	0	23
Pinus, small	14	18	15	0	52
Abies/Picea	8	2	6	1	3
Pseudotsuga	0	3	5	2	0
Quercus	16	21	22	26	16
Artemisia	61	82	52	17	51
Franseria-type	6	9	3	0	4
Other Compositae	15	31	51	164	34
Cheno-Ams	6	8	6	0	7
Sarcobatus	2	2	0	0	0
Gramineae	18	35	30	36	16
Saxifragaceae	13	10	3	3	14
Ephedra	20	34	21	8	18
Miscellaneous	13	14	5	3	11
Pediastrum boryanum	2	3	0	0	6
Ped. bory. longifol.	18	21	10	22	22
Pediastrum integrum	4	7	3	2	4
Pediastrum sculptatum	20	9	8	17	7
Unknowns	28	41	12	12	8
Total pollen	208	284	232	260	249

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

77

Sample number	381	382	383	384	385
Sample depth (cm)	384.5	385.5	386.5	387.5	388.5
Sample ratio	11.7	3.9	7.8	11.7	7.8
Pinus, large	0	148	5	4	20
Pinus, small	0	0	15	18	27
Abies/Picea	0	0	2	0	5
Pseudotsuga	0	0	0	1	0
Quercus	61	0	53	43	28
Artemisia	22	17	27	82	74
Franseria-type	2	1	1	1	0
Other Compositae	92	80	34	30	18
Cheno-Ams	1	1	5	1	7
Sarcobatus	0	0	2	0	1
Gramineae	29	41	29	12	14
Saxifragaceae	2	4	4	0	1
Ephedra	10	20	20	29	10
Miscellaneous	1	0	2	3	7
Pediastrum boryanum	0	1	5	1	1
Ped. bory. longifol.	12	5	9	30	28
Pediastrum integrum	1	0	6	10	5
Pediastrum sculptatum	10	2	5	17	23
Unknowns	8	1	57	24	1
Total pollen	220	312	199	224	212

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

78

Sample number	386	387	388	389	390
Sample depth (cm)	389.5	390.5	391.5	392.5	393.5
Sample ratio	11.7	7.8	7.8	11.7	3.9
Pinus, large	28	111	25	16	9
Pinus, small	67	4	54	85	28
Abies/Picea	2	23	8	0	0
Pseudotsuga	0	2	2	0	2
Quercus	13	10	37	30	64
Juniperus	0	4	0	0	0
Artemisia	65	76	61	79	35
Franseria-type	2	0	3	2	7
Other Compositae	12	11	20	22	21
Cheno-Ams	0	20	14	13	5
Sarcobatus	2	0	0	1	0
Gramineae	3	18	9	16	25
Saxifragaceae	0	0	1	0	0
Ephedra	9	0	15	16	13
Miscellaneous	9	0	0	3	1
Pediastrum boryanum	2	0	0	0	2
Ped. bory. longifol.	24	0	0	1	0
Pediastrum integrum	5	0	0	0	0
Pediastrum sculptatum	16	0	0	2	1
Unknowns	0	0	1	4	2
Total pollen	212	279	249	283	210

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

79

Sample number	391	392	393	394	395
Sample depth (cm)	394.5	395.5	396.5	397.5	398.5
Sample ratio	7.8	7.8	3.9	3.9	3.9
Pinus, large	20	14	10	22	25
Pinus, small	47	39	40	63	61
Abies/Picea	0	2	1	0	0
Pseudotsuga	4	3	3	4	1
Quercus	108	72	122	31	18
Artemisia	51	36	27	46	46
Franseria-type	6	3	5	5	10
Other Compositae	44	34	25	10	26
Cheno-Ams	12	13	7	8	16
Sarcobatus	1	0	0	0	1
Gramineae	39	21	42	18	7
Saxifragaceae	0	0	0	2	1
Ephedra	16	16	10	15	10
Miscellaneous	2	8	2	4	6
Pediastrum boryanum	1	1	0	0	0
Ped. bory. longifol.	4	2	0	1	0
Pediastrum sculptatum	0	1	0	2	1
Unknowns	4	2	1	0	1
Total pollen	350	261	294	228	228

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

80

Sample number	396	397	398	399	400
Sample depth (cm)	399.5	400.5	401.5	402.5	403.5
Sample ratio	3.9	7.8	3.9	3.9	3.9
Pinus, large	36	55	42	67	52
Pinus, small	68	79	122	67	79
Abies/Picea	0	0	0	3	0
Pseudotsuga	2	0	1	2	2
Quercus	10	16	7	10	10
Artemisia	45	62	59	57	62
Franseria-type	5	2	2	4	7
Other Compositae	12	7	4	7	21
Cheno-Ams	5	1	5	5	8
Sarcobatus	1	0	0	1	1
Gramineae	6	5	1	2	1
Saxifragaceae	2	3	0	0	0
Berberis	1	0	0	0	0
Ephedra	3	11	8	2	6
Miscellaneous	10	10	4	0	3
Ped. hory. longifol.	1	0	0	0	0
Pediastrum sculptatum	0	3	0	0	0
Total pollen	206	251	255	227	252

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

81

Sample number	401	402	403	404	405
Sample depth (cm)	404.5	405.5	406.5	407.5	408.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	75	71	75	56	61
Pinus, small	95	74	110	121	107
Abies/Picea	2	4	0	0	0
Pseudotsuga	2	1	0	0	1
Quercus	6	2	5	5	17
Artemisia	61	74	89	57	62
Franseria-type	7	1	9	0	4
Other Compositae	29	51	56	48	27
Cheno-Ams	6	10	6	7	5
Sarcobatus	1	1	0	1	2
Gramineae	4	2	1	0	6
Saxifragaceae	0	0	0	0	1
Ephedra	1	2	0	4	3
Miscellaneous	0	1	1	0	1
Total pollen	289	294	352	299	297

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

82

Sample number	406	407	403	409	410
Sample depth (cm)	409.5	410.5	411.5	412.5	413.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	70	67	91	115	110
Pinus, small	74	119	112	132	114
Abies/Picea	0	0	0	1	1
Pseudotsuga	0	0	3	4	3
Quercus	16	1	14	15	6
Artemisia	69	42	33	26	51
Franseria-type	12	3	2	2	2
Other Compositae	23	11	6	3	4
Cheno-Ams	8	5	4	2	2
Sarcobatus	1	0	0	0	0
Gramineae	2	2	4	3	10
Saxifragaceae	2	0	1	0	1
Ephedra	5	2	2	1	1
Miscellaneous	2	4	1	1	1
Total pollen	284	256	273	305	306

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

83

Sample number	411	412	413	414	415
Sample depth (cm)	414.5	415.5	416.5	417.5	418.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	138	93	104	108	74
Pinus, small	117	113	75	82	69
Abies/Picea	0	0	0	2	0
Pseudotsuga	1	4	2	1	1
Quercus	17	6	8	11	9
Artemisia	73	33	32	32	24
Franseria-type	10	5	2	4	2
Other Compositae	16	11	3	5	13
Cheno-Ams	9	4	2	2	3
Gramineae	6	1	5	2	5
Saxifragaceae	0	2	1	0	0
Berberis	0	1	0	0	0
Ephedra	6	1	0	4	4
Miscellaneous	0	0	0	1	0
Total pollen	393	274	234	254	204

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

84

Sample number	416	417	418	419	420
Sample depth (cm)	419.5	420.5	421.5	422.5	423.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	111	92	198	88	152
Pinus, small	109	95	185	97	138
Abies/Picea	0	0	0	0	1
Pseudotsuga	4	1	5	0	0
Quercus	26	22	21	21	34
Artemisia	52	50	55	44	38
Franseria-type	6	4	8	8	1
Other Compositae	10	11	12	15	8
Cheno-Ams	5	7	3	6	2
Sarcobatus	0	0	2	0	1
Gramineae	3	3	12	3	5
Saxifragaceae	0	1	0	0	0
Ephedra	1	1	2	3	0
Miscellaneous	0	1	0	0	0
Total pollen	327	288	503	285	380

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

85

Sample number	421	422	423	424	425
Sample depth (cm)	424.5	425.5	426.5	427.5	428.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	93	83	122	108	100
Pinus, small	109	84	72	115	96
Abies/Picea	0	1	0	0	0
Pseudotsuga	1	1	7	1	3
Quercus	4	9	8	9	17
Artemisia	36	28	42	65	48
Franseria-type	6	3	1	3	7
Other Compositae	8	6	5	6	15
Cheno-Ams	7	2	3	1	3
Gramineae	0	1	6	2	3
Saxifragaceae	0	0	3	1	1
Berberis	0	0	0	0	1
Ephedra	0	1	2	4	3
Miscellaneous	0	1	1	2	2
Ped. bory. longifol.	0	0	0	2	0
Pediastrum integrum	0	0	0	1	1
Total pollen	264	220	272	317	299

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

86

Sample number	426	427	428	429	430
Sample depth (cm)	429.5	430.5	431.5	432.5	433.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	87	119	96	64	80
Pinus, small	60	67	80	66	79
Abies/Picea	1	0	0	2	0
Pseudotsuqa	2	1	1	1	0
Quercus	16	13	29	25	33
Artemisia	47	89	101	67	93
Franseria-type	2	4	2	7	6
Other Compositae	15	10	6	11	8
Cheno-Ams	2	4	17	2	7
Sarcobatus	0	2	2	0	0
Gramineae	5	0	4	3	0
Saxifragaceae	3	1	0	2	0
Ephedra	3	1	3	0	3
Miscellaneous	1	3	3	2	1
Pediastrum sculptatum	0	1	0	0	0
Total pollen	244	314	344	252	310

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

87

Sample number	431	432	433	434	435
Sample depth (cm)	434.5	435.5	436.5	437.5	438.5
Sample ratio	3.9	3.9	7.8	3.9	3.9
Pinus, large	83	70	41	68	63
Pinus, small	40	55	18	19	39
Abies/Picea	0	0	0	0	1
Pseudotsuga	4	1	1	2	5
Quercus	10	9	28	21	32
Artemisia	112	72	109	91	107
Franseria-type	5	8	0	5	8
Other Compositae	29	31	32	14	33
Cheno-Ams	5	8	4	3	11
Sarcobatus	0	0	0	1	1
Gramineae	6	5	4	7	3
Saxifragaceae	1	2	4	0	1
Berberis	1	1	1	1	0
Ephedra	2	3	2	8	3
Miscellaneous	3	0	1	2	1
Pediastrum boryanum	0	0	1	2	2
Ped. bory. longifol.	0	0	0	0	1
Pediastrum integrum	0	0	0	1	1
Pediastrum sculptatum	0	0	1	0	7
Unknowns	0	1	0	0	0
Total pollen	301	265	245	242	308

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

88

Sample number	436	437	438	439	440
Sample depth (cm)	439.5	440.5	441.5	442.5	443.5
Sample ratio	3.9	3.9	7.8	3.9	3.9
Pinus, large	63	53	97	53	40
Pinus, small	43	40	64	45	41
Abies/Picea	1	0	0	0	0
Pseudotsuga	2	0	7	6	8
Quercus	41	25	30	25	16
Artemisia	130	68	110	75	68
Franseria-type	9	10	10	12	13
Other Compositae	23	17	19	22	34
Cheno-Ams	14	13	14	13	11
Sarcobatus	0	1	0	0	0
Gramineae	2	5	8	2	6
Saxifragaceae	1	0	1	0	0
Berberis	1	0	2	0	1
Ephedra	2	0	0	0	1
Miscellaneous	0	0	1	2	5
Pediastrum boryanum	0	0	0	1	0
Ped. bory. longifol.	1	0	3	1	0
Pediastrum integrum	0	2	0	2	1
Pediastrum sculptatum	0	1	1	0	0
Unknowns	0	3	1	1	0
Total pollen	332	232	363	255	244

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

89

Sample number	441	442	443	444	445
Sample depth (cm)	444.5	445.5	446.5	447.5	448.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	74	81	102	126	119
Pinus, small	49	66	64	66	66
Abies/Picea	2	3	2	1	4
Pseudotsuga	9	14	4	6	13
Quercus	15	21	19	8	10
Artemisia	50	57	71	41	72
Franseria-type	8	13	13	4	3
Other Compositae	25	35	58	18	10
Cheno-Ams	9	7	4	7	5
Sarcobatus	1	1	0	1	0
Gramineae	6	2	23	6	4
Saxifragaceae	1	0	0	1	0
Berberis	0	0	0	0	1
Ephedra	0	3	3	0	0
Miscellaneous	2	4	1	0	0
Pediastrum boryanum	0	6	0	0	0
Pediastrum integrum	3	0	0	0	0
Unknowns	2	1	1	0	0
Total pollen	251	307	364	285	307

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

90

Sample number	446	447	448	449	450
Sample depth (cm)	449.5	450.5	451.5	452.5	453.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	104	73	68	77	68
Pinus, small	49	43	59	59	42
Abies/Picea	0	1	1	1	1
Pseudotsuga	1	4	2	5	7
Quercus	13	49	32	36	0
Artemisia	70	73	49	45	60
Franseria-type	6	8	1	3	0
Other Compositae	9	26	17	21	13
Cheno-Ams	8	7	13	11	5
Sarcobatus	2	0	0	1	2
Gramineae	1	7	4	10	9
Saxifragaceae	1	1	0	1	0
Berberis	1	2	2	0	0
Ehgedra	2	3	1	7	5
Miscellaneous	0	6	2	5	0
Pediastrum boryanum	0	0	1	9	10
Ped. bory. longifol.	0	0	0	0	5
Pediastrum integrum	0	0	0	0	1
Pediastrum sculptatum	0	0	4	0	5
Unknowns	0	4	0	0	0
Total pollen	267	303	251	282	212

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

91

Sample number	451	452	453	454	455
Sample depth (cm)	454.5	455.5	456.5	457.5	458.5
Sample ratio	3.9	3.9	3.9	3.9	7.8
Pinus, large	70	75	80	90	222
Pinus, small	34	35	35	66	130
Abies/Picea	1	3	2	2	0
Pseudotsuga	13	8	6	5	6
Quercus	28	17	13	11	14
Artemisia	40	38	44	53	73
Franseria-type	1	0	1	1	3
Other Compositae	16	25	33	28	33
Cheno-Ams	1	6	10	6	11
Gramineae	9	6	2	7	14
Saxifragaceae	2	0	1	0	0
Berberis	2	0	1	0	3
Ephedra	3	6	9	2	4
Miscellaneous	2	1	7	2	5
Pediastrum boryanum	10	8	3	0	2
Ped. bory. longifol.	4	5	0	0	1
Pediastrum integrum	1	0	0	0	0
Pediastrum sculptatum	5	6	1	0	0
Unknowns	0	2	1	0	1
Total pollen	222	220	244	273	518

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

92

Sample number	456	457	458	459	460
Sample depth (cm)	459.5	460.5	461.5	462.5	463.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	113	86	130	138	98
Pinus, small	89	46	86	86	60
Abies/Picea	3	2	0	1	1
Pseudotsuga	4	1	2	9	7
Quercus	13	12	25	14	12
Artemisia	54	43	51	33	21
Franseria-type	3	1	2	4	1
Other Compositae	22	12	24	18	13
Cheno-Ams	4	3	5	6	4
Gramineae	7	4	25	10	3
Saxifragaceae	1	0	0	0	0
Berberis	2	2	3	0	1
Ephedra	4	0	1	2	1
Miscellaneous	1	5	1	0	1
Pediastrum boryanum	1	2	3	3	1
Ped. bory. longifol.	0	0	1	0	0
Pediastrum integrum	0	0	3	0	0
Pediastrum sculptatum	1	5	3	2	0
Total pollen	320	217	355	321	223

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

93

Sample number	461	462	463	464	465
Sample depth (cm)	464.5	465.5	466.5	467.5	468.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	115	94	96	118	113
Pinus, small	51	55	62	94	69
Pseudotsuga	9	13	14	7	11
Quercus	22	3	2	7	6
Artemisia	31	26	21	28	51
Franseria-type	3	1	0	1	2
Other Compositae	23	24	10	6	8
Cheno-Ams	10	3	2	5	10
Sarcobatus	1	0	0	0	0
Gramineae	16	3	2	3	7
Berberis	2	0	0	2	0
Ephedra	3	0	1	2	0
Miscellaneous	1	0	0	1	0
Pediastrum boryanum	3	0	0	0	0
Pediastrum sculptatum	2	0	0	0	0
Total pollen	287	222	210	274	277

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

94

Sample number	466	467	468	469	470
Sample depth (cm)	469.5	470.5	471.5	472.5	473.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	138	109	95	99	107
Pinus, small	53	34	53	58	31
Abies/Picea	2	3	2	2	12
Pseudotsuga	9	5	14	19	11
Quercus	9	6	6	14	13
Artemisia	47	49	38	43	51
Franseria-type	0	4	0	3	0
Other Compositae	5	19	13	12	10
Cheno-Ams	5	7	5	8	4
Sarcobatus	0	0	0	1	0
Gramineae	3	7	8	5	6
Berberis	0	1	1	2	4
Ephedra	2	1	3	1	0
Miscellaneous	0	0	1	6	15
Pediastrum boryanum	1	0	1	1	0
Ped. bory. longifol.	0	1	0	0	1
Total pollen	273	245	239	273	264

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

95

Sample number	471	472	473	474	475
Sample depth (cm)	474.5	475.5	476.5	477.5	478.5
Sample ratio	7.8	3.9	3.9	3.9	3.9
Pinus, large	119	109	157	125	102
Pinus, small	28	35	26	34	41
Abies/Picea	5	1	8	6	5
Pseudotsuga	22	4	1	2	5
Quercus	16	9	3	7	6
Artemisia	42	30	62	44	36
Franseria-type	0	0	3	2	0
Other Compositae	5	7	5	8	4
Cheno-Ams	3	4	10	13	9
Sarcobatus	0	0	0	0	1
Gramineae	9	2	4	11	7
Saxifragaceae	0	0	0	0	1
Berberis	2	1	5	5	2
Ephedra	1	1	1	6	3
Miscellaneous	3	2	3	4	3
Pediastrum boryanum	1	0	0	1	3
Ped. bory. longifol.	2	0	0	0	0
Pediastrum sculptatum	4	0	0	0	0
Total pollen	255	205	288	267	225

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

96

Sample number	476	477	478	479	480
Sample depth (cm)	479.5	480.5	481.5	482.5	483.5
Sample ratio	3.9	3.9	3.9	7.8	3.9
Pinus, large	110	126	121	140	134
Pinus, small	36	27	20	32	29
Abies/Picea	0	5	3	1	14
Pseudotsuga	9	2	3	3	4
Quercus	6	8	6	10	7
Artemisia	40	37	71	66	41
Franseria-type	0	1	0	1	0
Other Compositae	6	7	7	21	4
Cheno-Ams	4	4	5	12	7
Gramineae	8	3	4	7	1
Saxifragaceae	0	0	1	2	1
Berberis	3	3	4	1	1
Ephedra	2	0	0	2	3
Miscellaneous	1	1	4	4	3
Pediastrum boryanum	1	0	0	0	0
Ped. bory. longifol.	0	0	1	0	0
Pediastrum sculptatum	0	0	0	1	0
Unknowns	0	0	0	1	0
Total pollen	225	224	249	302	249

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

97

Sample number	481	482	483	484	485
Sample depth (cm)	484.5	485.5	486.5	487.5	488.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	118	137	89	94	114
Pinus, small	71	88	38	54	61
Abies	0	1	0	0	0
Abies/Picea	14	10	6	9	7
Pseudotsuqa	3	6	3	4	4
Quercus	2	3	1	5	2
Artemisia	42	41	50	45	28
Franseria-type	0	2	1	0	0
Other Compositae	5	14	4	5	2
Cheno-Ams	5	4	6	6	0
Sarcobatus	0	0	1	0	1
Gramineae	4	5	1	3	2
Saxifragaceae	1	1	0	0	0
Berberis	1	1	2	1	2
Ephedra	1	5	1	2	0
Miscellaneous	4	3	0	0	2
Pediastrum boryanum	0	1	0	0	0
Pediastrum integrum	0	0	1	0	0
Unknowns	0	1	0	0	0
Total pollen	271	321	203	228	225

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

98

Sample number	486	487	488	489	490
Sample depth (cm)	489.5	490.5	491.5	492.5	493.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	148	114	77	114	95
Pinus, small	56	66	57	89	59
Abies/Picea	4	5	10	11	4
Pseudotsuga	7	7	11	6	4
Quercus	7	5	5	4	5
Artemisia	52	53	46	53	41
Franseria-type	2	1	0	0	0
Other Compositae	4	1	7	7	6
Cheno-Ams	4	9	5	8	3
Gramineae	1	4	0	8	3
Berberis	1	1	0	0	1
Ephedra	1	1	1	5	2
Miscellaneous	5	3	2	2	1
Total pollen	292	270	221	307	224

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

99

Sample number	491	492	493	494	495
Sample depth (cm)	494.5	495.5	496.5	497.5	498.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	112	90	82	93	94
Pinus, small	81	57	43	48	66
Abies/Picea	11	12	11	14	20
Pseudotsuga	1	3	3	5	1
Quercus	6	5	2	4	3
Artemisia	67	54	48	40	47
Franseria-type	1	1	1	1	0
Other Compositae	7	10	6	4	2
Cheno-Ams	11	3	5	2	4
Sarcobatus	1	0	0	0	0
Gramineae	6	7	2	1	2
Berberis	1	0	0	0	1
Ephedra	6	2	3	3	1
Miscellaneous	2	2	1	2	0
Total pollen	313	246	207	217	241

Walker Lake, Arizona - Pollen counts
for 5-meter section below cinders

100

Sample number	496	497	498	499	500
Sample depth (cm)	499.5	500.5	501.5	502.5	503.5
Sample ratio	3.9	3.9	3.9	3.9	3.9
Pinus, large	75	84	102	112	72
Pinus, small	73	63	70	75	59
Abies/Picea	17	14	13	28	26
Pseudotsuga	4	2	3	1	2
Quercus	3	4	7	3	7
Artemisia	38	31	90	51	44
Franseria-type	0	0	1	0	4
Other Compositae	7	22	12	7	16
Cheno-Ams	8	3	5	7	9
Gramineae	1	3	3	5	4
Berberis	0	1	0	0	2
Ephedra	1	2	1	0	3
Miscellaneous	0	1	1	0	0
Unknowns	0	0	1	0	0
Total pollen	227	230	308	289	248